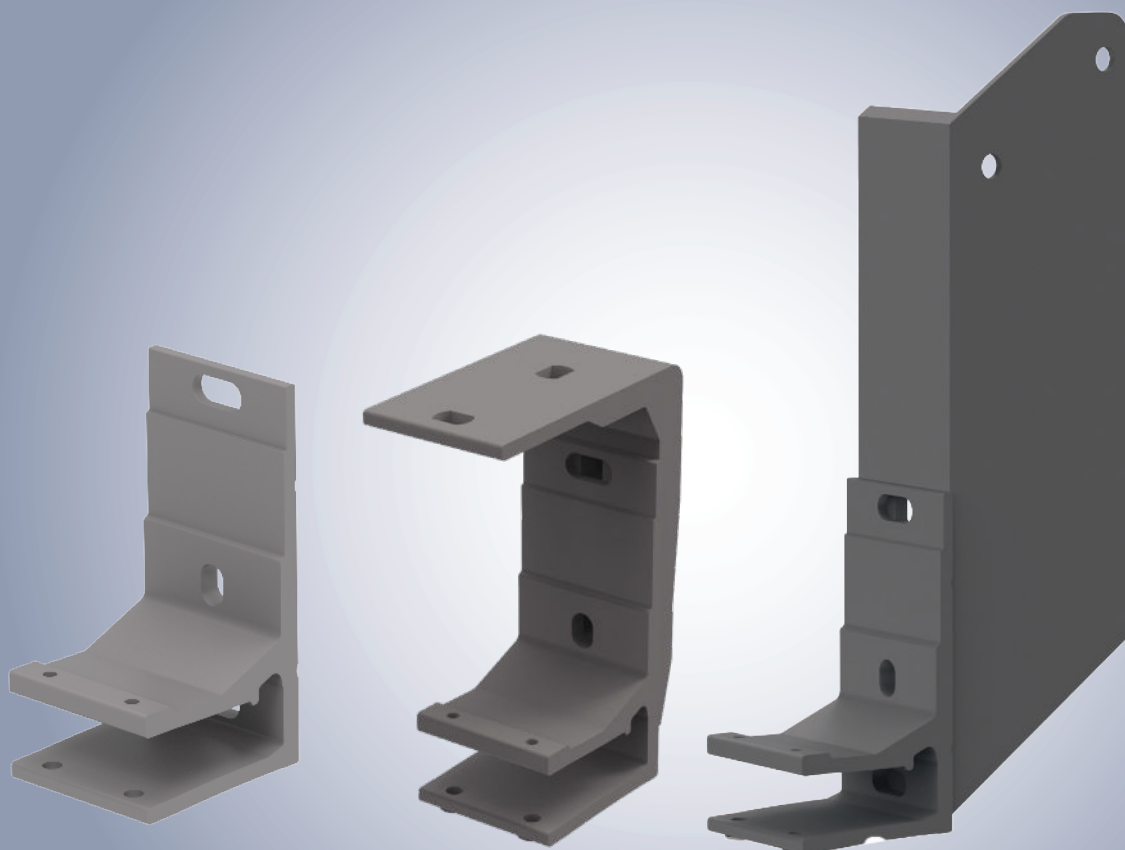




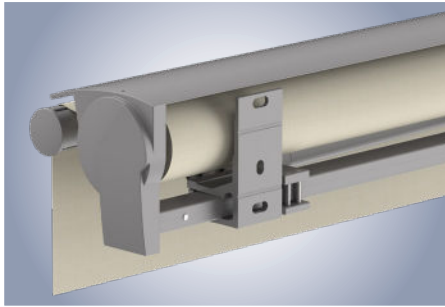
Bracket overview

Wall mounting | Roof mounting
Rafter mounting

Last revised January 2026

Bracket overview 2026

Overview of all available bracket alternatives as well the resulting extraction or shear forces and transverse forces.



Square/carrier bar awnings

- **Kubata (cassette-awning)**
- **I/K 2000 (cassette-awning)**
- **N 2000**
- **Semina**
- **Topas II**
 - without VarioShade Valance all alternatives
 - with VarioShade Valance all alternatives
 - MiniMax
 - Niche



Cassette-awnings

- **Opal Design II**
 - without VarioShade Valance
 - with VarioShade Valance
- **Semina Life**
 - without VarioShade Valance
 - with VarioShade Valance
- **Smaila**
 - without VarioShade Valance
 - with VarioShade Valance
- **Cassita II**

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02 Cassette-awnings

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Subject to technical modifications as well as range/programme changes.

Introduction and explanations

What is the extraction force?

(wall mounting, roof mounting, front roof mounting)

The extraction force is the force with which the resulting load of awning weight and wind load pulls on each top or front fixing material.

It varies depending on the unit size and the type of bracket or mount used.

The maximum permissible extraction force depends on the installation surface and choice of fixing materials.

What is the shear force?

(Rafter mounting)

For rafter mounting, the shear force is relevant instead of the extraction force.

The shear force is the force with which the resulting load of awning weight and wind load stresses the front fixing material with shear.

It varies depending on the unit size and the way it is mounted to the rafter.

The maximum permissible shear force depends on the rafter properties and choice of fixing materials.

What is the transverse force?

(Wall mounting, rafter mounting, front roof mounting)

For installation on a non-pressure-resistant surface (facing) the transverse force is relevant.

The transverse force is the force resulting from the total awning weight, which acts on each individual fixing material with bending stress.

Due to the bending of the screws under load, there is not only the danger of buckling but also the danger of water getting into the insulation.

The manufacturers of the fixing materials provide values for the maximum loads in their data sheets.

Selecting the appropriate bracket assembly:

1. Consult the relevant table for extraction force per fixing material for selected awning size.
2. Select a bracket assembly for which there is fixing material which can resist the indicated extraction force. The distances to the edges for the fixing material must be taken into account.

Please note: The fixing material specifications (maximum extraction force, edge distances,...) can be requested from the respective manufacturers.

Please note: When ordering the bracket type "rafter bracket", a set of screws is supplied: "Set of screws for rafters from 2009";
weinor item no. 111458-0000

When the supplied fixing materials are used correctly, the maximum shear force is **8.93 kN** per fixing material. Observe the notes on basic conditions on page 6!

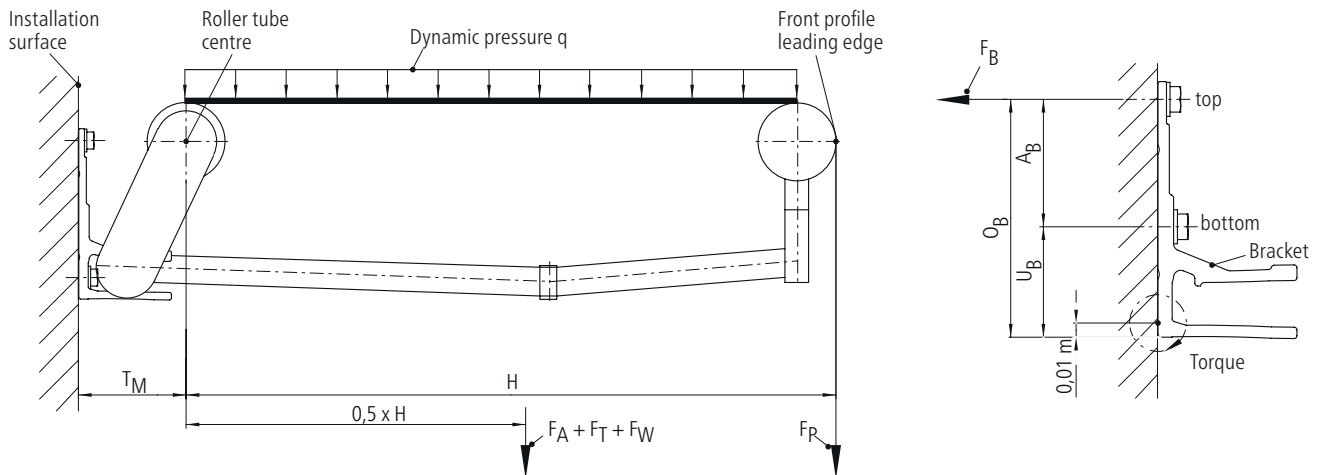
List of abbreviations:

WB	Wall bracket
CTB	Centre bracket
MP	Mounting plate
BP	Base plate
RP	Roof front plate
CB	Ceiling bracket
CCB	Compact ceiling bracket
RB	Rafter bracket
AP	Adaptor plate (for rafter brackets)

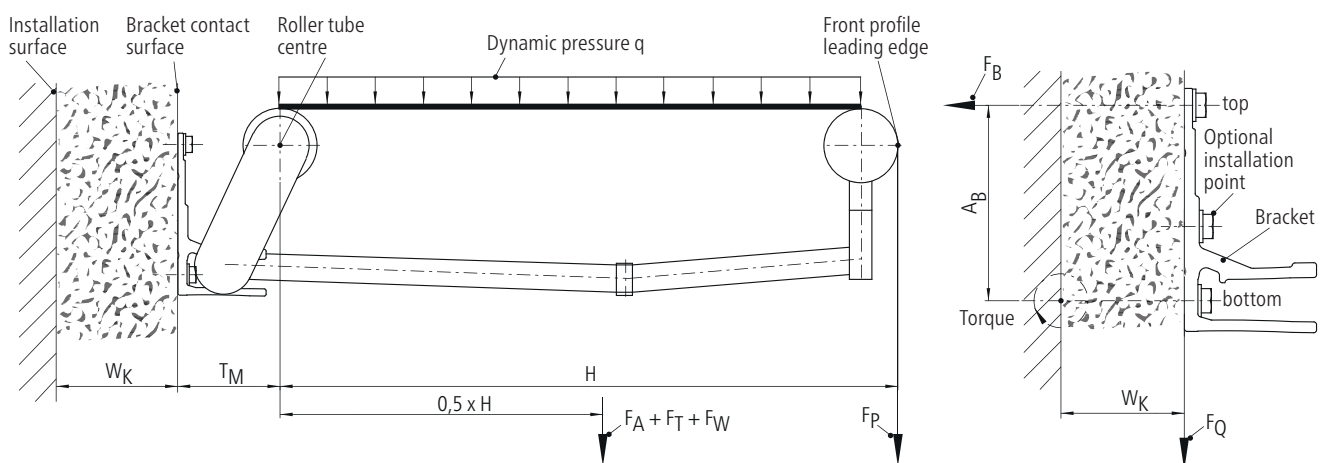
Introduction and explanations

Awning mounting

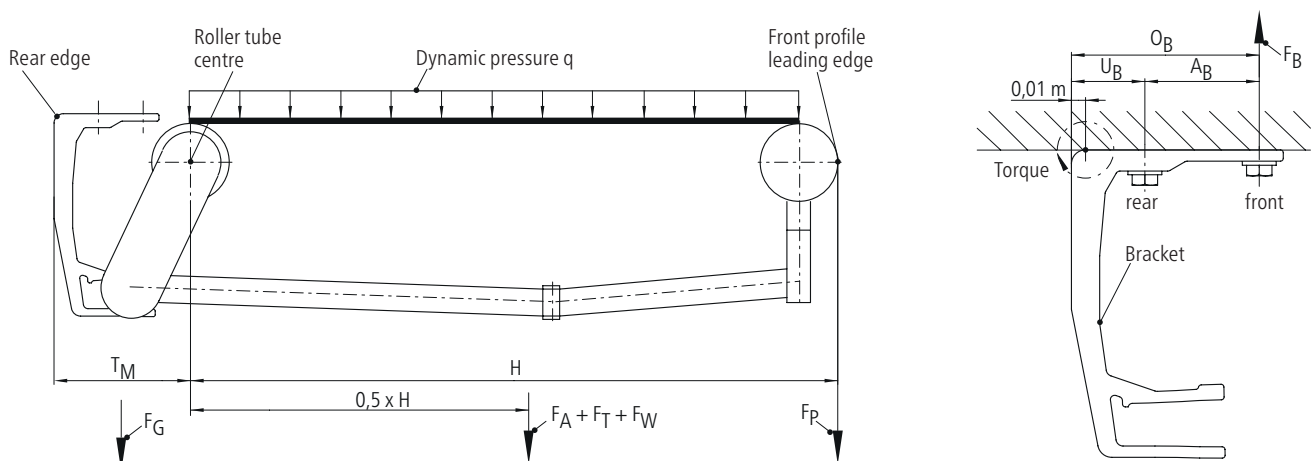
Awning mounting on pressure-resistant surface



Awning mounting on non-pressure-resistant surface



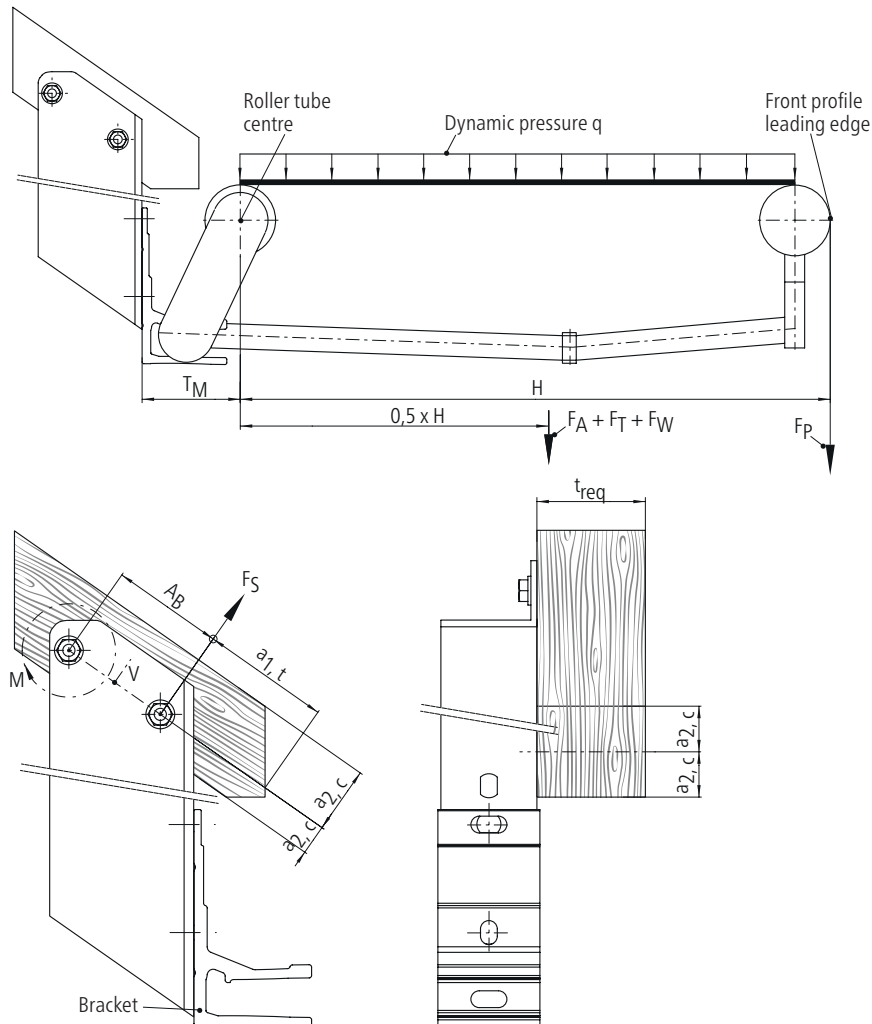
Awning mounting with ceiling bracket



Introduction and explanations

Awning mounting

Awning mounting with rafter bracket



The following basic conditions apply to the use of the “Set of screws for rafters from 2009”;
weinor item no. 111458-0000

Basis	C2 62/12 plate dowel with Ø 12 mm bolts		
Recommended minimum wood thickness	t_{req}	[mm]	70
Pre-drilling		[mm]	≤ 13
Minimum distances	$a_{1,t}$	[mm]	93
Minimum distances	$a_{2,c}$	[mm]	38
Permissible shear force		[kN]	8.93

Introduction and explanations

More details for mounting on rafters

Due to the different wood surfaces (thickness, type of wood, grain, age of the wood, etc.), it must be checked before installation whether the surface is suitably load-bearing. The enclosed fixing materials are not necessarily suitable for the local structural conditions. The enclosed mounting set is designed for the following basic conditions:

- C24 coniferous wood
- The duration of load effect is classified as "short"
- Texture class 2 (wood, outdoor use)
- The angle between the direction of force and the direction of the wood grain is 0°
- Recommended minimum wood thickness $t_{\text{req}} = 70 \text{ mm}$
- Recommended minimum edge distances $a_{1,t} = 93 \text{ mm}$ und $a_{2,c} = 38 \text{ mm}$

List of abbreviations from the illustrations on page 5-6

F_A	Resulting load from weight of folding arms
F_T	Resulting load from the weight of the fabric
F_W	Resulting load from fabric surface and dynamic pressure (wind load)
F_P	Resulting load from the weight of the front profile
F_G	Resulting load from the weight of the frame, without folding arms and front profile
q	Dynamic pressure

M	Resulting torque
F_B	Extraction force on top or front fixing material
F_S	Shear force on the front fixing material
F_Q	Transverse force per fixing material

H	Projection according to EN 1932
T_M	Spacing between middle of roller tube and rear edge of bracket
W_K	Total thickness of the facing to be bridged
O_B	Spacing between bottom/rear edge of bracket and top/front installation point
U_B	Spacing between bottom/rear edge of bracket and bottom/rear installation point
A_B	Spacing between bottom/rear to top/front installation point

Square/carrier bar awnings



01 Square/carrier bar awnings

Selection of brackets

Wall mounting	10
Wall mounting with mounting plates	15
Roof mounting	20
Rafter mounting	27

Selection of brackets

Wall mounting

Bracket assembly consisting of:

85 mm wall bracket; item no. 106810

Notes on this bracket assembly:

1x 85 mm wall bracket (WB85)

1 bracket per arm

1 top installation point

2 installation points in total

Standard installation points: Top + middle

Optional installation points: Top + bottom

(reduced extraction force if not pressure-resistant)



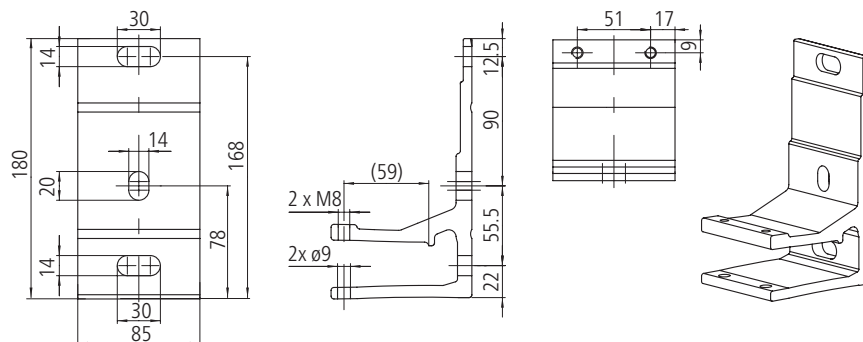
85 mm wall bracket



85 mm niche wall bracket

Corresponding centre bracket assembly:

85 mm wall bracket (WB85); item no. 106810



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2	2x WB85	without CTB	2x 106810
3	3x WB85	with CTB	3x 106810
4	4x WB85	3 arms, with CTB	4x 106810

Design as niche bracket possible:

85 mm niche wall bracket; item no. 131536

Selection of brackets

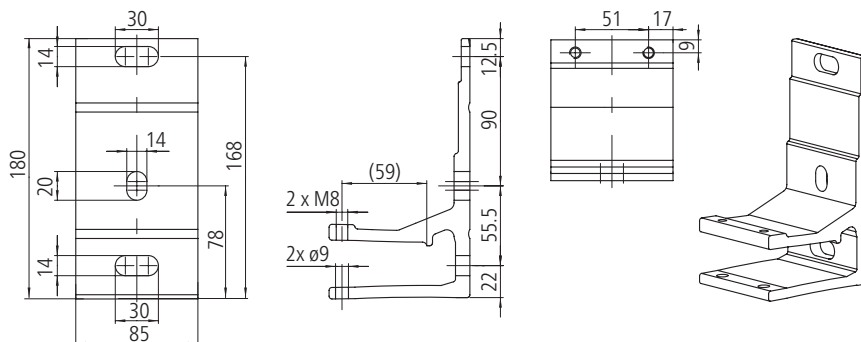
Wall mounting

Bracket assembly consisting of:
85 mm wall bracket; item no. 106810

Notes on this bracket assembly:
2x 85 mm wall bracket (WB85)
2 brackets per awning arm, distance between centre lines 210 mm
2 top installation points
4 installation points in total
Standard installation points: Top + middle
Optional installation points: Top + bottom (reduced extraction force if not pressure-resistant)
Reduced width/length ratio



Corresponding centre bracket assembly:
85 mm wall bracket (WB85); item no. 106810



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
4	4x WB85	without CTB	4x 106810
5	5x WB85	with CTB	5x 106810
7	7x WB85	3 arms, with CTB	7x 106810

Design as niche bracket possible:
85 mm niche wall bracket; item no. 131536

Selection of brackets

Wall mounting

Bracket assembly consisting of:

260 mm wall bracket; item no. 108752

Notes on this bracket assembly:

1x 260 mm wall bracket (WB260)

1 bracket per arm

2 top installation points, distance between centre lines 210 mm

4 installation points in total

Standard installation points: Top + middle

Optional installation points: Top + bottom

(reduced extraction force if not pressure-resistant)



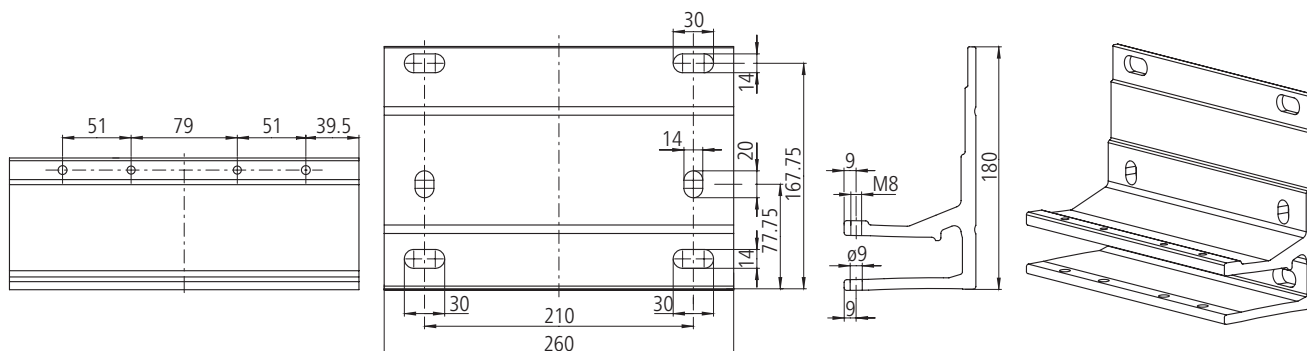
260 mm wall bracket



260 mm niche wall bracket

Corresponding centre bracket assembly:

85 mm wall bracket (WB85); item no. 106810



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2	2x WB260	without CTB	2x 108752
2;1	2x WB260, 1x WB85	with CTB	2x 108752 + 1x 106810
3;1	3x WB260, 1x WB85	3 arms, with CTB	3x 108752 + 1x 106810

Design as niche bracket possible:

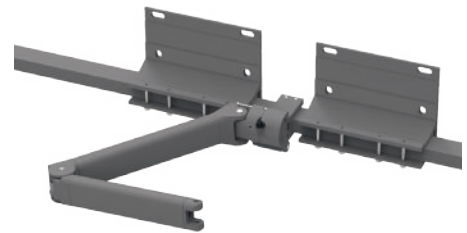
260 mm niche wall bracket; item no. 130648

Selection of brackets

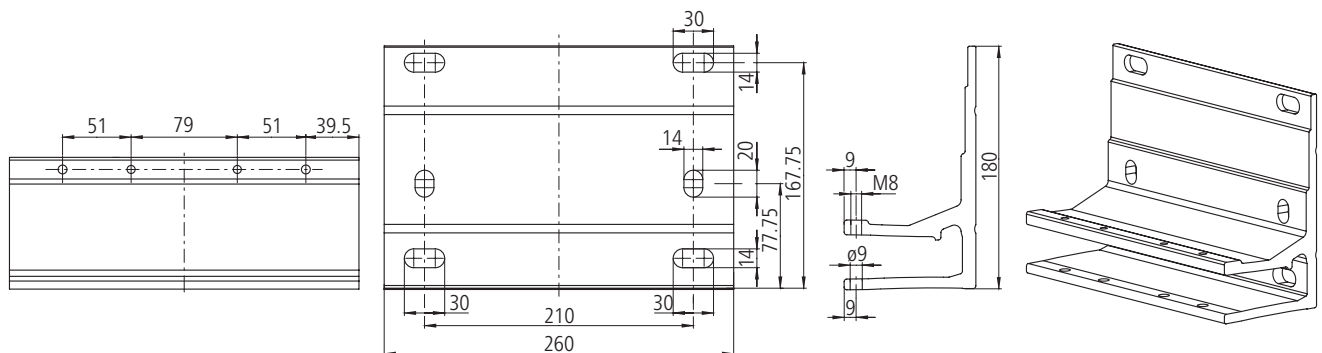
Wall mounting

Bracket assembly consisting of:
260 mm wall bracket; item no. 108752

Notes on this bracket assembly:
2x 260 mm wall bracket (WB260)
2 brackets per awning arm, distance between centre lines 285 mm
4 top installation points, distance between centre lines per bracket 210 mm
8 installation points in total
Standard installation points: Top + middle
Optional installation points: Top + bottom (reduced extraction force if not pressure-resistant)
Not for Kubata with LED
Reduced width/length ratio



Corresponding centre bracket assembly:
85 mm wall bracket (WB85); item no. 106810



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
4	4x WB260	without CTB	4x 108752
4;1	4x WB260, 1x WB85	with CTB	4x 108752 + 1x 106810
6;1	6x WB260, 1x WB85	3 arms, with CTB	6x 108752 + 1x 106810

Design as niche bracket possible:
260 mm niche wall bracket; item no. 130648

Selection of brackets

Wall mounting

Kubata bracket assembly consisting of:
295 mm wall bracket; item no. 125667

Notes on this bracket assembly:
1x 295 mm wall bracket (WB295)
1 bracket per arm
3 top installation points, distance between centre lines 105 mm
6 installation points in total
Standard installation points: Top + middle
Optional installation points: Top + bottom
(reduced extraction force if not pressure-resistant)
Reduced width/length ratio
Cannot be used with three-arm constructions!

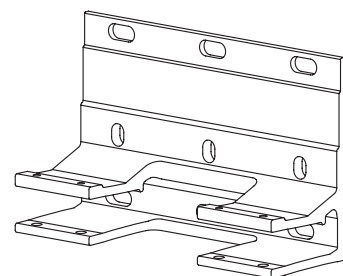
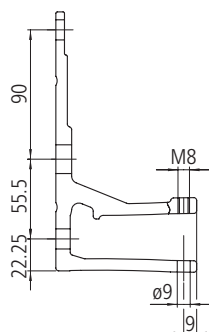
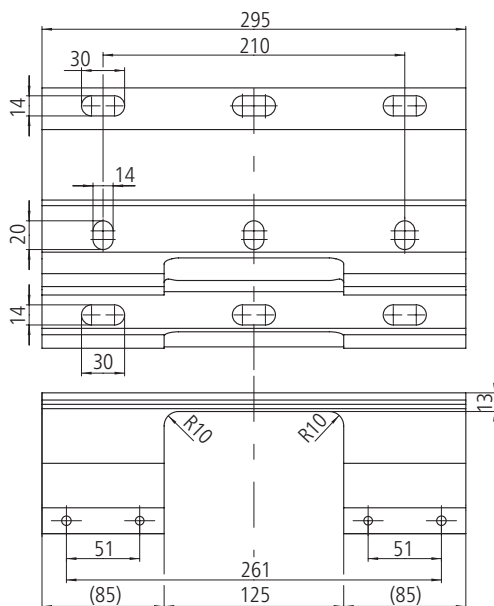


295 mm wall bracket



295 mm niche wall bracket

Corresponding centre bracket assembly:
85 mm wall bracket (WB85); item no. 106810



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2	2x WB295	without CTB	2x 125667
2;1	2x WB295, 1x WB85	with CTB	2x 125667 + 1x 106810

Design as niche bracket possible:
295 mm niche wall bracket; item no. 130641

Selection of brackets

Wall mounting with mounting plate

Bracket assembly consisting of:

250 x 290 x 15 mm mounting plate with:
- 1x 85 mm wall bracket; item no. 108753

Notes on this bracket assembly:

1x 250 x 290 x 15 mm mounting plate (MP250)

incl. 1x 85 mm wall bracket (WB85)

1 mounting plate per arm

2 top installation points, distance between centre lines 200 mm

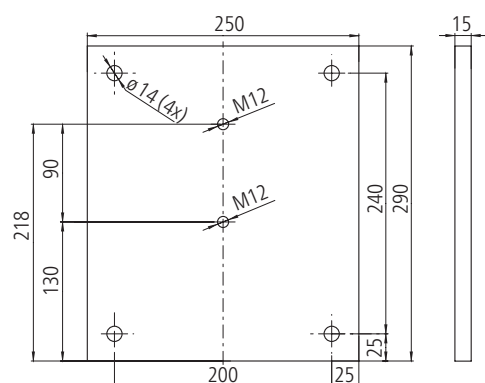
4 installation points in total

Only 1 bracket per arm



Corresponding centre bracket assembly:

15 mm base plate (BP) including 1x 85 mm wall bracket (WB85); item no. 108751



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2	2x MP250, 2x WB85	without CTB	2x 108753
2;3;1	2x MP250, 3x WB85, 1x BP	with CTB	2x 108753 + 1x 108751
3;4;1	3x MP250, 4x WB85, 1x UP	3 arms, with CTB	3x 108753 + 1x 108751

Selection of brackets

Wall mounting with mounting plate

Bracket assembly consisting of:

660 x 300 x 15 mm mounting plate with:

- 1x 85 mm wall bracket; item no. 108754
- 2x 85 mm wall bracket; item no. 108755

Notes on this bracket assembly:

1x 660 x 300 x 15 mm mounting plate (MP300)

incl. 1x 85 mm wall bracket (WB85)

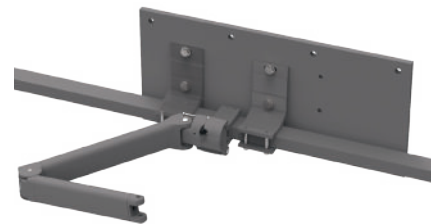
or 2x 85 mm wall bracket (WB85)

1 mounting plate per arm

4 top installation points, distance between centre lines 200 mm

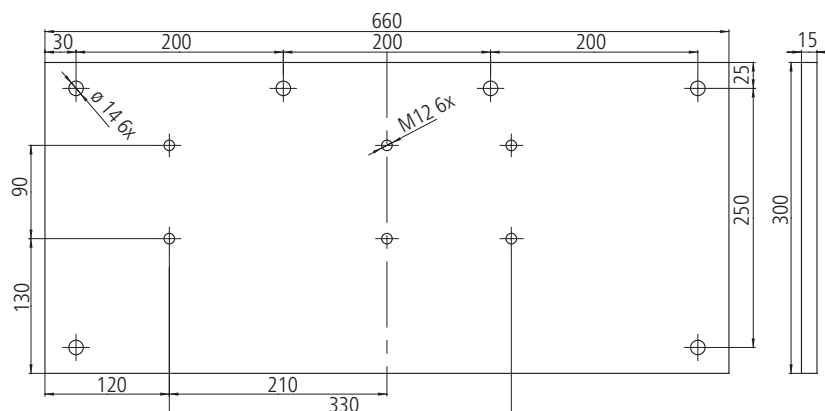
6 installation points in total

Reduced width/length ratio if using 2 brackets per arm



Corresponding centre bracket assembly:

15 mm base plate (BP) including 1x 85 mm wall bracket (WB85); item no. 108751



Information for ordering brackets

Assemblies for one bracket per arm

Number	Scope of delivery	Note	Item number for order
2;2	2x MP300, 2x WB85	without CTB	2x 108754
2;3;1	2x MP300, 3x WB85, 1x UP	with CTB	2x 108754 + 1x 108751
3;4;1	3x MP300, 4x WB85, 1x BP	3 arms, with CTB	3x 108754 + 1x 108751

Assemblies for two brackets per arm

Number	Scope of delivery	Note	Item number for order
2;4	2x MP300, 4x WB85	without CTB	2x 108755
2;5;1	2x MP300, 5x WB85, 1x BP	with CTB	2x 108755 + 1x 108751
3;7;1	3x MP300, 7x WB85, 1x BP	3 arms, with CTB	3x 108755 + 1x 108751

Selection of brackets

Wall mounting with mounting plate

Bracket assembly consisting of:

660 x 390 x 15 mm mounting plate with:

- 1x 85 mm wall bracket; item no. 108756
- 2x 85 mm wall bracket; item no. 108745

Notes on this bracket assembly:

1x 660 x 390 x 15 mm mounting plate (MP390)

incl. 1x 85 mm wall bracket (WB85)

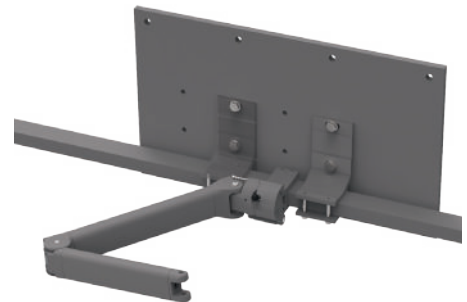
or 2x 85 mm wall bracket (WB85)

1 mounting plate per arm

4 top installation points, distance between centre lines 200 mm

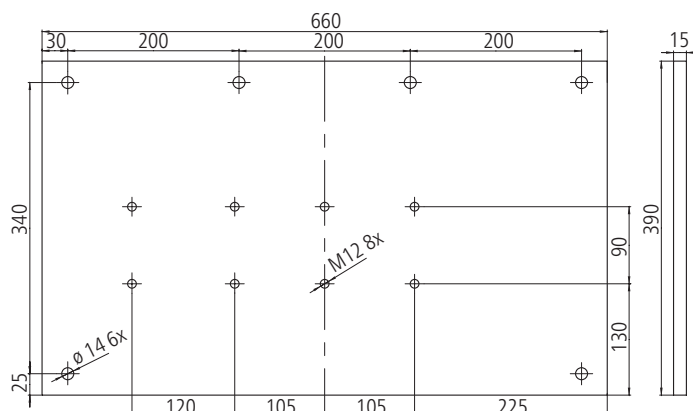
6 installation points in total

Reduced width/length ratio if using 2 brackets per arm



Corresponding centre bracket assembly:

15 mm base plate (BP) including 1x 85 mm wall bracket (WB85); item no. 108751



Information for ordering brackets

Assemblies for one bracket per arm

Number	Scope of delivery	Note	Item number for order
2;2	2x MP390, 2x WB85	without CTB	2x 108756
2;3;1	2x MP390, 3x WB85, 1x BP	with CTB	2x 108756 + 1x 108751
3;4;1	3x MP390, 4x WB85, 1x BP	3 arms, with CTB	3x 108756 + 1x 108751

Assemblies for two brackets per arm

Number	Scope of delivery	Note	Item number for order
2;4	2x MP390, 4x WB85	without CTB	2x 108745
2;5;1	2x MP390, 5x WB85, 1x BP	with CTB	2x 108745 + 1x 108751
3;7;1	3x MP390, 7x WB85, 1x BP	3 arms, with CTB	3x 108745 + 1x 108751

Selection of brackets

Wall mounting with mounting plate

Bracket assembly consisting of:

450 x 200 x 30 mm mounting plate with:

- 1x 85 mm wall bracket; item no. 124500
- 2x 85 mm wall bracket; item no. 124152

Notes on this bracket assembly:

1x 450 x 200 x 30 mm mounting plate (MP450)

incl. 1x 85 mm wall bracket (WB85)

or 2x 85 mm wall bracket (WB85)

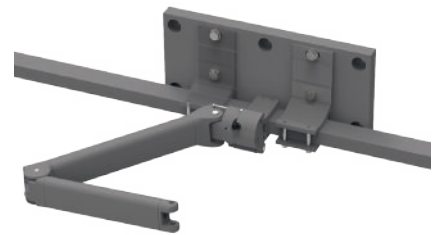
1 mounting plate per arm

3 top installation points, distance between centre lines 200 mm

6 installation points in total

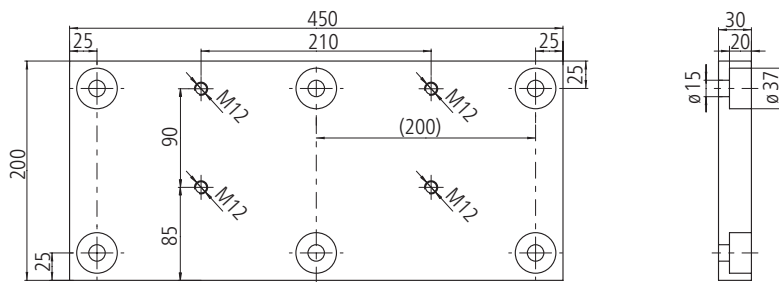
Reduced width/length ratio if using 2 brackets per arm

Cannot be used with 2 brackets per arm with 3-arm constructions!



Corresponding centre bracket assembly:

2x 15 mm base plate (BP) including 1x 85 mm wall bracket (WB85); item no. 124153



Information for ordering brackets

Assemblies for one bracket per arm

Number	Scope of delivery	Note	Item number for order
2;2	2x MP450, 2x WB85	without CTB	2x 124500
2;3;2	2x MP450, 3x WB85, 2x BP	with CTB	2x 124500 + 1x 124153
3;4;2	3x MP450, 4x WB85, 2x BP	3 arms, with CTB	3x 124500 + 1x 124153

Assemblies for two brackets per arm

Number	Scope of delivery	Note	Item number for order
2;4	2x MP450, 4x WB85	without CTB	2x 124152
2;5;2	2x MP450, 5x WB85, 2x BP	with CTB	2x 124152 + 1x 124153

Selection of brackets

Wall mounting with mounting plate

Bracket assembly consisting of:

640 x 200 x 30 mm mounting plate with:

- 1x 85 mm wall bracket; item no. 124501
- 2x 85 mm wall bracket; item no. 124411

Notes on this bracket assembly:

1x 640 x 200 x 30 mm mounting plate (MP640)

incl. 1x 85 mm wall bracket (WB85)

or 2x 85 mm wall bracket (WB85)

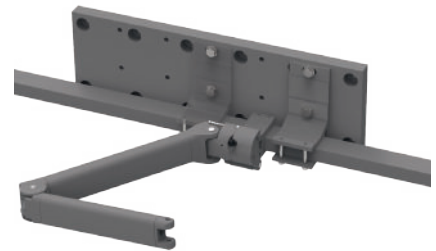
1 mounting plate per arm

6 top installation points, distance between centre lines 200 mm

12 installation points in total

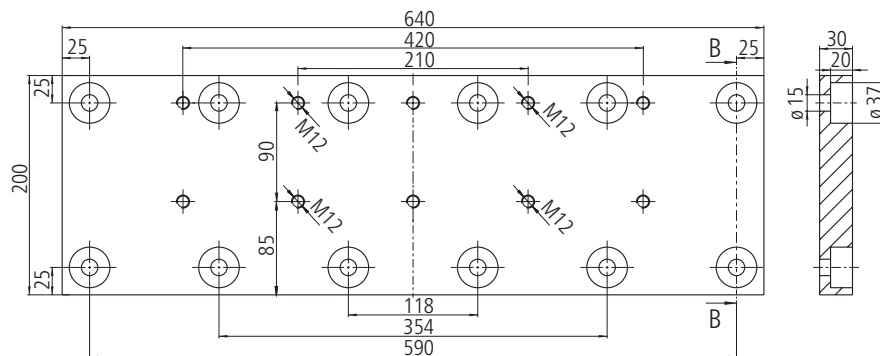
Reduced width/length ratio if using 2 brackets per arm

Cannot be used with 2 brackets per arm with 3-arm constructions!



Corresponding centre bracket assembly:

2x 15 mm base plate (BP) including 1x 85 mm wall bracket (WB85); item no. 124153



Information for ordering brackets

Assemblies for one bracket per arm

Number	Scope of delivery	Note	Item number for order
2;2	2x MP640, 2x WB85	without CTB	2x 124501
2;3;2	2x MP640, 3x WB85, 2x BP	with CTB	2x 124501 + 1x 124153
3;4;2	3x MP640, 4x WB85, 2x BP	3 arms, with CTB	3x 124501 + 1x 124153

Assemblies for two brackets per arm

Number	Scope of delivery	Note	Item number for order
2;4	2x MP640, 4x WB85	without CTB	2x 124411
2;5;2	2x MP640, 5x WB85, 2x BP	with CTB	2x 124411 + 1x 124153

Selection of brackets

Roof mounting

Bracket assembly consisting of:

85 mm ceiling bracket with:
- 85 mm wall bracket; item no. 101428

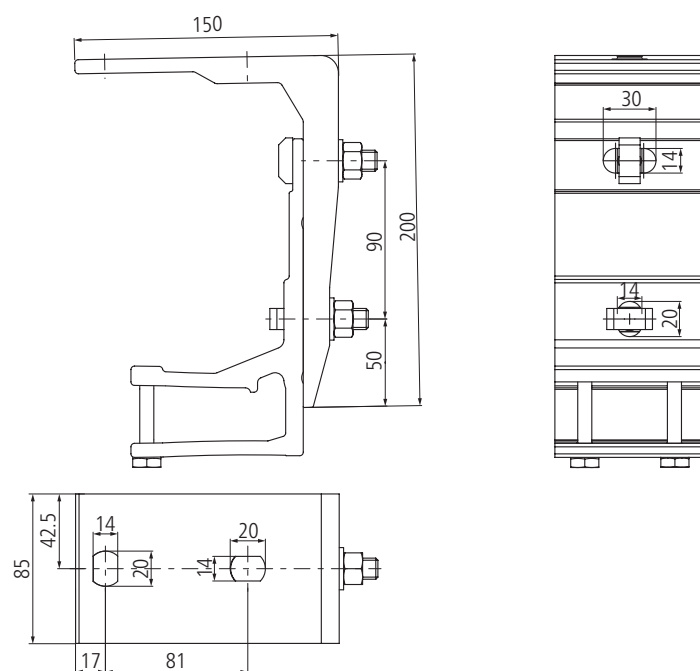
Notes on this bracket assembly:

1x 85 mm ceiling bracket (CB85)
incl. 1x 85 mm wall bracket (WB85)
1 bracket per arm
1 front installation point
2 installation points in total



Corresponding centre bracket assembly:

85 mm ceiling bracket (CB85) including 1x 85 mm wall bracket (WB85); item no. 101428



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2	2x CB85, 2x WB85	without CTB	2x 101428
3;3	3x CB85, 3x WB85	with CTB	3x 101428
4;4	4x CB85, 4x WB85	3 arms, with CTB	4x 101428

Selection of brackets

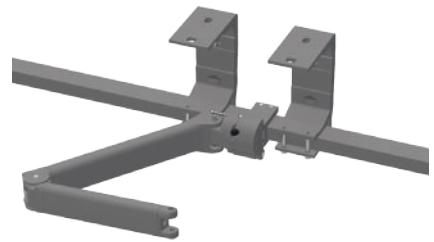
Roof mounting

Bracket assembly consisting of:

85 mm ceiling bracket with:
- 85 mm wall bracket; item no. 101428

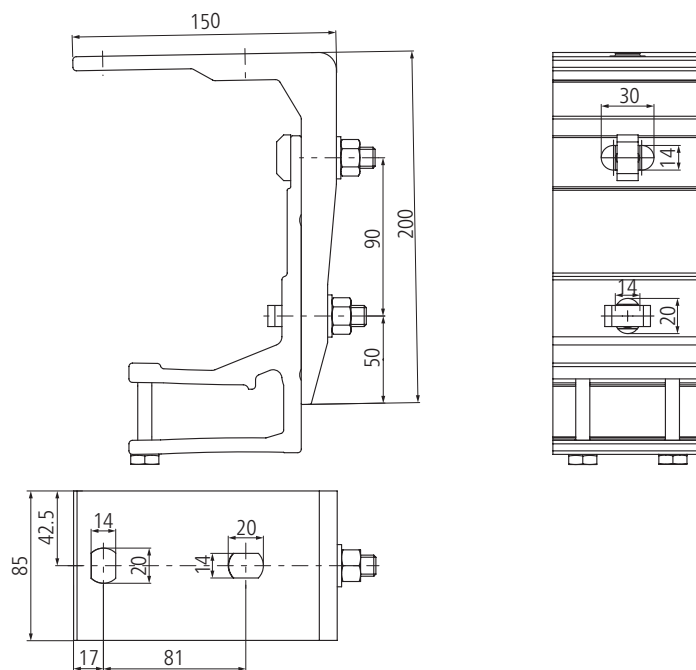
Notes on this bracket assembly:

2x 85 mm ceiling bracket (CB85)
incl. 2x 85 mm wall bracket (WB85)
2 brackets per arm
2 front installation points
4 installation points in total



Corresponding centre bracket assembly:

85 mm ceiling bracket (CB85) including 1x 85 mm wall bracket (WB85); item no. 101428



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
4;4	4x CB85, 4x WB85	without CTB	4x 101428
5;5	5x CB85, 5x WB85	with CTB	5x 101428
7;7	7x CB85, 7x WB85	3 arms, with CTB	7x 101428

Selection of brackets

Roof mounting

Bracket assembly consisting of:

295 mm ceiling bracket with:

- 260 mm wall bracket; item no. 127321

Notes on this bracket assembly:

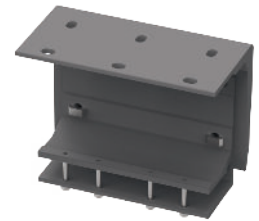
1x 295 mm ceiling bracket (CB295)

incl. 1x 260 mm wall bracket (WB260)

1 bracket per arm

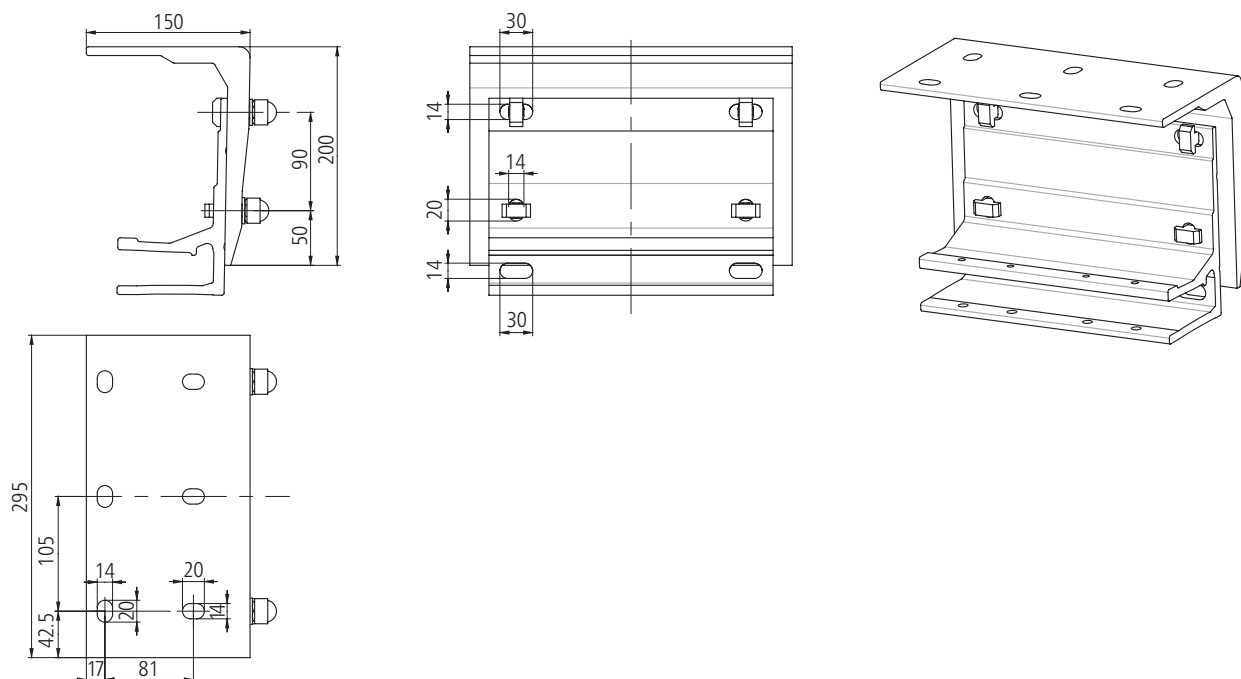
3 front installation points

6 installation points in total



Corresponding centre bracket assembly:

85 mm ceiling bracket (CB85) including 1x 85 mm wall bracket (WB85); item no. 101428



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2	2x CB295, 2x WB260	without CTB	2x 127321
2;2;1;1	2x CB295; 2x WB260; 1x CB85; 1x WB85	with CTB	2x 127321 + 1x 101428
3;3;1;1	3x CB295, 3x WB260; 1x CB85; 1x WB85	3 arms, with CTB	3x 127321 + 1x 101428

Selection of brackets

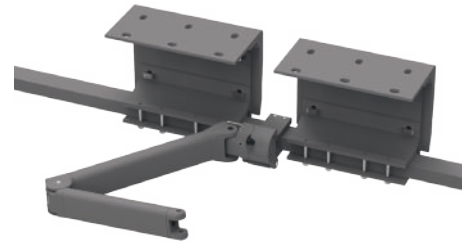
Roof mounting

Bracket assembly consisting of:

295 mm ceiling bracket with:
- 260 mm wall bracket; item no. 127321

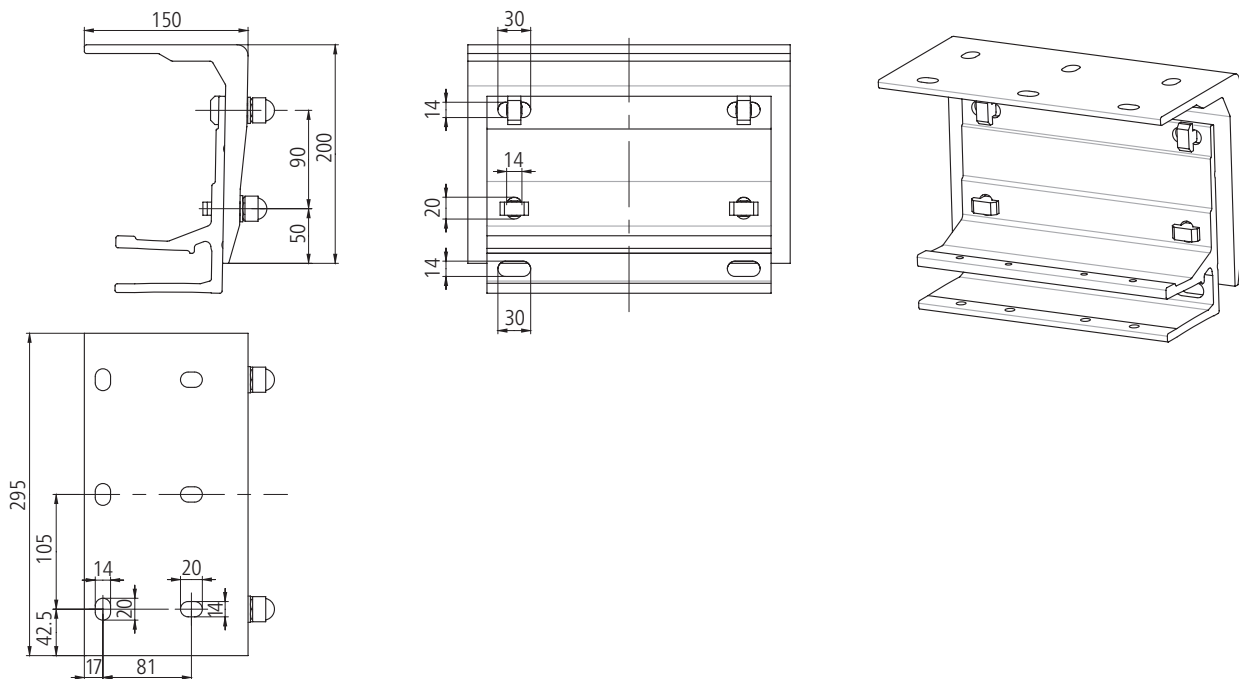
Notes on this bracket assembly:

2x 295 mm ceiling bracket (CB295)
incl. 2x 260 mm wall bracket (WB260)
2 brackets per arm
6 front installation points
12 installation points in total



Corresponding centre bracket assembly:

85 mm ceiling bracket (CB85) including 1x 85 mm wall bracket (WB85); item no. 101428



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
4;4	4x CB295, 4x WB260	without CTB	4x 127321
4;4;1;1	4x CB295; 4x WB260, 1x CB85; 1x WB85	with CTB	4x 127321 + 1x 101428
6;6;1;1	6x CB295; 6x WB260, 1x CB85; 1x WB85	3 arms, with CTB	6x 127321 + 1x 101428

Selection of brackets

Roof mounting

Bracket assembly consisting of:

295 mm ceiling bracket with:
- 295 mm wall bracket; item no. 127320

Notes on this bracket assembly:

1x 295 mm ceiling bracket (CB295)
incl. 1x 295 mm wall bracket (WB295)

1 bracket per arm

1 front installation point

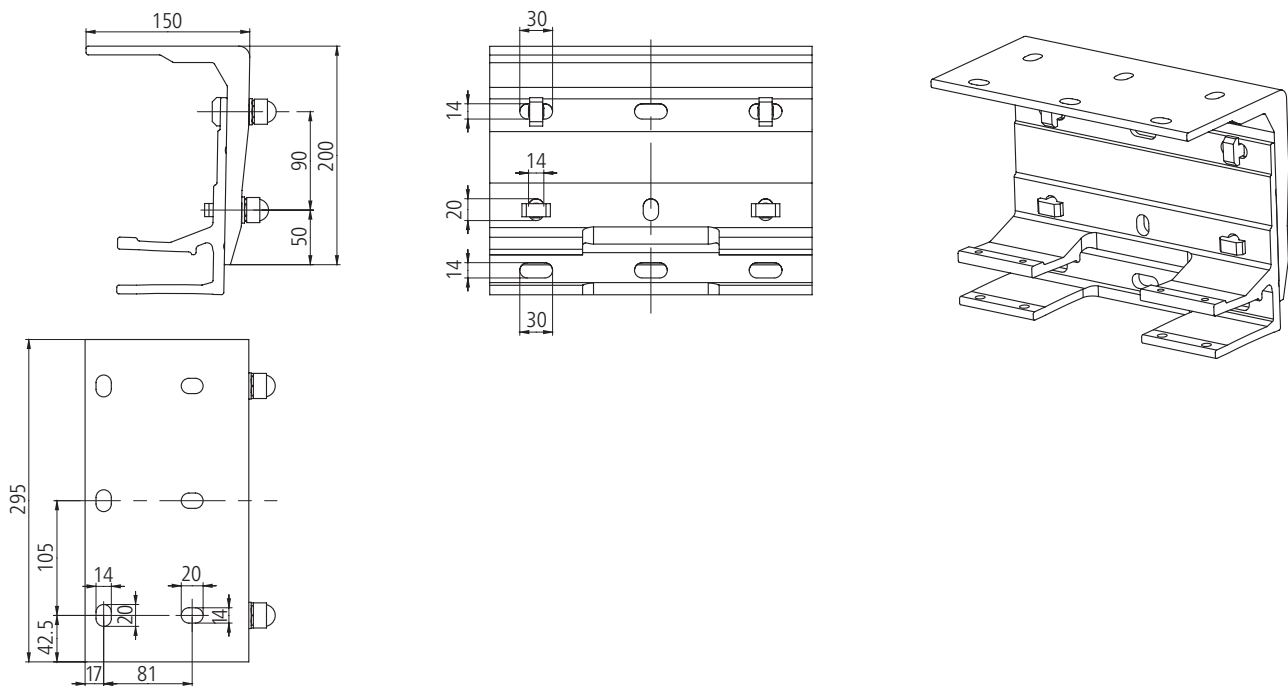
2 installation points in total

Cannot be used with three-arm constructions!



Corresponding centre bracket assembly:

85 mm ceiling bracket (CB85) including 1x 85 mm wall bracket (WB85); item no. 101428



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2	2x CB295, 2x WB295	without CTB	2x 127320
2;2;1;1	2x CB295; 2x WB295; 1x CB85; 1x WB85	with CTB	2x 127320 + 1x 101428
2;2;3;3	2x CB295, 2x WB295; 3x CB85; 3x WB85	3 arms, with CTB	2x 127320 + 3x 101428

Selection of brackets

Roof mounting

Bracket assembly consisting of:

Compact ceiling bracket, item no. 101432

Notes on this bracket assembly:

1x compact ceiling bracket (CCB)

1 bracket per arm

1 front installation point

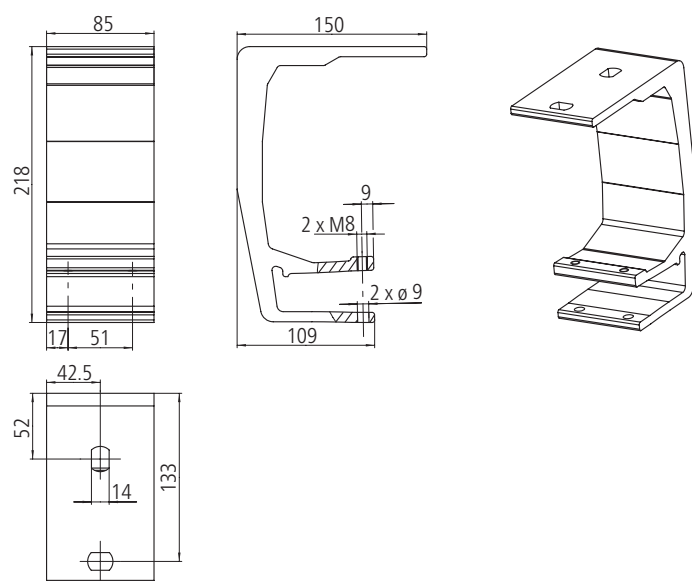
2 installation points in total

Only for Topas II without roof



Corresponding centre bracket assembly:

Compact ceiling bracket (CCB), item no. 101432



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2	2x CCB	without CTB	2x 101432
3	3x CCB	with CTB	3x 101432
4	4x CCB	3 arms, with CTB	4x 101432

Selection of brackets

Roof mounting

Bracket assembly consisting of:

Compact ceiling bracket, item no. 101432

Notes on this bracket assembly:

2x compact ceiling bracket (CCB)

2 brackets per arm

2 front installation points

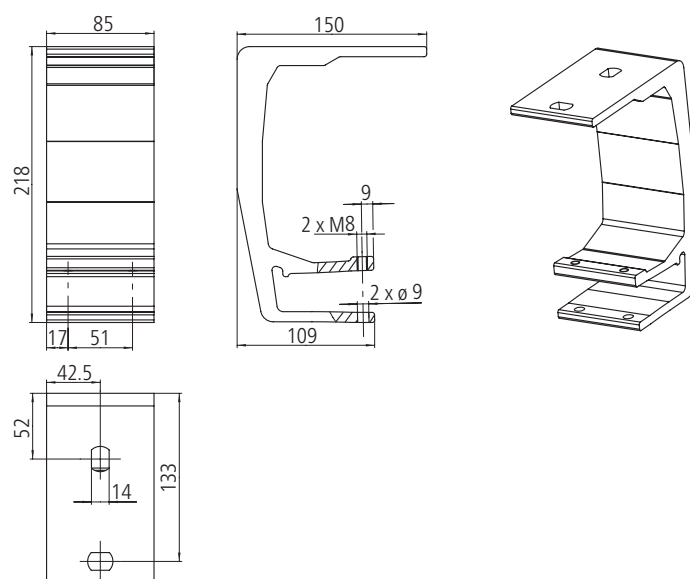
4 installation points in total

Only for Topas II without roof



Corresponding centre bracket assembly:

Compact ceiling bracket (CCB), item no. 101432



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
4	4x CCB	without CTB	4x 101432
5	5x CCB	with CTB	5x 101432
7	7x CCB	3 arms, with CTB	7x 101432

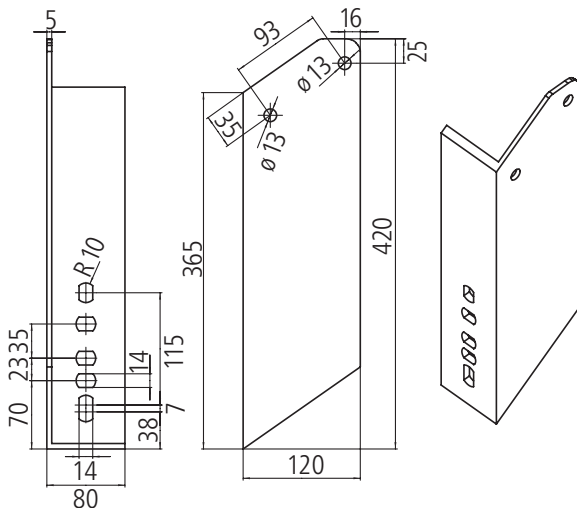
Rafter mounting

- 85 mm wall bracket; item no. 111545

One left and right version each



Rafter bracket (RB) including 1x 85 mm wall bracket (WB85); item no. 111545



Number	Scope of delivery	Note	Item number for order
2;2	2x RB, 2x WB85	without CTB	2x 111545
3;3	3x RB, 3x WB85	with CTB	3x 111545
4;4	4x RB, 4x WB85	3 arms, with CTB	4x 111545

Selection of brackets

Rafter mounting

Bracket assembly consisting of:

Rafter bracket with:

- 85 mm wall bracket; item no. 111545

Notes on this bracket assembly:

2x rafter bracket (RB)

incl. 2x 85 mm wall bracket (WB85)

2 brackets per arm

2 front installation points

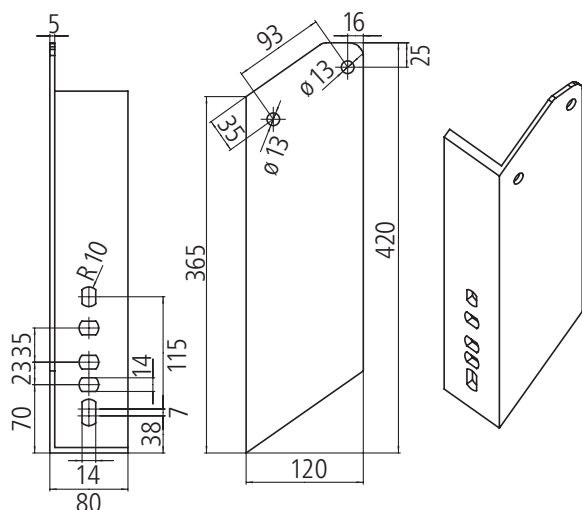
4 installation points in total

One left and right version each



Corresponding centre bracket assembly:

Rafter bracket (RB) including 1x 85 mm wall bracket (WB85); item no. 111545



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
4;4	4x RB, 4x WB85	without CTB	4x 111545
5;5	5x RB, 5x WB85	with CTB	5x 111545
7;7	7x RB, 7x WB85	3 arms, with CTB	7x 111545

Selection of brackets

Rafter mounting

Bracket assembly consisting of:

Rafter bracket and mounting plate with:
- 85 mm wall bracket; item no. 111546

Notes on this bracket assembly:

1x rafter bracket (RB) and mounting plate (MP)
incl. 1x 85 mm wall bracket (WB85)

1 bracket per arm

1 front installation point

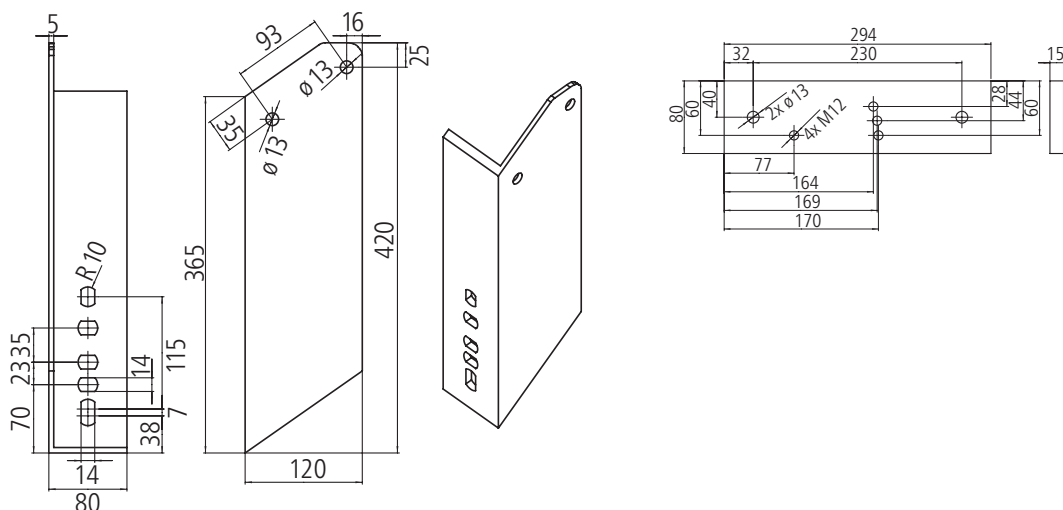
2 installation points in total

One left and right version each



Corresponding centre bracket assembly:

Rafter bracket (RB) and mounting plate (MP) including 1x 85 mm wall bracket (WB85); item no. 111546



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2;2	2x RB, 2x WB85, 2x MP	without CTB	2x 111546
3;3;3	3x RB, 3x WB85, 3x MP	with CTB	3x 111546
4;4;4	4x RB, 4x WB85, 4x MP	3 arms, with CTB	4x 111546

Selection of brackets

Rafter mounting

Bracket assembly consisting of:

Rafter bracket and mounting plate with:
- 85 mm wall bracket; item no. 111546

Notes on this bracket assembly:

2x rafter bracket and mounting plate (RB; MP)

incl. 2x 85 mm wall bracket (WB85)

2 brackets per arm

2 front installation points

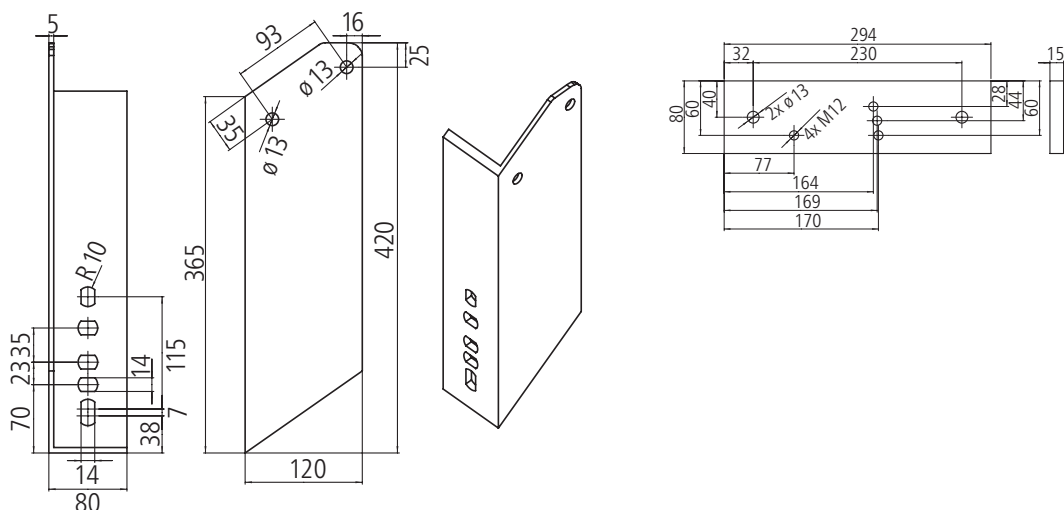
4 installation points in total

One left and right version each



Corresponding centre bracket assembly:

Rafter bracket (RB) and mounting plate (MP) including 1x 85 mm wall bracket (WB85); item no. 111546



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
4;4;4	4x RB, 4x WB85, 4x MP	without CTB	4x 111546
5;5;5	5x RB, 5x WB85, 5x MP	with CTB	5x 111546
7;7;7	7x RB, 7x WB85, 7x MP	3 arms, with CTB	7x 111546

01 Square/carrier bar awnings

Extraction forces and transverse forces

Kubata	32
I/K 2000	47
N 2000	62
Semina	77
Topas II without VarioShade Valance (all alternatives)	92
Topas II with VarioShade Valance (all alternatives)	108
Topas II MiniMax	124
Topas II Niche	140



Yellow area means limiting size

Extraction forces and transverse forces

Kubata – wall mounting

Type of mount: **1x 85 mm wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	2	3
Total number of installation points:	4	6

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	1.817	2.663	3.693				without CTB
3000	2.108	3.087	4.273	5.726			
3500	2.398	3.512	4.853	6.482			
4000	2.689	3.936	5.432	7.239			
4500	2.980	4.361	6.012	7.995			
5000	3.271	4.786	6.592				with CTB
5500	3.562	5.210	7.172				
6000	3.853	5.635	7.752				
6500	4.144	6.059	8.332				
7000	4.434	6.484	9.871				

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	145	149	155				without CTB
3000	163	167	173	182			
3500	181	186	192	200			
4000	199	204	210	219			
4500	217	222	229	237			
5000	158	161	166				with CTB
5500	170	174	178				
6000	182	186	190				
6500	194	198	203				
7000	206	210	215				

Extraction forces and transverse forces

Kubata – wall mounting

Type of mounting: **2x 85 mm wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	4	5
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	908	1.331	1.846				without CTB
3000	1.054	1.544	2.136	2.863			
3500	1.199	1.756	2.426	3.241	4.088		
4000	1.345	1.968	2.716	3.619	4.565	6.375	
4500	1.490	2.180	3.006	3.998	5.043	7.047	
5000	1.636	2.393	3.296	4.376	6.161	7.720	with CTB
5500	1.781	2.605	3.586	4.754	6.704	8.393	
6000	1.926	2.817	3.876	5.709	7.248	9.065	
6500	2.072	3.030	4.166	6.137	7.791	9.738	
7000	2.217	3.242	4.935	6.565			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	74	77	79				without CTB
3000	83	86	89	93			
3500	92	95	98	102	105		
4000	101	104	107	111	114	119	
4500	110	113	116	121	123	128	
5000	96	98	101	105	107	111	with CTB
5500	103	106	109	112	114	118	
6000	111	113	116	120	122	126	
6500	118	120	123	127	129	134	
7000	125	128	131	135			

Extraction forces and transverse forces

Kubata – wall mounting

Type of mounting: **1x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	908	1.331	1.846				without CTB
3000	1.054	1.544	2.136	2.863			
3500	1.199	1.756	2.426	3.241			
4000	1.345	1.968	2.716	3.619			
4500	1.490	2.180	3.006	3.998			
5000	1.636	2.393	3.296				with CTB
5500	1.781	2.605	3.586				
6000	1.926	2.817	3.876				
6500	2.072	3.030	4.166				
7000	2.217	3.242	4.935				

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	76	79	81				without CTB
3000	85	88	91	95			
3500	94	97	100	104			
4000	103	106	109	113			
4500	112	115	118	123			
5000	98	100	103				with CTB
5500	105	107	110				
6000	112	115	117				
6500	119	122	125				
7000	127	129	132				

Extraction forces and transverse forces

Kubata – wall mounting

Type of mounting: **2x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	4	4;1
Total number of installation points:	16	18

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	454	666	923				without CTB
3000	527	772	1.068	1.431			
3500	600	878	1.213	1.621	2.044		
4000	672	984	1.358	1.810	2.283	3.187	
4500	745	1.090	1.503	1.999	2.521	3.524	
5000	818	1.196	1.648	2.188	3.080	3.860	with CTB
5500	890	1.303	1.793	2.377	3.352	4.196	
6000	963	1.409	1.938	2.855	3.624	4.533	
6500	1.036	1.515	2.083	3.069	3.896	4.869	
7000	1.109	1.621	2.468	3.282			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	41	42	44				without CTB
3000	46	47	48	50			
3500	50	51	53	55	56		
4000	55	56	57	60	61	63	
4500	59	60	62	64	66	68	
5000	57	58	60	62	63	65	with CTB
5500	61	62	64	66	67	69	
6000	65	66	68	70	71	73	
6500	69	70	72	74	75	78	
7000	73	74	76	78			

Extraction forces and transverse forces

Kubata – wall mounting

Type of mount: **1x 295 mm wall bracket (WB295) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	606	888	1.231				without CTB
3000	703	1.029	1.424	1.909			
3500	799	1.171	1.618	2.161	2.725		
4000	896	1.312	1.811	2.413	3.044	4.250	
4500	993	1.454	2.004	2.665	3.362	4.698	
5000	1.090	1.595	2.197	2.917	4.107	5.147	with CTB
5500	1.187	1.737	2.391	3.169	4.469	5.595	
6000	1.284	1.878	2.584	3.806	4.832	6.044	
6500	1.381	2.020	2.777	4.091	5.194	6.492	
7000	1.478	2.161	3.290	4.377			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	50	52	54				without CTB
3000	56	58	60	63			
3500	62	64	66	69	71		
4000	68	70	72	75	77	80	
4500	74	76	78	81	83	86	
5000	69	71	73	76	77	80	with CTB
5500	75	76	78	81	82	85	
6000	80	81	83	86	88	91	
6500	85	87	89	91	93	96	
7000	90	92	94	97			

Extraction forces and transverse forces

Kubata – wall mounting with mounting plate

Type of mount: **1x 250x290x15 mm mounting plate (MP250) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	345	504	698				without CTB
3000	400	584	808	1.081			
3500	455	665	917	1.224			
4000	510	745	1.027	1.367			
4500	565	826	1.137	1.510			
5000	621	906	1.246				with CTB
5500	676	986	1.356				
6000	731	1.067	1.465				
6500	786	1.147	1.575				
7000	841	1.227	1.866				

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	79	82	85				without CTB
3000	88	91	94	98			
3500	97	100	103	107			
4000	106	109	112	117			
4500	115	118	121	126			
5000	101	103	106				with CTB
5500	108	111	113				
6000	115	118	121				
6500	123	125	128				
7000	130	132	135				

Extraction forces and transverse forces

Kubata – wall mounting with mounting plate

Type of mount: **1x 660x300x15 mm mounting plate (MP300) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
	2;4	2;5;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	165	241	335				without CTB
3000	191	280	387	519			
3500	218	319	440	587	740		
4000	244	357	492	656	827	1.154	
4500	271	396	545	724	913	1.275	
5000	297	434	598	793	1.116	1.397	with CTB
5500	324	473	650	861	1.214	1.519	
6000	350	511	703	1.035	1.313	1.641	
6500	377	550	755	1.112	1.411	1.763	
7000	403	589	895	1.190			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	62	63	65				without CTB
3000	68	70	72	74			
3500	74	76	78	81	82		
4000	80	82	84	87	88	91	
4500	86	88	90	93	95	98	
5000	80	81	83	86	87	90	with CTB
5500	85	87	89	91	93	96	
6000	90	92	94	97	98	101	
6500	95	97	99	102	104	106	
7000	100	102	104	107			

Extraction forces and transverse forces

Kubata – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
	2;4	2;5;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	121	177	246				without CTB
3000	141	206	285	381			
3500	160	234	323	432	544		
4000	180	263	362	482	608	848	
4500	199	291	401	532	671	938	
5000	219	319	439	583	820	1.027	with CTB
5500	238	348	478	633	893	1.117	
6000	257	376	517	761	965	1.206	
6500	277	404	555	818	1.037	1.296	
7000	296	433	658	875			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	67	68	70				without CTB
3000	73	74	76	79			
3500	79	80	82	85	87		
4000	85	86	89	92	93	96	
4500	91	93	95	98	99	103	
5000	84	86	88	90	92	94	with CTB
5500	89	91	93	95	97	100	
6000	94	96	98	101	102	105	
6500	99	101	103	106	108	111	
7000	105	106	109	111			

Extraction forces and transverse forces

Kubata – wall mounting with mounting plate

Type of mount: **1x 450x200x30 mm mounting plate (MP450) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2
	2;4	2;5;2
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	372	542	750				without CTB
3000	431	629	868	1.161			
3500	491	716	986	1.315	1.656		
4000	550	802	1.104	1.468	1.849	2.579	
4500	610	889	1.222	1.622	2.042	2.851	
5000	669	975	1.340	1.775	2.496	3.124	with CTB
5500	729	1.062	1.457	1.928	2.716	3.396	
6000	788	1.148	1.575	2.317	2.936	3.668	
6500	848	1.235	1.693	2.490	3.156	3.940	
7000	907	1.321	2.007	2.664			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	60	62	64				without CTB
3000	66	68	70	73			
3500	72	74	76	79	80		
4000	78	80	82	85	87	90	
4500	84	86	88	91	93	96	
5000	79	80	82	85	86	89	with CTB
5500	84	86	88	90	92	95	
6000	89	91	93	95	97	100	
6500	94	96	98	101	102	105	
7000	99	101	103	106			

Extraction forces and transverse forces

Kubata – wall mounting with mounting plate

Type of mount: **1x 640x200x30 mm mounting plate (MP640) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2
	2;4	2;5;2
Total number of installation points:	24	26

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	186	271	375				without CTB
3000	215	314	434	580			
3500	245	358	493	657	828		
4000	275	401	552	734	924	1.289	
4500	305	444	611	811	1.021	1.425	
5000	334	487	670	887	1.248	1.562	with CTB
5500	364	531	728	964	1.358	1.698	
6000	394	574	787	1.158	1.468	1.834	
6500	424	617	846	1.245	1.578	1.970	
7000	453	660	1.003	1.332			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	32	33	34				without CTB
3000	35	36	37	38			
3500	38	39	40	41	42		
4000	41	42	43	44	45	47	
4500	44	45	46	48	48	50	
5000	44	45	46	47	48	50	with CTB
5500	47	48	49	50	51	53	
6000	50	51	52	53	54	56	
6500	53	53	55	56	57	59	
7000	55	56	57	59			

Extraction forces

Kubata – roof mounting

Type of mount: **1x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3
Total number of installation points:	4	6

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	1.361	1.962	2.697				without CTB
3000	1.574	2.269	3.114	4.153			
3500	1.787	2.577	3.532	4.697			
4000	2.000	2.884	3.950	5.241			
4500	2.213	3.192	4.368	5.785			
5000	2.349	3.421	4.705				with CTB
5500	2.556	3.722	5.116				
6000	2.763	4.023	5.528				
6500	2.970	4.325	5.940				
7000	3.176	4.626	7.001				

Type of mount: **2x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5
Total number of installation points:	8	10

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	685	985	1.353				without CTB
3000	791	1.139	1.562	2.081			
3500	898	1.293	1.771	2.353	2.960		
4000	1.004	1.447	1.979	2.625	3.303	4.588	
4500	1.111	1.600	2.188	2.897	3.646	5.069	
5000	1.194	1.730	2.373	3.143	4.405	5.523	with CTB
5500	1.299	1.882	2.580	3.413	4.792	6.002	
6000	1.404	2.034	2.787	4.079	5.179	6.481	
6500	1.508	2.186	2.994	4.383	5.565	6.960	
7000	1.613	2.338	3.526	4.687			

Extraction forces and transverse forces

Kubata – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	14

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	461	661	906				without CTB
3000	532	764	1.045	1.392			
3500	603	866	1.185	1.573			
4000	674	969	1.324	1.754			
4500	745	1.071	1.463	1.935			
5000	805	1.162	1.591				with CTB
5500	875	1.264	1.729				
6000	945	1.365	1.867				
6500	1.015	1.467	2.006				
7000	1.085	1.569	2.361				

Type of mount: **2x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	4;4	4;4;1;1
Total number of installation points:	24	26

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	236	336	458				without CTB
3000	271	387	528	701			
3500	307	438	597	791	994		
4000	342	489	667	882	1.108	1.536	
4500	377	541	737	973	1.222	1.697	
5000	410	589	803	1.060	1.481	1.854	with CTB
5500	445	640	872	1.150	1.610	2.014	
6000	480	691	942	1.373	1.739	2.174	
6500	516	742	1.011	1.474	1.869	2.334	
7000	551	793	1.189	1.576			

Extraction forces and transverse forces

Kubata – roof mounting

Type of mount: **1x 295 ceiling bracket mm with 295 mm wall bracket (CB295/295) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	14

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	460	661	906				without CTB
3000	531	763	1.045	1.391			
3500	602	866	1.184	1.572	1.977		
4000	673	968	1.323	1.754	2.206	3.062	
4500	744	1.071	1.463	1.935	2.434	3.383	
5000	804	1.162	1.590	2.104	2.946	3.691	with CTB
5500	874	1.263	1.729	2.284	3.204	4.010	
6000	944	1.365	1.867	2.728	3.462	4.330	
6500	1.015	1.467	2.005	2.931	3.720	4.650	
7000	1.085	1.568	2.360	3.134			

Shear forces

Kubata – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	1.894	2.714	3.714				without CTB
3000	2.191	3.141	4.291	5.701			
3500	2.489	3.567	4.867	6.449			
4000	2.786	3.994	5.444	7.196			
4500	3.083	4.420	6.020	7.943			
5000	3.304	4.768	6.516				with CTB
5500	3.595	5.189	7.086				
6000	3.886	5.609	7.657				
6500	4.178	6.030	8.227				
7000	4.469	6.450	9.720				

Type of mount: **2x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	1.904	2.724	3.724				without CTB
3000	2.201	3.151	4.301	5.711			
3500	2.499	3.577	4.877	6.458	8.099		
4000	2.796	4.004	5.454	7.206	9.038	12.539	
4500	3.093	4.430	6.030	7.953	9.977	13.854	
5000	3.310	4.775	6.522	8.613	12.060	15.078	with CTB
5500	3.602	5.195	7.093	9.354	13.120	16.387	
6000	3.893	5.616	7.663	11.206	14.180	17.697	
6500	4.184	6.036	8.234	12.042	15.240	19.006	
7000	4.476	6.457	9.726	12.878			

When mounted on two separate rafters, the shear forces are reduced to 50%.

Shear forces

Kubata – rafter mounting

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2	3;3;3
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	860	1.194	1.602				without CTB
3000	991	1.377	1.846	2.421			
3500	1.122	1.561	2.090	2.734			
4000	1.253	1.744	2.334	3.048			
4500	1.384	1.927	2.578	3.361			
5000	1.438	2.032	2.741				with CTB
5500	1.562	2.209	2.979				
6000	1.687	2.386	3.217				
6500	1.812	2.564	3.455				
7000	1.937	2.741	4.066				

Type of mount: **2x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	4;4;4	5;5;5
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	874	1.208	1.616				without CTB
3000	1.005	1.392	1.860	2.435			
3500	1.136	1.575	2.104	2.749	3.415		
4000	1.267	1.758	2.348	3.062	3.806	5.227	
4500	1.398	1.942	2.592	3.375	4.196	5.770	
5000	1.447	2.041	2.751	3.600	4.995	6.220	with CTB
5500	1.572	2.219	2.989	3.907	5.432	6.757	
6000	1.697	2.396	3.227	4.663	5.868	7.294	
6500	1.822	2.573	3.464	5.008	6.304	7.831	
7000	1.947	2.750	4.075	5.354			

When mounted on two separate rafters, the shear forces are reduced to 50%.

Extraction forces and transverse forces

I/K 2000 – wall mounting

Type of mount: **1x 85 mm wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	2	3	4
Total number of installation points:	4	6	8

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	1.529	2.291	3.237				without CTB
3000	1.766	2.645	3.731	5.085			
3500	2.002	3.000	4.226	5.740			with CTB
4000	2.239	3.355	4.720	6.395			
4500	2.476	3.710	5.214	7.050			
5000	2.713	4.064	5.708	7.705			
5500	2.950	4.419	6.202				
6000	3.187	4.774	6.696				
6500	3.424	5.129	7.190				
7000	2.558	3.837	6.036				3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	122	127	133				without CTB
3000	137	142	148	156			
3500	152	157	163	171			with CTB
4000	167	172	178	187			
4500	122	126	130	136			
5000	132	136	140	146			
5500	145	148	153				
6000	154	158	163				
6500	164	168	173				
7000	139	143	148				3 arms

The specified transverse forces apply to the "heaviest" application: K 2000.

Extraction forces and transverse forces

I/K 2000 – wall mounting

Type of mount: **2x 85 mm wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	4	5	7
Total number of installation points:	8	10	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	764	1.145	1.618				without CTB
3000	883	1.322	1.865	2.542			
3500	1.001	1.500	2.113	2.870	3.659		with CTB
4000	1.119	1.677	2.360	3.197	4.078	5.823	
4500	1.238	1.855	2.607	3.525	4.497	6.429	
5000	1.356	2.032	2.854	3.852	5.557	7.035	
5500	1.475	2.209	3.101	4.180	6.041	7.641	
6000	1.593	2.387	3.348	5.085	6.526	8.247	3 arms
6500	1.712	2.564	3.595	5.462	7.011	8.853	
7000	1.279	1.918	3.018	4.099	5.260	6.668	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	63	65	68				without CTB
3000	70	73	76	80			
3500	78	80	83	87	73		with CTB
4000	85	88	91	95	79	83	
4500	75	77	79	83	85	89	
5000	81	83	85	89	91	95	
5500	88	90	93	97	99	103	
6000	94	96	99	103	105	109	3 arms
6500	100	102	105	109	112	116	
7000	81	83	86	90	92	96	

The specified transverse forces apply to the "heaviest" application: K 2000.

Extraction forces and transverse forces

I/K 2000 – wall mounting

Type of mount: **1x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	2	2;1	3;1
Total number of installation points:	8	10	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	764	1.145	1.618				without CTB
3000	883	1.322	1.865	2.542			
3500	1.001	1.500	2.113	2.870			with CTB
4000	1.119	1.677	2.360	3.197			
4500	1.238	1.855	2.607	3.525			
5000	1.356	2.032	2.854	3.852			
5500	1.475	2.209	3.101				
6000	1.593	2.387	3.348				
6500	1.712	2.564	3.595				
7000	1.279	1.918	3.018				3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	65	67	70				without CTB
3000	72	75	78	82			
3500	80	82	85	89			with CTB
4000	87	90	93	97			
4500	76	78	81	84			
5000	82	84	87	91			
5500	90	92	95				
6000	96	98	101				
6500	102	104	107				
7000	83	85	88				3 arms

The specified transverse forces apply to the "heaviest" application: K 2000.

Extraction forces and transverse forces

I/K 2000 – wall mounting

Type of mount: **2x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	4	4;1	6;1
Total number of installation points:	16	18	26

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	382	572	809				without CTB
3000	441	661	932	1.271			
3500	500	750	1.056	1.435	1.829		with CTB
4000	559	838	1.180	1.598	2.039	2.911	
4500	619	927	1.303	1.762	2.248	3.214	
5000	678	1.016	1.427	1.926	2.778	3.517	
5500	737	1.104	1.550	2.090	3.020	3.820	
6000	796	1.193	1.674	2.542	3.263	4.123	
6500	856	1.282	1.797	2.731	3.505	4.426	
7000	639	959	1.509	2.049	2.630	3.334	3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	35	36	38				without CTB
3000	39	40	41	44			
3500	42	44	45	47	44		with CTB
4000	46	47	49	51	47	49	
4500	45	46	47	49	50	53	
5000	48	49	51	53	54	56	
5500	52	53	55	57	58	61	
6000	56	57	58	60	62	64	
6500	59	60	62	64	65	68	
7000	47	48	50	52	53	55	3 arms

The specified transverse forces apply to the "heaviest" application: K 2000.

Extraction forces and transverse forces

I/K 2000 – wall mounting

Type of mount: **1x 295 mm wall bracket (WB295) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	509	763	1.079				without CTB
3000	588	881	1.243	1.695			
3500	667	1.000	1.408	1.913	2.439		with CTB
4000	746	1.118	1.573	2.131	2.718	3.882	
4500	825	1.236	1.738	2.350	2.998	4.286	
5000	904	1.354	1.902	2.568	3.704	4.690	
5500	983	1.473	2.067	2.786	4.027	5.094	
6000	1.062	1.591	2.232	3.390	4.351	5.498	
6500	1.141	1.709	2.396	3.641	4.674	5.902	
7000							3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	43	44	46				without CTB
3000	47	49	51	54			
3500	52	54	56	59	52		with CTB
4000	57	59	61	64	57	60	
4500	54	55	57	60	61	64	
5000	58	60	62	64	66	68	
5500	64	65	67	70	71	74	
6000	68	69	71	74	76	79	
6500	72	74	76	79	80	83	
7000							3 arms

The specified transverse forces apply to the “heaviest” application: K 2000.

Extraction forces and transverse forces

I/K 2000 – wall mounting with mounting plate

Type of mount: **1x 250x290x15 mm mounting plate (MP250) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1	3;4;1
Total number of installation points:	8	10	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	290	434	612				without CTB
3000	335	501	705	960			
3500	380	568	799	1.084			with CTB
4000	425	635	892	1.208			
4500	470	702	986	1.331			
5000	515	769	1.079	1.455			
5500	560	837	1.172				
6000	605	904	1.266				3 arms
6500	649	971	1.359				
7000	485	726	1.141				

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	68	70	73				without CTB
3000	75	78	81	85			
3500	83	85	88	93			with CTB
4000	90	93	96	100			
4500	79	82	84	88			
5000	85	87	90	94			
5500	93	95	98				
6000	99	101	104				3 arms
6500	105	107	110				
7000	86	88	91				

The specified transverse forces apply to the "heaviest" application: K 2000.

Extraction forces and transverse forces

I/K 2000 – wall mounting with mounting plate

Type of mount: **1x 660x300x15 mm mounting plate (MP300) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1	3;4;1
	2;4	2;5;1	3;7;1
Total number of installation points:	12	14	20

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	139	208	293				without CTB
3000	160	240	338	461			
3500	182	272	383	520	663		with CTB
4000	204	305	428	579	739	1.054	
4500	225	337	473	639	814	1.164	
5000	247	369	518	698	1.007	1.274	
5500	268	401	563	758	1.094	1.383	
6000	290	434	607	922	1.182	1.493	
6500	311	466	652	990	1.270	1.603	
7000	233	348	548	743	953	1.207	3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	55	56	58				without CTB
3000	60	61	63	66			
3500	64	66	68	71	63		with CTB
4000	69	71	73	76	68	70	
4500	65	66	68	71	72	75	
5000	69	70	72	75	77	79	
5500	74	76	78	81	82	85	
6000	79	80	82	85	87	90	
6500	83	85	87	89	91	94	
7000	69	70	72	75	76	79	3 arms

The specified transverse forces apply to the "heaviest" application: K 2000.

Extraction forces and transverse forces

I/K 2000 – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1	3;4;1
	2;4	2;5;1	3;7;1
Total number of installation points:	12	14	20

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	102	153	216				without CTB
3000	118	176	249	339			
3500	134	200	282	382	487		with CTB
4000	150	224	315	426	543	775	
4500	165	248	348	470	599	856	
5000	181	271	381	513	740	936	
5500	197	295	413	557	805	1.017	
6000	213	319	446	678	869	1.098	3 arms
6500	229	342	479	728	934	1.178	
7000	171	256	402	546	700	887	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	58	60	62				without CTB
3000	63	65	67	70			
3500	68	70	72	75	66		with CTB
4000	73	75	77	80	71	74	
4500	68	69	71	74	75	78	
5000	72	74	76	78	80	83	
5500	78	79	81	84	85	88	
6000	82	83	86	88	90	93	3 arms
6500	86	88	90	93	94	97	
7000	72	74	76	78	80	83	

The specified transverse forces apply to the "heaviest" application: K 2000.

Extraction forces and transverse forces

I/K 2000 – wall mounting with mounting plate

Type of mount: **1x 450x200x30 mm mounting plate (MP450) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2	3;4;2
	2;4	2;5;2	–
Total number of installation points:	12	14	20

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	313	467	658				without CTB
3000	362	540	759	1.032			
3500	410	612	859	1.165	1.483		with CTB
4000	459	684	960	1.298	1.653	2.357	
4500	507	757	1.060	1.431	1.822	2.603	
5000	556	829	1.161	1.564	2.252	2.848	
5500	604	901	1.261	1.697	2.449	3.093	
6000	653	974	1.362	2.065	2.645	3.338	3 arms
6500	701	1.046	1.462	2.218	2.842	3.584	
7000	524	783	1.228				

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	53	54	56				without CTB
3000	58	59	61	64			
3500	63	64	66	69	62		with CTB
4000	68	69	71	74	67	69	
4500	64	65	67	70	71	74	
5000	68	69	71	74	76	78	
5500	73	75	77	80	81	84	
6000	78	79	81	84	86	88	3 arms
6500	82	83	86	88	90	93	
7000	67	69	71				

The specified transverse forces apply to the “heaviest” application: K 2000.

Extraction forces and transverse forces

I/K 2000 – wall mounting with mounting plate

Type of mount: **1x 640x200x30 mm mounting plate (MP640) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2	3;3;2
	2;4	2;5;2	–
Total number of installation points:	24	26	38

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	156	233	329				without CTB
3000	181	270	379	516			
3500	205	306	429	582	741		with CTB
4000	229	342	480	649	826	1.178	
4500	253	378	530	715	911	1.301	
5000	278	414	580	782	1.126	1.424	
5500	302	450	630	848	1.224	1.546	
6000	326	487	681	1.032	1.322	1.669	3 arms
6500	350	523	731	1.109	1.421	1.792	
7000	262	391	614				

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	28	29	30				without CTB
3000	31	32	33	34			
3500	33	34	35	37	35		with CTB
4000	36	37	38	39	38	39	
4500	36	37	38	39	40	42	
5000	38	39	40	42	42	44	
5500	41	42	43	45	46	47	
6000	44	44	46	47	48	49	3 arms
6500	46	47	48	49	50	52	
7000	37	38	39				

The specified transverse forces apply to the “heaviest” application: K 2000.

Extraction forces

I/K 2000 – roof mounting

Type of mount: **1x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3	4;4
Total number of installation points:	4	6	8

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	1.142	1.682	2.355				without CTB
3000	1.315	1.937	2.710	3.676			
3500	1.488	2.193	3.064	4.144			with CTB
4000	1.661	2.449	3.418	4.613			
4500	1.774	2.643	3.709	5.016			
5000	1.942	2.894	4.059	5.480			
5500	2.113	3.148	4.411				
6000	2.280	3.398	4.760				3 arms
6500	2.448	3.649	5.110				
7000	1.846	2.747	4.286				

The specified extraction forces apply to the “heaviest” application: K 2000.

Type of mount: **2x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5	7;7
Total number of installation points:	8	10	14

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	576	845	1.182				without CTB
3000	662	973	1.359	1.842			
3500	748	1.101	1.536	2.077	2.625		with CTB
4000	835	1.229	1.714	2.311	2.923	4.159	
4500	903	1.338	1.872	2.526	3.220	4.590	
5000	988	1.465	2.047	2.758	3.962	5.020	
5500	1.075	1.593	2.225	2.993	4.307	5.452	
6000	1.160	1.719	2.401	3.622	4.651	5.882	3 arms
6500	1.245	1.845	2.576	3.889	4.994	6.312	
7000	937	1.388	2.158	2.927	3.756	4.764	

The specified extraction forces apply to the “heaviest” application: K 2000.

Extraction forces and transverse forces

I/K 2000 – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1	3;3;1;1
Total number of installation points:	12	14	20

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	388	568	792				without CTB
3000	446	653	910	1.232			
3500	503	738	1.029	1.389			with CTB
4000	561	823	1.147	1.545			
4500	610	900	1.256	1.692			
5000	667	984	1.373	1.847			
5500	725	1.070	1.492				
6000	782	1.155	1.609				
6500	838	1.239	1.726				
7000	631	932	1.445				3 arms

The specified extraction forces apply to the “heaviest” application: K 2000.

Type of mount: **2x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	4;4	4;4;1;1	6;6;1;1
Total number of installation points:	24	26	38

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	199	289	401				without CTB
3000	228	332	460	621			
3500	257	374	519	699	886		with CTB
4000	285	417	578	778	985	1.398	
4500	312	457	635	853	1.085	1.541	
5000	340	499	694	931	1.332	1.685	
5500	370	542	753	1.010	1.448	1.829	
6000	398	585	812	1.219	1.563	1.973	
6500	427	627	871	1.309	1.677	2.117	
7000	322	473	729	986	1.262	1.598	3 arms

The specified extraction forces apply to the “heaviest” application: K 2000.

Extraction forces and transverse forces

I/K 2000 – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 295 mm wall bracket (CB295/295) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	14

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	388	567	792				without CTB
3000	445	652	910	1.232			
3500	503	738	1.028	1.388	1.757		with CTB
4000	560	823	1.146	1.544	1.956	2.780	
4500	609	899	1.255	1.691	2.154	3.068	
5000	666	984	1.373	1.847	2.649	3.355	
5500	724	1.070	1.491	2.003	2.880	3.643	
6000	781	1.154	1.609	2.423	3.109	3.930	
6500	838	1.239	1.726	2.601	3.338	4.217	
7000							3 arms

The specified extraction forces apply to the “heaviest” application: K 2000.

Shear forces

I/K 2000 – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3	4;4
Total number of installation points:	4	6	8

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	1.596	2.335	3.254				without CTB
3000	1.838	2.691	3.744	5.059			
3500	2.080	3.047	4.235	5.705			with CTB
4000	2.322	3.403	4.726	6.351			
4500	2.505	3.697	5.153	6.931			
5000	2.742	4.048	5.638	7.572			
5500	2.982	4.402	6.127				
6000	3.219	4.753	6.612				
6500	3.457	5.104	7.098				
7000	2.601	3.838	5.962				3 arms

The specified extraction forces apply to the “heaviest” application: K 2000.

Type of mount: **2x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5	7;7
Total number of installation points:	4	6	8

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	1.605	2.344	3.263				without CTB
3000	1.847	2.700	3.754	5.068			
3500	2.090	3.056	4.245	5.715	7.183		with CTB
4000	2.332	3.412	4.735	6.361	8.000	11.374	
4500	2.511	3.704	5.159	6.937	8.817	12.553	
5000	2.749	4.055	5.645	7.578	10.869	13.731	
5500	2.989	4.409	6.133	8.222	11.817	14.913	
6000	3.226	4.760	6.619	9.975	12.761	16.091	
6500	3.463	5.111	7.105	10.711	13.706	17.270	
7000	2.608	3.845	5.969	8.062	10.309	13.033	3 arms

The specified extraction forces apply to the “heaviest” application: K 2000.

When mounted on two separate rafters, the shear forces are reduced to 50%.

Shear forces

I/K 2000 – rafter mounting

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2	3;3;3	4;4;4
Total number of installation points:	4	6	8

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	726	1.027	1.403				without CTB
3000	833	1.180	1.610	2.146			
3500	939	1.333	1.817	2.417			with CTB
4000	1.046	1.486	2.025	2.687			
4500	1.093	1.578	2.169	2.891			
5000	1.195	1.726	2.371	3.156			
5500	1.300	1.876	2.576				
6000	1.402	2.024	2.779				
6500	1.503	2.172	2.981				
7000	1.143	1.645	2.507				3 arms

The specified extraction forces apply to the “heaviest” application: K 2000.

Type of mount: **2x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	4;4;4	5;5;5	7;7;7
Total number of installation points:	4	6	8

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	740	1.042	1.417				without CTB
3000	847	1.195	1.624	2.161			
3500	954	1.347	1.832	2.431	2.990		with CTB
4000	1.060	1.500	2.039	2.701	3.326	4.694	
4500	1.103	1.587	2.178	2.901	3.663	5.177	
5000	1.205	1.735	2.381	3.166	4.499	5.660	
5500	1.309	1.886	2.586	3.434	4.890	6.146	
6000	1.411	2.034	2.788	4.149	5.278	6.628	
6500	1.513	2.182	2.991	4.453	5.666	7.111	
7000	1.153	1.656	2.518	3.368	4.279	5.385	3 arms

The specified extraction forces apply to the “heaviest” application: K 2000.

When mounted on two separate rafters, the shear forces are reduced to 50%.

Extraction forces and transverse forces

N 2000 – wall mounting

Type of mount: **1x 85 mm niche wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	2	3
Total number of installation points:	4	6

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.780	2.617	3.640			without CTB
3000	2.068	3.038	4.215	5.661		
3500	2.356	3.459	4.790	6.412		
4000	2.643	3.879	5.365	7.162		
4500	2.931	4.300	5.940	7.913		with CTB
5000	3.219	4.721	6.515	8.664		
5500	3.507	5.141	7.090			
6000	3.795	5.562	7.665			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	104	108	114			without CTB
3000	115	120	126	134		
3500	126	131	137	146		
4000	137	143	149	158		
4500	100	104	108	114		with CTB
5000	108	111	116	122		
5500	118	122	127			
6000	126	130	135			

Extraction forces and transverse forces

N 2000 – wall mounting

Type of mount: **2x 85 mm niche wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	4	5
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	890	1.308	1.820			without CTB
3000	1.034	1.519	2.107	2.830		
3500	1.178	1.729	2.395	3.206	4.049	
4000	1.321	1.939	2.682	3.581	4.523	
4500	1.465	2.150	2.970	3.956	4.997	with CTB
5000	1.609	2.360	3.257	4.332	6.115	
5500	1.753	2.570	3.545	4.707	6.655	
6000	1.897	2.781	3.832	5.662	7.195	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	53	56	59			without CTB
3000	59	61	64	69		
3500	65	67	70	75	77	
4000	70	73	76	81	83	
4500	62	64	66	70	72	with CTB
5000	66	68	71	75	77	
5500	72	75	77	81	83	
6000	77	79	82	86	88	

Extraction forces and transverse forces

N 2000 – wall mounting

Type of mount: **1x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	890	1.308	1.820			without CTB
3000	1.034	1.519	2.107	2.830		
3500	1.178	1.729	2.395	3.206		
4000	1.321	1.939	2.682	3.581		
4500	1.465	2.150	2.970	3.956		with CTB
5000	1.609	2.360	3.257	4.332		
5500	1.753	2.570	3.545			
6000	1.897	2.781	3.832			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	55	58	61			without CTB
3000	61	63	66	71		
3500	67	69	72	77		
4000	72	75	78	82		
4500	63	65	68	71		with CTB
5000	68	70	73	76		
5500	74	76	79			
6000	79	81	84			

Extraction forces and transverse forces

N 2000 – wall mounting

Type of mount: **2x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	4	4;1
Total number of installation points:	16	18

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	445	654	910			without CTB
3000	517	759	1.053	1.415		
3500	589	864	1.197	1.603	2.024	
4000	660	969	1.341	1.790	2.261	
4500	732	1.075	1.485	1.978	2.498	with CTB
5000	804	1.180	1.628	2.166	3.057	
5500	876	1.285	1.772	2.353	3.327	
6000	948	1.390	1.916	2.831	3.597	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	30	32	33			without CTB
3000	33	34	36	38		
3500	36	37	39	41	42	
4000	39	40	42	44	45	
4500	37	39	40	42	43	with CTB
5000	40	41	43	45	46	
5500	44	45	46	48	50	
6000	46	47	49	51	52	

Extraction forces and transverse forces

N 2000 – wall mounting

Type of mount: **1x 295 mm wall bracket (WB295) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	593	872	1.213			without CTB
3000	689	1.012	1.405	1.887		
3500	785	1.153	1.596	2.137	2.699	
4000	881	1.293	1.788	2.387	3.015	
4500	977	1.433	1.980	2.637	3.331	with CTB
5000	1.073	1.573	2.171	2.888	4.076	
5500	1.169	1.713	2.363	3.138	4.436	
6000	1.265	1.854	2.555	3.775	4.797	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	36	38	40			without CTB
3000	40	42	44	46		
3500	44	45	48	50	52	
4000	48	49	51	54	56	
4500	45	46	48	50	52	with CTB
5000	48	49	51	54	55	
5500	52	54	56	59	60	
6000	56	57	59	62	64	

Extraction forces and transverse forces

N 2000 – wall mounting with mounting plate

Type of mount: **1x 250x290x15 mm mounting plate (MP250) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	337	495	688			without CTB
3000	392	575	797	1.069		
3500	447	654	905	1.210		
4000	501	734	1.014	1.352		
4500	556	814	1.123	1.494		with CTB
5000	610	893	1.231	1.636		
5500	665	973	1.340			
6000	720	1.053	1.449			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	59	61	64			without CTB
3000	64	67	70	74		
3500	70	72	75	80		
4000	76	78	81	86		
4500	66	68	71	75		with CTB
5000	71	73	76	79		
5500	77	80	82			
6000	82	84	87			

Extraction forces and transverse forces

N 2000 – wall mounting with mounting plate

Type of mount: **1x 660x300x15 mm mounting plate (MP300) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
	2;4	2;5;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	162	237	330			without CTB
3000	188	276	382	513		
3500	214	314	434	581	733	
4000	240	352	486	649	819	
4500	267	390	539	717	905	with CTB
5000	293	429	591	785	1.107	
5500	319	467	643	853	1.205	
6000	345	505	695	1.026	1.303	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	48	50	52			without CTB
3000	52	54	56	59		
3500	56	58	60	62	64	
4000	60	61	64	66	68	
4500	55	57	59	61	63	with CTB
5000	59	60	62	65	66	
5500	63	65	67	69	71	
6000	66	68	70	73	74	

Extraction forces and transverse forces

N 2000 – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
	2;4	2;5;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	119	174	242			without CTB
3000	138	203	281	377		
3500	157	231	319	427	539	
4000	177	259	358	477	602	
4500	196	287	396	527	665	with CTB
5000	215	315	434	577	814	
5500	234	343	473	627	886	
6000	254	371	511	754	958	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	52	54	56			without CTB
3000	56	57	60	62		
3500	60	61	63	66	68	
4000	63	65	67	70	72	
4500	59	60	62	65	66	with CTB
5000	62	63	65	68	69	
5500	66	68	70	73	74	
6000	70	71	73	76	78	

Extraction forces and transverse forces

N 2000 – wall mounting with mounting plate

Type of mount: **1x 450x200x30 mm mounting plate (MP450) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2
	2;4	2;5;2
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	364	533	740			without CTB
3000	423	619	857	1.148		
3500	482	705	974	1.301	1.640	
4000	541	791	1.090	1.453	1.832	
4500	600	876	1.207	1.605	2.024	with CTB
5000	659	962	1.324	1.757	2.477	
5500	718	1.048	1.441	1.910	2.696	
6000	777	1.133	1.558	2.298	2.915	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	47	48	50			without CTB
3000	50	52	54	57		
3500	54	56	58	61	62	
4000	58	60	62	65	66	
4500	54	56	58	60	62	with CTB
5000	58	59	61	64	65	
5500	62	64	66	68	70	
6000	65	67	69	72	73	

Extraction forces and transverse forces

N 2000 – wall mounting with mounting plate

Type of mount: **1x 640x200x30 mm mounting plate (MP640) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2
	2;4	2;5;2
Total number of installation points:	24	26

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	182	266	370			without CTB
3000	211	309	428	574		
3500	241	352	487	650	820	
4000	270	395	545	726	916	
4500	300	438	603	802	1.012	with CTB
5000	329	481	662	878	1.238	
5500	359	524	720	955	1.348	
6000	388	566	779	1.149	1.457	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	25	26	27			without CTB
3000	27	28	29	30		
3500	29	30	31	32	33	
4000	31	32	33	34	35	
4500	31	32	33	34	35	with CTB
5000	33	34	35	36	37	
5500	35	36	37	39	39	
6000	37	38	39	40	41	

Extraction forces

N 2000 – roof mounting

Type of mount: **1x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3
Total number of installation points:	4	6

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.296	1.890	2.619			without CTB
3000	1.500	2.188	3.027	4.060		
3500	1.704	2.486	3.434	4.593		
4000	1.908	2.784	3.842	5.126		
4500	2.064	3.032	4.197	5.604		with CTB
5000	2.264	3.326	4.601	6.133		
5500	2.467	3.624	5.008			
6000	2.668	3.918	5.412			

Type of mount: **2x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5
Total number of installation points:	8	10

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	652	949	1.314			without CTB
3000	754	1.098	1.518	2.034		
3500	856	1.247	1.722	2.301	2.905	
4000	958	1.396	1.925	2.567	3.243	
4500	1.046	1.530	2.114	2.817	3.562	with CTB
5000	1.147	1.678	2.316	3.083	4.343	
5500	1.250	1.828	2.521	3.350	4.727	
6000	1.351	1.976	2.724	4.012	5.108	

Extraction forces and transverse forces

N 2000 – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	14

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	439	637	880			without CTB
3000	507	736	1.016	1.360		
3500	575	836	1.152	1.538		
4000	643	935	1.288	1.716		
4500	704	1.027	1.416	1.885		with CTB
5000	772	1.126	1.551	2.063		
5500	840	1.226	1.688			
6000	908	1.325	1.824			

Type of mount: **2x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	4;4	4;4;1;1
Total number of installation points:	24	26

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	225	324	445			without CTB
3000	259	373	513	685		
3500	293	423	581	774	976	
4000	327	473	649	863	1.088	
4500	359	520	715	950	1.198	with CTB
5000	393	570	783	1.038	1.459	
5500	427	620	851	1.128	1.587	
6000	461	670	919	1.349	1.714	

Extraction forces and transverse forces

N 2000 – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 295 mm wall bracket (CB295/295) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	14

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	439	637	880			without CTB
3000	507	736	1.016	1.360		
3500	575	835	1.151	1.538	1.941	
4000	643	935	1.287	1.715	2.165	
4500	704	1.027	1.416	1.885	2.382	with CTB
5000	771	1.126	1.551	2.062	2.903	
5500	840	1.226	1.688	2.241	3.159	
6000	908	1.325	1.823	2.682	3.413	

Shear forces

N 2000 – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.818	2.631	3.623			without CTB
3000	2.106	3.047	4.188	5.592		
3500	2.394	3.463	4.754	6.327		
4000	2.682	3.879	5.319	7.062		
4500	2.921	4.245	5.832	7.742		with CTB
5000	3.205	4.657	6.393	8.473		
5500	3.492	5.072	6.957			
6000	3.776	5.484	7.519			

Type of mount: **2x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.828	2.640	3.633			without CTB
3000	2.116	3.056	4.198	5.601		
3500	2.404	3.472	4.763	6.337	7.970	
4000	2.691	3.888	5.329	7.072	8.896	
4500	2.927	4.251	5.838	7.748	9.761	with CTB
5000	3.211	4.663	6.399	8.479	11.922	
5500	3.498	5.079	6.964	9.214	12.975	
6000	3.782	5.491	7.525	11.060	14.024	

When mounted on two separate rafters, the shear forces are reduced to 50%.

Shear forces

N 2000 – rafter mounting

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2	3;3;3
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	805	1.136	1.541			without CTB
3000	928	1.311	1.776	2.349		
3500	1.051	1.486	2.012	2.653		
4000	1.174	1.661	2.247	2.957		
4500	1.249	1.786	2.430	3.206		with CTB
5000	1.368	1.957	2.662	3.507		
5500	1.490	2.132	2.897			
6000	1.610	2.303	3.128			

Type of mount: **2x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	4;4;4	5;5;5
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	819	1.150	1.555			without CTB
3000	942	1.325	1.791	2.363		
3500	1.065	1.500	2.026	2.667	3.331	
4000	1.188	1.675	2.261	2.971	3.712	
4500	1.258	1.796	2.440	3.216	4.032	with CTB
5000	1.378	1.967	2.671	3.516	4.910	
5500	1.500	2.141	2.906	3.820	5.343	
6000	1.619	2.312	3.138	4.571	5.772	

When mounted on two separate rafters, the shear forces are reduced to 50%.

Extraction forces and transverse forces

Semina – wall mounting

Type of mount: **1x 85 mm wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	2	3	4
Total number of installation points:	4	6	8

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.682	2.491	3.485			without CTB
3000	1.940	2.873	4.012	5.420		
3500	2.198	3.254	4.540	6.114		
4000	2.456	3.636	5.067	6.809		
4500	2.713	4.018	5.594	7.503		with CTB
5000	2.971	4.399	6.121	8.197		
5500	3.229	4.781	6.648			
6000	3.486	5.163	7.175			
6500	3.744	5.544	7.703			3 arms
7000	2.786	4.132	6.401			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	116	121	126			without CTB
3000	129	134	140	148		
3500	142	147	153	162		
4000	156	161	168	177		
4500	114	118	122	128		with CTB
5000	123	127	131	137		
5500	132	135	140			
6000	141	144	149			
6500	149	153	158			3 arms
7000	125	129	134			

Extraction forces and transverse forces

Semina – wall mounting

Type of mount: **2x 85 mm wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	4	5	7
Total number of installation points:	8	10	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	841	1.245	1.742			without CTB
3000	970	1.436	2.006	2.710		
3500	1.099	1.627	2.270	3.057	3.877	
4000	1.228	1.818	2.533	3.404	4.318	
4500	1.356	2.009	2.797	3.751	4.759	with CTB
5000	1.485	2.199	3.060	4.098	5.844	
5500	1.614	2.390	3.324	4.445	6.352	
6000	1.743	2.581	3.587	5.371	6.859	
6500	1.872	2.772	3.851	5.768	7.367	3 arms
7000	1.393	2.066	3.200	4.316	5.513	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	60	62	65			without CTB
3000	66	69	72	76		
3500	73	75	78	83	85	
4000	80	82	86	90	93	
4500	70	72	75	78	80	with CTB
5000	75	77	80	84	86	
5500	80	83	85	89	91	
6000	86	88	91	95	97	
6500	91	93	96	100	103	3 arms
7000	73	75	78	82	84	

Extraction forces and transverse forces

Semina – wall mounting

Type of mount: **1x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	2	2;1	3;1
Total number of installation points:	8	10	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	841	1.245	1.742			without CTB
3000	970	1.436	2.006	2.710		
3500	1.099	1.627	2.270	3.057		
4000	1.228	1.818	2.533	3.404		
4500	1.356	2.009	2.797	3.751		with CTB
5000	1.485	2.199	3.060	4.098		
5500	1.614	2.390	3.324			
6000	1.743	2.581	3.587			
6500	1.872	2.772	3.851			
7000	1.393	2.066	3.200			3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	62	64	67			without CTB
3000	68	71	74	78		
3500	75	77	80	85		
4000	82	84	88	92		
4500	71	74	76	80		with CTB
5000	77	79	82	85		
5500	82	84	87			
6000	87	90	92			
6500	93	95	98			
7000	75	77	80			3 arms

Extraction forces and transverse forces

Semina – wall mounting

Type of mount: **2x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	4	4;1	6;1
Total number of installation points:	16	18	26

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	420	622	871			without CTB
3000	485	718	1.003	1.355		
3500	549	813	1.135	1.528	1.938	
4000	614	909	1.266	1.702	2.159	
4500	678	1.004	1.398	1.875	2.379	with CTB
5000	742	1.099	1.530	2.049	2.922	
5500	807	1.195	1.662	2.222	3.176	
6000	871	1.290	1.793	2.685	3.429	
6500	936	1.386	1.925	2.884	3.683	3 arms
7000	696	1.033	1.600	2.158	2.756	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	34	35	36			without CTB
3000	37	38	40	42		
3500	40	41	43	45	46	
4000	44	45	46	49	50	
4500	42	43	45	47	48	with CTB
5000	45	46	48	50	51	
5500	48	49	51	53	54	
6000	51	52	54	56	57	
6500	54	55	57	59	60	3 arms
7000	43	44	45	48	49	

Extraction forces and transverse forces

Semina – wall mounting

Type of mount: **1x 295 mm wall bracket (WB295) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	560	830	1.161			without CTB
3000	646	957	1.337	1.806		
3500	732	1.084	1.513	2.038	2.584	
4000	818	1.212	1.689	2.269	2.879	
4500	904	1.339	1.864	2.501	3.173	with CTB
5000	990	1.466	2.040	2.732	3.896	
5500	1.076	1.593	2.216	2.963	4.234	
6000	1.162	1.721	2.391	3.581	4.573	
6500	1.248	1.848	2.567	3.845	4.911	
7000						3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	40	42	44			without CTB
3000	45	46	48	51		
3500	49	51	53	56	57	
4000	54	56	58	61	62	
4500	50	52	54	56	58	with CTB
5000	54	56	58	60	62	
5500	58	60	62	64	66	
6000	62	63	65	68	70	
6500	66	67	69	72	74	
7000						3 arms

Extraction forces and transverse forces

Semina – wall mounting with mounting plate

Type of mount: **1x 250x290x15 mm mounting plate (MP250) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1	3;4;1
Total number of installation points:	8	10	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	319	471	659			without CTB
3000	368	544	758	1.023		
3500	417	616	858	1.155		
4000	466	688	958	1.286		
4500	514	760	1.057	1.417		with CTB
5000	563	833	1.157	1.548		
5500	612	905	1.257			
6000	661	977	1.356			
6500	710	1.049	1.456			
7000	528	782	1.210			3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	65	67	70			without CTB
3000	71	74	77	81		
3500	78	81	84	88		
4000	85	88	91	95		
4500	75	77	79	83		with CTB
5000	80	82	85	88		
5500	85	87	90			
6000	90	93	96			
6500	96	98	101			
7000	78	80	83			3 arms

Extraction forces and transverse forces

Semina – wall mounting with mounting plate

Type of mount: **1x 660x300x15 mm mounting plate (MP300) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1	3;4;1
	2;4	2;5;1	3;7;1
Total number of installation points:	12	14	20

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	153	226	316			without CTB
3000	176	261	364	491		
3500	200	295	412	554	702	
4000	223	330	459	617	782	
4500	247	365	507	680	862	with CTB
5000	270	399	555	743	1.058	
5500	294	434	603	806	1.150	
6000	317	469	651	974	1.242	
6500	341	503	699	1.046	1.334	
7000	253	375	581	782	998	3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	53	54	56			without CTB
3000	57	59	61	63		
3500	61	63	65	68	70	
4000	66	68	70	73	74	
4500	61	63	65	67	69	with CTB
5000	65	67	69	71	73	
5500	69	70	72	75	77	
6000	73	74	76	79	81	
6500	76	78	80	83	85	
7000	63	64	66	69	71	3 arms

Extraction forces and transverse forces

Semina – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1	3;4;1
	2;4	2;5;1	3;7;1
Total number of installation points:	12	14	20

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	112	166	232			without CTB
3000	130	192	267	361		
3500	147	217	302	407	516	
4000	164	243	338	453	575	
4500	181	268	373	500	634	with CTB
5000	199	294	408	546	778	
5500	216	319	443	592	846	
6000	233	345	478	716	913	
6500	250	370	514	769	981	
7000	186	276	427	575	734	3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	56	58	60			without CTB
3000	61	62	64	67		
3500	65	67	69	72	73	
4000	70	71	74	77	78	
4500	65	66	68	70	72	with CTB
5000	68	70	72	74	76	
5500	72	74	76	78	80	
6000	76	78	80	82	84	
6500	80	81	83	86	88	
7000	66	68	70	73	74	3 arms

Extraction forces and transverse forces

Semina – wall mounting with mounting plate

Type of mount: **1x 450x200x30 mm mounting plate (MP450) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2	3;4;2
	2;4	2;5;2	–
Total number of installation points:	12	14	20

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	344	508	709			without CTB
3000	397	586	816	1.100		
3500	450	663	923	1.241	1.571	
4000	503	741	1.030	1.381	1.750	
4500	555	819	1.137	1.522	1.928	with CTB
5000	608	897	1.244	1.663	2.368	
5500	661	975	1.352	1.804	2.574	
6000	714	1.053	1.459	2.180	2.780	
6500	766	1.130	1.566	2.341	2.985	
7000	570	842	1.302			3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	51	52	54			without CTB
3000	55	57	59	62		
3500	60	61	63	66	68	
4000	64	66	68	71	73	
4500	60	62	64	66	68	with CTB
5000	64	66	68	70	72	
5500	68	69	71	74	76	
6000	72	73	75	78	80	
6500	75	77	79	82	84	
7000	62	63	65			3 arms

Extraction forces and transverse forces

Semina – wall mounting with mounting plate

Type of mount: **1x 640x200x30 mm mounting plate (MP640) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2	3;4;2
	2;4	2;5;2	–
Total number of installation points:	24	26	38

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	172	254	354			without CTB
3000	198	293	408	550		
3500	225	331	461	620	785	
4000	251	370	515	690	875	
4500	277	409	568	761	964	with CTB
5000	304	448	622	831	1.184	
5500	330	487	676	902	1.287	
6000	357	526	729	1.090	1.390	
6500	383	565	783	1.170	1.492	
7000	285	421	651			3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	27	28	29			without CTB
3000	30	30	31	33		
3500	32	33	34	35	36	
4000	34	35	36	37	38	
4500	34	35	36	37	38	with CTB
5000	36	37	38	40	40	
5500	38	39	40	42	43	
6000	40	41	42	44	45	
6500	42	43	44	46	47	
7000	34	35	36			3 arms

Extraction forces

Semina – roof mounting

Type of mount: **1x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3	4;4
Total number of installation points:	4	6	8

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.243	1.817	2.526			without CTB
3000	1.429	2.090	2.902	3.908		
3500	1.615	2.364	3.279	4.404		
4000	1.801	2.638	3.656	4.900		
4500	1.932	2.854	3.973	5.333		with CTB
5000	2.113	3.122	4.345	5.824		
5500	2.294	3.391	4.717			
6000	2.475	3.660	5.089			
6500	2.657	3.929	5.461			
7000	1.991	2.942	4.534			3 arms

Type of mount: **2x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5	7;7
Total number of installation points:	8	10	14

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	626	913	1.267			without CTB
3000	719	1.050	1.455	1.959		
3500	812	1.186	1.644	2.206	2.794	
4000	905	1.323	1.832	2.454	3.110	
4500	981	1.443	2.003	2.683	3.405	with CTB
5000	1.073	1.578	2.190	2.930	4.164	
5500	1.164	1.713	2.376	3.176	4.524	
6000	1.256	1.848	2.563	3.820	4.883	
6500	1.347	1.984	2.750	4.100	5.242	
7000	1.008	1.485	2.281	3.075	3.931	3 arms

Extraction forces and transverse forces

Semina – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1	3;3;1;1
Total number of installation points:	12	14	20

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	422	613	849			without CTB
3000	484	704	975	1.310		
3500	545	795	1.100	1.475		
4000	608	886	1.226	1.641		
4500	661	969	1.343	1.797		with CTB
5000	723	1.060	1.467	1.961		
5500	784	1.150	1.592			
6000	845	1.240	1.717			
6500	906	1.331	1.842			3 arms
7000	679	996	1.527			

Type of mount: **2x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	4;4	4;4;1;1	6;6;1;1
Total number of installation points:	24	26	38

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	216	312	430			without CTB
3000	247	357	492	660		
3500	278	403	555	743	939	
4000	309	448	618	825	1.044	
4500	338	491	678	905	1.146	with CTB
5000	368	537	741	988	1.399	
5500	399	582	803	1.070	1.519	
6000	430	628	866	1.285	1.640	
6500	461	673	929	1.379	1.760	3 arms
7000	346	504	770	1.035	1.320	

Extraction forces and transverse forces

Semina – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 295 mm wall bracket (CB295/295) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	14

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	421	612	849			without CTB
3000	483	703	974	1.309		
3500	545	795	1.100	1.475	1.866	
4000	607	886	1.225	1.640	2.077	
4500	661	969	1.342	1.796	2.278	with CTB
5000	722	1.059	1.467	1.961	2.784	
5500	784	1.150	1.592	2.125	3.024	
6000	845	1.240	1.717	2.555	3.263	
6500	906	1.330	1.842	2.742	3.503	
7000						3 arms

Shear forces

Semina – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3	4;4
Total number of installation points:	4	6	8

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.740	2.525	3.490			without CTB
3000	2.001	2.906	4.012	5.379		
3500	2.262	3.286	4.533	6.062		
4000	2.524	3.668	5.055	6.746		
4500	2.729	3.992	5.518	7.367		with CTB
5000	2.986	4.368	6.035	8.045		
5500	3.242	4.744	6.551			
6000	3.499	5.121	7.068			
6500	3.756	5.497	7.585			
7000	2.810	4.113	6.307			3 arms

Type of mount: **2x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5	7;7
Total number of installation points:	4	6	8

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.750	2.535	3.500			without CTB
3000	2.011	2.915	4.022	5.389		
3500	2.272	3.296	4.543	6.072	7.661	
4000	2.533	3.678	5.065	6.756	8.527	
4500	2.736	3.998	5.524	7.373	9.325	with CTB
5000	2.992	4.375	6.041	8.051	11.426	
5500	3.249	4.751	6.558	8.730	12.414	
6000	3.505	5.127	7.075	10.524	13.402	
6500	3.762	5.504	7.592	11.297	14.390	
7000	2.817	4.121	6.314	8.475	10.791	3 arms

When mounted on two separate rafters, the shear forces are reduced to 50%.

Shear forces

Semina – rafter mounting

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2	3;3;3	4;4;4
Total number of installation points:	4	6	8

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	781	1.101	1.494			without CTB
3000	894	1.263	1.713	2.271		
3500	1.007	1.424	1.932	2.556		
4000	1.121	1.587	2.152	2.841		
4500	1.179	1.692	2.312	3.063		with CTB
5000	1.288	1.850	2.526	3.343		
5500	1.397	2.007	2.740			
6000	1.506	2.165	2.955			
6500	1.615	2.322	3.169			3 arms
7000	1.219	1.748	2.638			

Type of mount: **2x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	4;4;4	5;5;5	7;7;7
Total number of installation points:	4	6	8

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	795	1.115	1.509			without CTB
3000	908	1.277	1.728	2.286		
3500	1.022	1.439	1.947	2.570	3.215	
4000	1.136	1.601	2.166	2.855	3.574	
4500	1.189	1.702	2.321	3.072	3.864	with CTB
5000	1.298	1.859	2.536	3.352	4.719	
5500	1.407	2.016	2.750	3.632	5.124	
6000	1.516	2.174	2.964	4.363	5.529	
6500	1.625	2.331	3.179	4.681	5.934	3 arms
7000	1.229	1.759	2.649	3.527	4.465	

When mounted on two separate rafters, the shear forces are reduced to 50%.

Extraction forces and transverse forces

Topas II without VarioShade Valance (all alternatives) – wall mounting

Type of mount: **1x 85 mm wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	2	3
Total number of installation points:	4	6

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	1.387	2.109	3.016				without CTB
3.000	1.598	2.430	3.469	4.776			
3.500	1.809	2.751	3.922	5.382			
4.000	2.020	3.072	4.375	5.988			with CTB
4.500	2.231	3.394	4.827	6.594			
5.000	2.442	3.715	5.280	7.200			
5.500	2.653	4.036	5.733				
6.000	2.864	4.357	6.186				
6.500	3.075	4.678	6.639				
7.000	3.286	4.999	8.054				3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	109	114	120				without CTB
3.000	121	126	132	141			
3.500	133	138	145	153			
4.000	145	150	157	166			with CTB
4.500	106	110	114	120			
5.000	114	118	122	128			
5.500	125	129	134				
6.000	133	137	142				
6.500	141	145	150				
7.000	149	153	158				3 arms

The specified forces apply to the “heaviest” application: Topas II with roof.

Extraction forces and transverse forces

Topas II without VarioShade Valance (all alternatives) – wall mounting

Type of mount: **2x 85 mm wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	4	5	7
Total number of installation points:	8	10	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	693	1.054	1.508				without CTB
3.000	799	1.215	1.734	2.388			
3.500	904	1.375	1.961	2.691	3.453		
4.000	1.010	1.536	2.187	2.994	3.844	5.561	with CTB
4.500	1.115	1.697	2.413	3.297	4.234	6.135	
5.000	1.221	1.857	2.640	3.600	5.267	6.709	
5.500	1.326	2.018	2.866	3.903	5.724	7.282	
6.000	1.432	2.178	3.093	4.785	6.181	7.856	
6.500	1.537	2.339	3.319	5.137	6.637	8.430	3 arms
7.000	1.643	2.499	4.027	5.490	4.992	6.364	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	56	59	62				without CTB
3.000	62	65	68	72			
3.500	68	71	74	78	81		
4.000	74	77	80	85	87	74	with CTB
4.500	65	67	70	73	75	79	
5.000	70	72	75	78	81	84	
5.500	77	79	82	85	88	92	
6.000	81	84	87	90	93	97	
6.500	86	89	92	95	98	102	3 arms
7.000	91	93	96	100	82	86	

The specified forces apply to the “heaviest” application: Topas II with roof.

Extraction forces and transverse forces

Topas II without VarioShade Valance (all alternatives) – wall mounting

Type of mount: **1x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	693	1.054	1.508				without CTB
3.000	799	1.215	1.734	2.388			
3.500	904	1.375	1.961	2.691			
4.000	1.010	1.536	2.187	2.994			with CTB
4.500	1.115	1.697	2.413	3.297			
5.000	1.221	1.857	2.640	3.600			
5.500	1.326	2.018	2.866				
6.000	1.432	2.178	3.093				
6.500	1.537	2.339	3.319				
7.000	1.643	2.499	4.027				3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	58	61	64				without CTB
3.000	64	67	70	74			
3.500	70	73	76	80			
4.000	76	79	82	86			with CTB
4.500	67	69	71	75			
5.000	71	74	76	80			
5.500	78	80	83				
6.000	83	85	88				
6.500	88	90	93				
7.000	93	95	98				3 arms

The specified forces apply to the “heaviest” application: Topas II with roof.

Extraction forces and transverse forces

Topas II without VarioShade Valance (all alternatives) – wall mounting

Type of mount: **2x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	4	4;1	6;1
Total number of installation points:	16	18	26

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	346	527	754				without CTB
3.000	399	607	867	1.194			
3.500	452	687	980	1.345	1.726		
4.000	505	768	1.093	1.497	1.922	2.780	with CTB
4.500	557	848	1.206	1.648	2.117	3.067	
5.000	610	928	1.320	1.800	2.633	3.354	
5.500	663	1.009	1.433	1.951	2.862	3.641	
6.000	716	1.089	1.546	2.392	3.090	3.928	
6.500	768	1.169	1.659	2.568	3.318	4.215	3 arms
7.000	821	1.249	2.013	2.745	2.496	3.182	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	32	33	34				without CTB
3.000	35	36	38	40			
3.500	38	39	41	43	44		
4.000	41	42	44	46	47	44	with CTB
4.500	39	41	42	44	45	47	
5.000	42	43	45	47	48	50	
5.500	46	47	49	51	52	54	
6.000	48	50	51	53	55	57	
6.500	51	52	54	56	58	60	3 arms
7.000	54	55	57	59	48	50	

The specified forces apply to the “heaviest” application: Topas II with roof.

Extraction forces and transverse forces

Topas II without VarioShade Valance (all alternatives) – wall mounting

Type of mount: **1x 295 mm wall bracket (WB295) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	462	703	1.005				without CTB
3.000	532	810	1.156	1.592			
3.500	603	917	1.307	1.794	2.302		
4.000	673	1.024	1.458	1.996	2.562	3.707	with CTB
4.500	743	1.131	1.609	2.198	2.822	4.090	
5.000	814	1.238	1.760	2.400	3.511	4.472	
5.500	884	1.345	1.911	2.602	3.816	4.855	
6.000	954	1.452	2.062	3.190	4.120	5.237	
6.500	1.025	1.559	2.213	3.425	4.425	5.620	3 arms
7.000	1.095	1.666	2.684	3.660			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	38	40	42				without CTB
3.000	42	44	46	49			
3.500	46	48	50	53	54		
4.000	50	52	54	57	59	53	with CTB
4.500	47	49	50	53	54	57	
5.000	50	52	54	57	58	61	
5.500	55	57	59	62	63	66	
6.000	59	60	62	65	67	70	
6.500	62	64	66	69	70	73	3 arms
7.000	66	67	69	72			

The specified forces apply to the “heaviest” application: Topas II with roof.

Extraction forces and transverse forces

Topas II without VarioShade Valance (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 250x290x15 mm mounting plate (MP250) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	263	399	570				without CTB
3.000	303	460	656	902			
3.500	343	521	741	1.016			
4.000	383	582	827	1.131			with CTB
4.500	423	643	913	1.245			
5.000	463	703	998	1.360			
5.500	503	764	1.084				
6.000	543	825	1.170				
6.500	583	886	1.255				
7.000	624	947	1.523				3 arms

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	62	64	67				without CTB
3.000	68	70	73	77			
3.500	74	76	79	83			
4.000	80	82	85	90			with CTB
4.500	70	72	75	78			
5.000	75	77	80	83			
5.500	81	84	86				
6.000	86	89	91				
6.500	91	93	96				
7.000	96	98	101				3 arms

The specified transverse forces apply to the "heaviest" application: Topas II with roof.

Extraction forces and transverse forces

Topas II without VarioShade Valance (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 660x300x15 mm mounting plate (MP300) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1	3;4;1
	2;4	2;5;1	3;7;1
Total number of installation points:	12	14	20

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	126	191	273				without CTB
3.000	145	221	315	433			
3.500	164	250	356	488	625		
4.000	184	279	397	543	696	1.007	with CTB
4.500	203	308	438	598	767	1.111	
5.000	222	337	479	653	954	1.215	
5.500	241	367	520	707	1.037	1.319	
6.000	261	396	561	868	1.120	1.422	
6.500	280	425	602	932	1.203	1.526	3 arms
7.000	299	454	731	995	904	1.152	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	50	52	54				without CTB
3.000	54	56	58	61			
3.500	58	60	62	65	67		
4.000	62	64	66	69	71	64	with CTB
4.500	58	59	61	64	65	68	
5.000	61	63	65	67	69	72	
5.500	66	68	70	72	74	77	
6.000	70	71	73	76	78	80	
6.500	73	75	77	80	81	84	3 arms
7.000	76	78	80	83	69	72	

The specified forces apply to the “heaviest” application: Topas II with roof.

Extraction forces and transverse forces

Topas II without VarioShade Valance (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1	3;4;1
	2;4	2;5;1	3;7;1
Total number of installation points:	12	14	20

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	93	141	201				without CTB
3.000	107	162	231	318			
3.500	121	184	261	358	460		
4.000	135	205	292	399	512	740	with CTB
4.500	149	226	322	439	564	817	
5.000	163	248	352	480	702	893	
5.500	177	269	382	520	762	969	
6.000	191	291	413	638	823	1.046	
6.500	206	312	443	685	884	1.122	3 arms
7.000	220	334	537	732	665	847	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	54	56	58				without CTB
3.000	58	60	62	64			
3.500	62	64	66	69	70		
4.000	66	68	70	73	75	68	with CTB
4.500	61	63	64	67	69	71	
5.000	65	66	68	71	72	75	
5.500	69	71	73	76	77	80	
6.000	73	74	76	79	81	84	
6.500	76	78	80	83	84	87	3 arms
7.000	80	81	84	86	73	75	

The specified forces apply to the “heaviest” application: Topas II with roof.

Extraction forces and transverse forces

Topas II without VarioShade Valance (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 450x200x30 mm mounting plate (MP450) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2	3;4;2
	2;4	2;5;2	–
Total number of installation points:	12	14	20

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	284	430	614				without CTB
3.000	328	496	706	970			
3.500	371	561	798	1.093	1.400		
4.000	414	627	890	1.216	1.558	2.252	with CTB
4.500	457	693	982	1.339	1.716	2.484	
5.000	501	758	1.074	1.462	2.136	2.716	
5.500	544	824	1.167	1.585	2.321	2.949	
6.000	587	889	1.259	1.944	2.506	3.181	
6.500	630	955	1.351	2.087	2.691	3.413	3 arms
7.000	674	1.020	1.639	2.230			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	49	50	52				without CTB
3.000	53	54	56	59			
3.500	57	58	60	63	65		
4.000	61	62	64	67	69	63	with CTB
4.500	57	58	60	63	64	67	
5.000	60	62	64	66	68	71	
5.500	65	67	69	71	73	76	
6.000	69	70	72	75	77	79	
6.500	72	74	76	78	80	83	3 arms
7.000	75	77	79	82			

The specified forces apply to the “heaviest” application: Topas II with roof.

Extraction forces and transverse forces

Topas II without VarioShade Valance (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 640x200x30 mm mounting plate (MP640) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2	3;4;2
	2;4	2;5;2	–
Total number of installation points:	24	26	38

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	142	215	307				without CTB
3.000	164	248	353	485			
3.500	185	280	399	546	700		
4.000	207	313	445	608	779	1.126	with CTB
4.500	228	346	491	669	858	1.242	
5.000	250	379	537	731	1.068	1.358	
5.500	272	412	583	792	1.160	1.474	
6.000	293	444	629	972	1.253	1.590	
6.500	315	477	675	1.043	1.345	1.706	3 arms
7.000	337	510	819	1.115			

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	26	27	28				without CTB
3.000	28	29	30	31			
3.500	30	31	32	34	34		
4.000	32	33	34	36	36	36	with CTB
4.500	32	33	34	36	36	38	
5.000	34	35	36	38	38	40	
5.500	37	38	39	40	41	43	
6.000	39	40	41	42	43	45	
6.500	41	41	43	44	45	47	3 arms
7.000	42	43	44	46			

The specified forces apply to the “heaviest” application: Topas II with roof.

Extraction forces

Topas II without VarioShade Valance (all alternatives) – roof mounting

Type of mount: **1x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3
Total number of installation points:	4	6

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	1.033	1.542	2.187				without CTB
3.000	1.185	1.772	2.509	3.441			
3.500	1.337	2.002	2.832	3.873			
4.000	1.489	2.231	3.155	4.304			with CTB
4.500	1.590	2.408	3.422	4.677			
5.000	1.738	2.633	3.741	5.105			
5.500	1.890	2.862	4.063				
6.000	2.038	3.087	4.381				
6.500	2.186	3.313	4.700				
7.000	2.335	3.539	5.670				3 arms

The specified extraction forces apply to the “heaviest” application: Topas II with roof.

Type of mount: **2x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5	7;7
Total number of installation points:	8	10	14

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	521	776	1.098				without CTB
3.000	597	890	1.259	1.725			
3.500	673	1.005	1.420	1.941	2.486		
4.000	749	1.120	1.582	2.156	2.764	3.964	with CTB
4.500	810	1.219	1.727	2.355	3.024	4.370	
5.000	885	1.332	1.887	2.569	3.746	4.776	
5.500	962	1.448	2.049	2.786	4.070	5.185	
6.000	1.036	1.562	2.209	3.397	4.393	5.591	
6.500	1.111	1.675	2.369	3.645	4.715	5.997	
7.000	1.186	1.789	2.855	3.894	3.556	4.537	3 arms

The specified extraction forces apply to the “heaviest” application: Topas II with roof.

Extraction forces and transverse forces

Topas II without VarioShade Valance (all alternatives) – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	14

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	351	521	736				without CTB
3.000	402	598	844	1.154			
3.500	453	674	951	1.298			
4.000	504	751	1.059	1.442			with CTB
4.500	547	820	1.158	1.577			
5.000	597	896	1.265	1.720			
5.500	649	973	1.374				
6.000	699	1.049	1.481				
6.500	749	1.125	1.588				
7.000	799	1.201	1.912				3 arms

The specified extraction forces apply to the “heaviest” application: Topas II with roof.

Type of mount: **2x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	4;4	4;4;1;1	6;6;1;1
Total number of installation points:	24	26	38

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	181	266	373				without CTB
3.000	206	304	427	582			
3.500	232	342	481	654	836		
4.000	257	381	534	726	929	1.332	with CTB
4.500	280	417	586	796	1.019	1.468	
5.000	305	455	640	867	1.260	1.603	
5.500	331	494	694	940	1.368	1.740	
6.000	357	532	748	1.144	1.476	1.875	
6.500	382	570	801	1.227	1.584	2.011	
7.000	407	608	964	1.310	1.195	1.522	3 arms

The specified forces apply to the “heaviest” application: Topas II with roof.

Extraction forces and transverse forces

Topas II without VarioShade Valance (all alternatives) – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 295 mm wall bracket (CB295/295) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	14

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	351	521	736				without CTB
3.000	402	597	843	1.154			
3.500	452	674	951	1.298	1.661		
4.000	503	750	1.058	1.441	1.847	2.649	with CTB
4.500	546	819	1.158	1.577	2.023	2.921	
5.000	597	895	1.265	1.720	2.504	3.192	
5.500	648	973	1.373	1.865	2.721	3.464	
6.000	698	1.048	1.480	2.273	2.936	3.735	
6.500	748	1.124	1.587	2.438	3.152	4.006	3 arms
7.000	799	1.200	1.911	2.604			

The specified forces apply to the “heaviest” application: Topas II with roof.

Extraction forces

Topas II without VarioShade Valance – roof mounting

Type of mount: **1x compact ceiling bracket (CCB) per arm** (only for Topas II without roof)

Table valid for all the following bracket assemblies:	2	3
Total number of installation points:	4	6

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	1.032	1.541	2.185				without CTB
3.000	1.184	1.771	2.508	3.440			
3.500	1.336	2.000	2.831	3.871			
4.000	1.488	2.230	3.154	4.303			with CTB
4.500	1.589	2.406	3.421	4.676			
5.000	1.737	2.632	3.740	5.104			
5.500	1.889	2.861	4.061				
6.000	2.037	3.086	4.380				
6.500	2.185	3.312	4.699				
7.000	2.333	3.537	5.669				3 arms

The specified extraction forces apply to the “heaviest” application: Topas II without roof.

Type of mount: **2x compact ceiling bracket (CCB) per arm** (only for Topas II without roof)

Table valid for all the following bracket assemblies:	4	5	7
Total number of installation points:	8	10	14

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	520	774	1.097				without CTB
3.000	596	889	1.258	1.724			
3.500	672	1.004	1.419	1.939	2.485		
4.000	748	1.119	1.581	2.155	2.763	3.962	with CTB
4.500	809	1.218	1.725	2.354	3.023	4.369	
5.000	883	1.331	1.885	2.568	3.744	4.775	
5.500	960	1.447	2.048	2.785	4.069	5.183	
6.000	1.035	1.560	2.208	3.396	4.391	5.590	
6.500	1.110	1.674	2.368	3.644	4.714	5.996	3 arms
7.000	1.185	1.787	2.854	3.893	3.554	4.536	

The specified forces apply to the “heaviest” application: Topas II without roof.

Shear forces

Topas II without VarioShade Valance (all alternatives) – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	1.447	2.147	3.027				without CTB
3.000	1.661	2.468	3.475	4.744			
3.500	1.875	2.788	3.923	5.341			
4.000	2.090	3.109	4.372	5.937			with CTB
4.500	2.253	3.377	4.764	6.475			
5.000	2.463	3.694	5.208	7.067			
5.500	2.677	4.014	5.656				
6.000	2.888	4.331	6.100				
6.500	3.098	4.648	6.544				
7.000	3.308	4.964	7.913				3 arms

The specified shear forces apply to the “heaviest” application: Topas II with roof.

Type of mount: **2x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5	7;7
Total number of installation points:	4	6	8

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	1.456	2.156	3.037				without CTB
3.000	1.671	2.477	3.485	4.754			
3.500	1.885	2.798	3.933	5.350	6.828		
4.000	2.100	3.119	4.381	5.947	7.593	10.853	with CTB
4.500	2.260	3.384	4.771	6.481	8.294	11.968	
5.000	2.470	3.700	5.215	7.073	10.294	13.083	
5.500	2.684	4.021	5.662	7.668	11.185	14.201	
6.000	2.894	4.337	6.106	9.375	12.073	15.316	
6.500	3.105	4.654	6.550	10.062	12.962	16.430	
7.000	3.315	4.971	7.919	10.749	9.773	12.430	3 arms

The specified transverse forces apply to the “heaviest” application: Topas II with roof.
When mounted on two separate rafters, the shear forces are reduced to 50%.

Shear forces

Topas II without VarioShade Valance (all alternatives) – rafter mounting

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2	3;3;3
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	658	944	1.303				without CTB
3.000	752	1.081	1.492	2.010			
3.500	846	1.218	1.680	2.259			
4.000	940	1.355	1.869	2.507			with CTB
4.500	982	1.439	2.002	2.697			
5.000	1.072	1.572	2.187	2.942			
5.500	1.165	1.708	2.374				
6.000	1.255	1.841	2.559				
6.500	1.345	1.974	2.743				3 arms
7.000	1.435	2.107	3.302				

The specified shear forces apply to the “heaviest” application: Topas II with roof.

Type of mount: **2x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	4;4;4	5;5;5	7;7;7
Total number of installation points:	4	6	8

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2.500	672	958	1.318				without CTB
3.000	766	1.095	1.506	2.024			
3.500	860	1.232	1.695	2.273	2.873		
4.000	954	1.369	1.883	2.521	3.190	4.475	with CTB
4.500	992	1.448	2.012	2.707	3.442	4.931	
5.000	1.081	1.581	2.196	2.951	4.256	5.387	
5.500	1.175	1.717	2.384	3.199	4.623	5.846	
6.000	1.264	1.850	2.568	3.894	4.987	6.302	
6.500	1.354	1.983	2.753	4.177	5.351	6.758	
7.000	1.444	2.116	3.311	4.459	4.051	5.130	3 arms

The specified transverse forces apply to the “heaviest” application: Topas II with roof.
When mounted on two separate rafters, the shear forces are reduced to 50%.

Extraction forces and transverse forces

Topas II with VarioShade Valance (all alternatives) – wall mounting

Type of mount: **1x 85 mm wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	2	3
Total number of installation points:	4	6

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	2.611	3.711	5.004			without CTB
3.000	2.999	4.261	5.738			
3.500	3.387	4.811	6.472			
4.000	3.774	5.361	7.206			
4.500	4.162	5.911				with CTB
5.000	4.550	6.462				
5.500	4.938	7.012				
6.000	5.326					

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	143	148	154			without CTB
3.000	159	165	171			
3.500	176	182	189			
4.000	193	198	206			
4.500	141	145				with CTB
5.000	152	156				
5.500	166	170				
6.000	177					

The specified forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Extraction forces and transverse forces

Topas II with VarioShade Valance (all alternatives) – wall mounting

Type of mount: **2x 85 mm wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	4	5
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	1.305	1.855	2.502			without CTB
3.000	1.499	2.130	2.869	3.746		
3.500	1.693	2.405	3.236	4.215	5.232	
4.000	1.887	2.680	3.603	4.685	5.815	
4.500	2.081	2.955	3.970	5.155	6.398	with CTB
5.000	2.275	3.231	4.337	5.624	7.624	
5.500	2.469	3.506	4.704	6.094		
6.000	2.663	3.781	5.071	7.142		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	73	76	79			without CTB
3.000	81	84	87	92		
3.500	90	92	96	101	103	
4.000	98	101	105	109	112	
4.500	86	88	91	95	97	with CTB
5.000	92	95	98	102	104	
5.500	101	104	107	111		
6.000	108	110	114	118		

The specified forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Extraction forces and transverse forces

Topas II with VarioShade Valance (all alternatives) – wall mounting

Type of mount: **1x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	1.305	1.855	2.502			without CTB
3.000	1.499	2.130	2.869			
3.500	1.693	2.405	3.236			
4.000	1.887	2.680	3.603			
4.500	2.081	2.955				with CTB
5.000	2.275	3.231				
5.500	2.469	3.506				
6.000	2.663					

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	75	78	81			without CTB
3.000	83	86	89			
3.500	92	94	98			
4.000	100	103	106			
4.500	87	90				with CTB
5.000	94	97				
5.500	103	105				
6.000	109					

The specified forces apply to the "heaviest" application: Topas II VarioShade Valance with roof.

Extraction forces and transverse forces

Topas II with VarioShade Valance (all alternatives) – wall mounting

Type of mount: **2x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	4	4;1
Total number of installation points:	16	18

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	652	927	1.251			without CTB
3.000	749	1.065	1.434	1.873		
3.500	846	1.202	1.618	2.107	2.616	
4.000	943	1.340	1.801	2.342	2.907	
4.500	1.040	1.477	1.985	2.577	3.199	with CTB
5.000	1.137	1.615	2.168	2.812	3.812	
5.500	1.234	1.753	2.352	3.047		
6.000	1.331	1.890	2.535	3.571		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	40	41	43			without CTB
3.000	44	46	47	50		
3.500	49	50	52	54	55	
4.000	53	54	56	58	60	
4.500	51	52	54	56	57	with CTB
5.000	55	56	58	60	61	
5.500	59	61	63	65		
6.000	63	65	66	69		

The specified forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Extraction forces and transverse forces

Topas II with VarioShade Valance (all alternatives) – wall mounting

Type of mount: **1x 295 mm wall bracket (WB295) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	870	1.237	1.668			without CTB
3.000	999	1.420	1.912	2.497		
3.500	1.129	1.603	2.157	2.810	3.488	
4.000	1.258	1.787	2.402	3.123	3.877	
4.500	1.387	1.970	2.646	3.436	4.265	with CTB
5.000	1.516	2.154	2.891	3.749	5.083	
5.500	1.646	2.337	3.136	4.062		
6.000	1.775	2.520	3.380	4.761		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	49	51	53			without CTB
3.000	55	57	59	62		
3.500	60	62	65	68	70	
4.000	66	68	70	73	75	
4.500	62	64	66	68	70	with CTB
5.000	67	68	71	73	75	
5.500	73	75	77	80		
6.000	78	79	82	85		

The specified forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Extraction forces and transverse forces

Topas II with VarioShade Valance (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 250x290x15 mm mounting plate (MP250) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	495	702	945			without CTB
3.000	568	806	1.084			
3.500	642	910	1.222			
4.000	715	1.014	1.361			
4.500	789	1.118				with CTB
5.000	862	1.222				
5.500	936	1.326				
6.000	1.009					

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	78	81	84			without CTB
3.000	86	89	93			
3.500	95	98	101			
4.000	103	106	110			
4.500	91	93				with CTB
5.000	97	100				
5.500	106	108				
6.000	113					

The specified transverse forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Extraction forces and transverse forces

Topas II with VarioShade Valance (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 660x300x15 mm mounting plate (MP300) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
	2;4	2;5;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	237	337	453			without CTB
3.000	272	386	520	678		
3.500	308	436	587	763	947	
4.000	343	486	653	849	1.053	
4.500	378	536	720	934	1.158	with CTB
5.000	414	586	786	1.019	1.380	
5.500	449	636	853	1.104		
6.000	484	686	919	1.294		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	61	63	65			without CTB
3.000	67	69	71	74		
3.500	73	74	77	80	82	
4.000	78	80	82	86	88	
4.500	73	74	76	79	81	with CTB
5.000	77	79	81	84	86	
5.500	84	85	88	91		
6.000	88	90	93	95		

The specified forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Extraction forces and transverse forces

Topas II with VarioShade Valance (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
	2;4	2;5;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	174	247	333			without CTB
3.000	200	284	382	499		
3.500	226	321	431	561	696	
4.000	252	358	480	624	774	
4.500	278	394	529	686	851	with CTB
5.000	304	431	578	749	1.015	
5.500	330	468	627	811		
6.000	356	504	676	951		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	65	67	69			without CTB
3.000	71	73	75	78		
3.500	76	78	80	84	85	
4.000	82	84	86	89	91	
4.500	76	78	80	82	84	with CTB
5.000	81	82	85	87	89	
5.500	87	89	91	94		
6.000	92	93	96	99		

The specified forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Extraction forces and transverse forces

Topas II with VarioShade Valance (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 450x200x30 mm mounting plate (MP450) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2
	2;4	2;5;2
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	533	755	1.016			without CTB
3.000	613	867	1.165	1.518		
3.500	692	979	1.314	1.709	2.118	
4.000	771	1.091	1.463	1.899	2.353	
4.500	850	1.203	1.612	2.089	2.589	with CTB
5.000	930	1.315	1.761	2.279	3.086	
5.500	1.009	1.427	1.910	2.470		
6.000	1.088	1.539	2.059	2.896		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	60	61	64			without CTB
3.000	65	67	69	72		
3.500	71	73	75	78	80	
4.000	76	78	81	84	86	
4.500	72	73	75	78	80	with CTB
5.000	76	78	80	83	85	
5.500	83	84	87	89		
6.000	87	89	91	94		

The specified forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Extraction forces and transverse forces

Topas II with VarioShade Valance (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 640x200x30 mm mounting plate (MP640) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2
	2;4	2;5;2
Total number of installation points:	24	26

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	266	377	508			without CTB
3.000	306	433	582	759		
3.500	346	489	657	854	1.059	
4.000	385	545	731	949	1.176	
4.500	425	601	806	1.044	1.294	with CTB
5.000	465	657	880	1.139	1.543	
5.500	504	713	955	1.235		
6.000	544	769	1.029	1.448		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	32	33	34			without CTB
3.000	35	35	37	38		
3.500	37	38	39	41	42	
4.000	40	41	42	44	45	
4.500	40	41	42	44	45	with CTB
5.000	43	44	45	47	48	
5.500	46	47	48	50		
6.000	49	50	51	53		

The specified forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Extraction forces

Topas II with VarioShade Valance (all alternatives) – roof mounting

Type of mount: **1x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3
Total number of installation points:	4	6

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	1.902	2.688	3.614			without CTB
3.000	2.180	3.081	4.139			
3.500	2.458	3.475	4.664			
4.000	2.736	3.868	5.188			
4.500	2.945	4.191				with CTB
5.000	3.218	4.579				
5.500	3.493	4.970				
6.000	3.766					

The specified extraction forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Type of mount: **2x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5
Total number of installation points:	8	10

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	955	1.348	1.812			without CTB
3.000	1.094	1.545	2.074	2.703		
3.500	1.233	1.742	2.336	3.039	3.770	
4.000	1.372	1.938	2.599	3.375	4.187	
4.500	1.491	2.114	2.839	3.687	4.581	with CTB
5.000	1.628	2.309	3.100	4.022	5.441	
5.500	1.767	2.506	3.362	4.358		
6.000	1.905	2.701	3.623	5.088		

The specified extraction forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Extraction forces

Topas II with VarioShade Valance (all alternatives) – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	14

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	641	903	1.212			without CTB
3.000	734	1.034	1.387			
3.500	826	1.165	1.562			
4.000	919	1.297	1.737			
4.500	1.002	1.417				with CTB
5.000	1.094	1.548				
5.500	1.187	1.680				
6.000	1.279					

The specified extraction forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Type of mount: **2x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	4;4	4;4;1;1
Total number of installation points:	24	26

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	326	457	611			without CTB
3.000	372	522	698	908		
3.500	418	588	786	1.020	1.264	
4.000	465	653	873	1.132	1.403	
4.500	508	716	958	1.241	1.539	with CTB
5.000	554	781	1.045	1.353	1.826	
5.500	601	848	1.133	1.465		
6.000	647	913	1.220	1.709		

The specified forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Extraction forces

Topas II with VarioShade Valance (all alternatives) – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 295 mm wall bracket (CB295/295) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	14

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	641	903	1.211			without CTB
3.000	733	1.034	1.386	1.806		
3.500	826	1.165	1.561	2.030	2.517	
4.000	919	1.296	1.736	2.253	2.795	
4.500	1.001	1.417	1.900	2.466	3.062	with CTB
5.000	1.093	1.547	2.075	2.689	3.635	
5.500	1.187	1.679	2.250	2.914		
6.000	1.278	1.809	2.424	3.401		

The specified forces apply to the "heaviest" application: Topas II VarioShade Valance with roof.

Extraction forces

Topas II with VarioShade Valance (all alternatives) – roof mounting

Type of mount: **1x compact ceiling bracket (CCB) per arm** (only for Topas II VarioShade Valance without roof)

Table valid for all the following bracket assemblies:	2	3
Total number of installation points:	4	6

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	1.901	2.687	3.613			without CTB
3.000	2.179	3.080	4.138			
3.500	2.457	3.473	4.662			
4.000	2.735	3.867	5.187			
4.500	2.944	4.190				with CTB
5.000	3.216	4.578				
5.500	3.492	4.969				
6.000	3.764					

The specified extraction forces apply to the “heaviest” application: Topas II VarioShade Valance without roof.

Type of mount: **2x compact ceiling bracket (CCB) per arm** (only for Topas II VarioShade Valance without roof)

Table valid for all the following bracket assemblies:	4	5
Total number of installation points:	8	10

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	954	1.347	1.810			without CTB
3.000	1.093	1.544	2.073	2.702		
3.500	1.232	1.741	2.335	3.038	3.769	
4.000	1.371	1.937	2.597	3.373	4.186	
4.500	1.489	2.113	2.838	3.686	4.579	with CTB
5.000	1.627	2.308	3.098	4.020	5.439	
5.500	1.766	2.505	3.361	4.356		
6.000	1.903	2.700	3.622	5.087		

The specified forces apply to the “heaviest” application: Topas II VarioShade Valance without roof.

Shear forces

Topas II with VarioShade Valance (all alternatives) – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	2.657	3.723	4.979			without CTB
3.000	3.046	4.270	5.703			
3.500	3.435	4.816	6.426			
4.000	3.825	5.362	7.150			
4.500	4.145	5.838				with CTB
5.000	4.529	6.378				
5.500	4.916	6.922				
6.000	5.300					

The specified shear forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Type of mount: **2x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	2.666	3.733	4.989			without CTB
3.000	3.056	4.279	5.712	7.414		
3.500	3.445	4.826	6.436	8.337	10.306	
4.000	3.835	5.372	7.160	9.259	11.448	
4.500	4.152	5.844	7.807	10.102	12.508	with CTB
5.000	4.536	6.385	8.526	11.018	14.882	
5.500	4.923	6.929	9.247	11.938		
6.000	5.307	7.469	9.965	13.968		

The specified transverse forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.
When mounted on two separate rafters, the shear forces are reduced to 50%.

Shear forces

Topas II with VarioShade Valance (all alternatives) – rafter mounting

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2	3;3;3
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	1.167	1.602	2.113			without CTB
3.000	1.334	1.832	2.416			
3.500	1.502	2.063	2.719			
4.000	1.669	2.294	3.022			
4.500	1.768	2.455				with CTB
5.000	1.930	2.680				
5.500	2.095	2.908				
6.000	2.257					

The specified shear forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.

Type of mount: **2x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	4;4;4	5;5;5
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2.500	1.181	1.616	2.127			without CTB
3.000	1.349	1.847	2.430	3.124		
3.500	1.516	2.078	2.733	3.507	4.307	
4.000	1.683	2.308	3.036	3.890	4.779	
4.500	1.777	2.464	3.261	4.192	5.168	with CTB
5.000	1.939	2.689	3.558	4.570	6.134	
5.500	2.104	2.918	3.858	4.950		
6.000	2.266	3.143	4.155	5.778		

The specified transverse forces apply to the “heaviest” application: Topas II VarioShade Valance with roof.
When mounted on two separate rafters, the shear forces are reduced to 50%.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – wall mounting

Type of mount: **1x 85 mm wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	2
Total number of installation points:	4

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	2.109	3.016	4.169			without CTB
3.000		3.469	4.776			
3.500			5.382			
4.000						with CTB
4.500						

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	113	119	127			without CTB
3.000		131	139			
3.500			151			
4.000						with CTB
4.500						

The specified forces apply to the “heaviest” application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – wall mounting

Type of mount: **2x 85 mm wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	4	5
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	1.054	1.508	2.084	2.672	3.839	without CTB
3.000		1.734	2.388	3.063	4.413	
3.500			2.691	3.453	4.987	
4.000				3.844	5.561	with CTB
4.500					6.135	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	58	61	65	67	58	without CTB
3.000		67	71	74	63	
3.500			77	80	68	
4.000				86	73	with CTB
4.500					78	

The specified forces apply to the “heaviest” application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – wall mounting

Type of mount: **1x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	2
Total number of installation points:	8

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	1.054	1.508	2.084			without CTB
3.000		1.734	2.388			
3.500			2.691			
4.000						with CTB
4.500						

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	60	63	67			without CTB
3.000		69	73			
3.500			79			
4.000						with CTB
4.500						

The specified forces apply to the “heaviest” application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – wall mounting

Type of mount: **2x 260 mm wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	4	4;1
Total number of installation points:	16	18

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	527	754	1.042	1.336	1.919	without CTB
3.000		867	1.194	1.531	2.206	
3.500			1.345	1.726	2.493	
4.000				1.922	2.780	with CTB
4.500					3.067	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	33	34	36	37	36	without CTB
3.000		37	39	40	38	
3.500			42	44	41	
4.000				47	44	with CTB
4.500					47	

The specified forces apply to the “heaviest” application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – wa II mounting

Type of mount: **1x 295 mm wall bracket (WB295) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	703	1.005	1.389	1.781	2.559	without CTB
3.000		1.156	1.592	2.042	2.942	
3.500			1.794	2.302	3.324	
4.000				2.562	3.707	with CTB
4.500					4.090	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	39	41	44	46	42	without CTB
3.000		45	48	50	46	
3.500			52	54	49	
4.000				58	53	with CTB
4.500					56	

The specified forces apply to the “heaviest” application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 250x290x15 mm mounting plate (MP250) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	8

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	399	570	787			without CTB
3.000		656	902			
3.500			1.016			
4.000						with CTB
4.500						

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	63	66	70			without CTB
3.000		72	76			
3.500			82			
4.000						with CTB
4.500						

The specified transverse forces apply to the "heaviest" application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 660x300x15 mm mounting plate (MP300) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
	2;4	2;5;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	191	273	378	484	695	without CTB
3.000		315	433	555	799	
3.500			488	625	903	
4.000				696	1.007	with CTB
4.500					1.111	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	52	53	56	58	53	without CTB
3.000		57	60	62	57	
3.500			64	66	60	
4.000				70	64	with CTB
4.500					67	

The specified forces apply to the “heaviest” application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
	2;4	2;5;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	141	201	278	356	511	without CTB
3.000		231	318	408	587	
3.500			358	460	664	
4.000				512	740	with CTB
4.500					817	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 90% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	55	57	60	61	56	without CTB
3.000		61	64	66	60	
3.500			68	70	63	
4.000				74	67	with CTB
4.500					71	

The specified forces apply to the “heaviest” application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 450x200x30 mm mounting plate (MP450) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2
	2;4	2;5;2
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	430	614	847	1.083	1.555	without CTB
3.000		706	970	1.242	1.787	
3.500			1.093	1.400	2.019	
4.000				1.558	2.252	with CTB
4.500					2.484	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	50	52	54	56	52	without CTB
3.000		56	58	60	55	
3.500			63	64	59	
4.000				68	63	with CTB
4.500					66	

The specified forces apply to the “heaviest” application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – wall mounting with mounting plate

Type of mount: **1x 640x200x30 mm mounting plate (MP640) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;2
	2;4	2;5;2
Total number of installation points:	24	26

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	215	307	423	541	777	without CTB
3.000		353	485	621	893	
3.500			546	700	1.009	
4.000				779	1.126	with CTB
4.500					1.242	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	27	28	29	30	30	without CTB
3.000		30	31	32	32	
3.500			33	34	34	
4.000				36	36	with CTB
4.500					37	

The specified forces apply to the “heaviest” application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – roof mounting

Type of mount: **1x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	4

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	1.541	2.186	3.008			without CTB
3.000		2.508	3.440			
3.500			3.871			
4.000						with CTB
4.500						

The specified extraction forces apply to the “heaviest” application: Topas II MiniMax with roof.

Type of mount: **2x 85 mm ceiling bracket (CB85) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5
Total number of installation points:	8	10

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	775	1.097	1.509	1.930	2.744	without CTB
3.000		1.258	1.724	2.207	3.150	
3.500			1.940	2.485	3.557	
4.000				2.763	3.963	with CTB
4.500					4.369	

The specified extraction forces apply to the “heaviest” application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	12

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	521	736	1.010			without CTB
3.000		843	1.154			
3.500			1.297			
4.000						with CTB
4.500						

The specified extraction forces apply to the “heaviest” application: Topas II MiniMax with roof.

Type of mount: **2x 295 mm ceiling bracket with 260 mm wall bracket (CB295/260) per arm**

Table valid for all the following bracket assemblies:	4;4	4;4;1;1
Total number of installation points:	24	26

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	266	373	510	650	925	without CTB
3.000		427	582	743	1.060	
3.500			654	836	1.196	
4.000				928	1.332	with CTB
4.500					1.467	

The specified forces apply to the “heaviest” application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – roof mounting

Type of mount: **1x 295 mm ceiling bracket with 295 mm wall bracket (CB295/295) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	14

Extraction forces force per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	520	735	1.010	1.290	1.836	without CTB
3.000		843	1.153	1.475	2.107	
3.500			1.297	1.661	2.378	
4.000				1.846	2.649	with CTB
4.500					2.920	

The specified forces apply to the "heaviest" application: Topas II MiniMax with roof.

Extraction forces and transverse forces

Topas II MiniMax (all alternatives) – roof mounting

Type of mount: **1x compact ceiling bracket (CCB) per arm** (only for Topas II MiniMax without roof)

Table valid for all the following bracket assemblies:	2
Total number of installation points:	4

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	1.540	2.184	3.007			without CTB
3.000		2.507	3.438			
3.500			3.870			
4.000						with CTB
4.500						

The specified extraction forces apply to the “heaviest” application: Topas II MiniMax without roof.

Type of mount: **2x compact ceiling bracket (CCB) per arm** (only for Topas II MiniMax without roof)

Table valid for all the following bracket assemblies:	4	5
Total number of installation points:	8	10

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	774	1.096	1.507	1.928	2.743	without CTB
3.000		1.257	1.723	2.206	3.149	
3.500			1.939	2.484	3.555	
4.000				2.762	3.962	with CTB
4.500					4.368	

The specified forces apply to the “heaviest” application: Topas II MiniMax without roof.

Shear forces

Topas II MiniMax (all alternatives) – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	4

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	2.146	3.026	4.147			without CTB
3.000		3.474	4.743			
3.500			5.339			
4.000						with CTB
4.500						

The specified shear forces apply to the “heaviest” application: Topas II MiniMax with roof.

Type of mount: **2x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	4;4	5;5
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	2.155	3.036	4.157	5.296	7.508	without CTB
3.000		3.484	4.753	6.061	8.622	
3.500			5.349	6.826	9.737	
4.000				7.590	10.851	with CTB
4.500					11.966	

The specified transverse forces apply to the “heaviest” application: Topas II MiniMax with roof.
When mounted on two separate rafters, the shear forces are reduced to 50%.

Shear forces

Topas II MiniMax (all alternatives) – rafter mounting

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2
Total number of installation points:	4

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	943	1.302	1.760			without CTB
3.000		1.490	2.009			
3.500			2.257			
4.000						with CTB
4.500						

The specified shear forces apply to the “heaviest” application: Topas II MiniMax with roof.

Type of mount: **2x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	4;4;4	5;5;5
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	957	1.316	1.775	2.238	3.107	without CTB
3.000		1.505	2.023	2.555	3.562	
3.500			2.271	2.871	4.018	
4.000				3.188	4.474	with CTB
4.500					4.929	

The specified transverse forces apply to the “heaviest” application: Topas II MiniMax with roof.
When mounted on two separate rafters, the shear forces are reduced to 50%.

Extraction forces and transverse forces

Topas II Niche (all alternatives) – wall mounting

Type of mount: **1x 85 mm niche wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	2	3
Total number of installation points:	4	6

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1.500	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	1.889	2.761	3.818				without CTB
3.000	2.193	3.202	4.418	5.904			
3.500	2.496	3.643	5.018	6.684			
4.000	2.800	4.084	5.618	7.465			with CTB
4.500	3.104	4.525	6.218	8.246			
5.000	3.407	4.966	6.818	9.026			
5.500	3.711	5.407	7.419				
6.000	4.014	5.848	8.019				

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1.500	2.000	2.500	3.000	3.500	4.000	Limiting size
2.500	110	115	121				without CTB
3.000	122	127	133	141			
3.500	134	139	145	154			
4.000	146	151	157	166			with CTB
4.500	106	110	114	120			
5.000	114	118	122	128			
5.500	125	129	133				
6.000	133	137	142				

The specified forces apply to the "heaviest" application: Topas II Niche with 300 mm high front panel.

Extraction forces and transverse forces

Topas II Niche (all alternatives) – wall mounting

Type of mount: **2x 85 mm niche wall bracket (WB85) per arm**

Table valid for all the following bracket assemblies:	4	5
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4.000	Limiting size
2.500	944	1.380	1.909				without CTB
3.000	1.096	1.601	2.209	2.952			
3.500	1.248	1.821	2.509	3.342	4.208		
4.000	1.400	2.042	2.809	3.732	4.699	6.538	with CTB
4.500	1.552	2.262	3.109	4.123	5.191	7.226	
5.000	1.703	2.483	3.409	4.513	6.328	7.915	
5.500	1.855	2.703	3.709	5.435	6.885	8.603	
6.000	2.007	2.924	4.009	5.874	7.443	9.291	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4.000	Limiting size
2.500	57	59	62				without CTB
3.000	63	65	68	72			
3.500	69	71	74	79	81		
4.000	75	77	80	85	87	74	with CTB
4.500	65	67	70	73	75	79	
5.000	70	72	75	78	80	84	
5.500	76	79	81	85	87	91	
6.000	81	83	86	90	92	96	

The specified forces apply to the “heaviest” application: Topas II Niche with 300 mm high front panel.

Extraction forces and transverse forces

Topas II Niche (all alternatives) – wall mounting

Type of mount: **1x 260 mm niche wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	8	10

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4.000	Limiting size
2.500	944	1.380	1.909				without CTB
3.000	1.096	1.601	2.209	2.952			
3.500	1.248	1.821	2.509	3.342			
4.000	1.400	2.042	2.809	3.732			with CTB
4.500	1.552	2.262	3.109	4.123			
5.000	1.703	2.483	3.409	4.513			
5.500	1.855	2.703	3.709				
6.000	2.007	2.924	4.009				

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4.000	Limiting size
2.500	59	61	64				without CTB
3.000	65	67	70	74			
3.500	71	73	76	80			
4.000	77	79	82	87			with CTB
4.500	67	69	71	75			
5.000	71	73	76	80			
5.500	78	80	83				
6.000	83	85	88				

The specified forces apply to the “heaviest” application: Topas II Niche with 300 mm high front panel.

Extraction forces and transverse forces

Topas II Niche (all alternatives) – wall mounting

Type of mount: **2x 260 mm niche wall bracket (WB260) per arm**

Table valid for all the following bracket assemblies:	4	4;1
Total number of installation points:	16	18

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4.000	Limiting size
2.500	472	690	954				without CTB
3.000	548	800	1.104	1.476			
3.500	624	910	1.254	1.671	2.104		
4.000	700	1.021	1.404	1.866	2.349	3.269	with CTB
4.500	776	1.131	1.554	2.061	2.595	3.613	
5.000	851	1.241	1.704	2.256	3.164	3.957	
5.500	927	1.351	1.854	2.717	3.442	4.301	
6.000	1.003	1.462	2.004	2.937	3.721	4.645	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4.000	Limiting size
2.500	32	33	35				without CTB
3.000	35	36	38	40			
3.500	38	39	41	43	44		
4.000	41	42	44	46	47	44	with CTB
4.500	39	41	42	44	45	47	
5.000	42	43	45	47	48	50	
5.500	46	47	49	51	52	54	
6.000	48	50	51	53	55	57	

The specified forces apply to the “heaviest” application: Topas II Niche with 300 mm high front panel.

Extraction forces and transverse forces

Topas II Niche (all alternatives) – wall mounting

Type of mount: **1x 295 mm niche wall bracket (WB295) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	12	14

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4.000	Limiting size
2.500	629	920	1.272				without CTB
3.000	731	1.067	1.472	1.968			
3.500	832	1.214	1.672	2.228	2.805		
4.000	933	1.361	1.872	2.488	3.133	4.358	with CTB
4.500	1.034	1.508	2.072	2.748	3.460	4.817	
5.000	1.135	1.655	2.272	3.008	4.218	5.276	
5.500	1.237	1.802	2.473	3.623	4.590	5.735	
6.000	1.338	1.949	2.673	3.916	4.962	6.194	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing when using the top and middle installation point.

When using the top and bottom installation point the extraction forces are 63% of the specified values.

The extraction forces are 52% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4.000	Limiting size
2.500	39	40	42				without CTB
3.000	43	44	46	49			
3.500	46	48	50	53	55		
4.000	50	52	54	57	59	54	with CTB
4.500	47	49	50	53	54	57	
5.000	50	52	54	56	58	61	
5.500	55	57	59	61	63	66	
6.000	58	60	62	65	67	69	

The specified forces apply to the “heaviest” application: Topas II Niche with 300 mm high front panel.

Cassette-awnings



02 Cassette-awnings

Opal Design II

Selection of brackets

Wall mounting	147
Wall mounting with mounting plate	149
Roof mounting	151
Rafter mounting	153

Selection of brackets

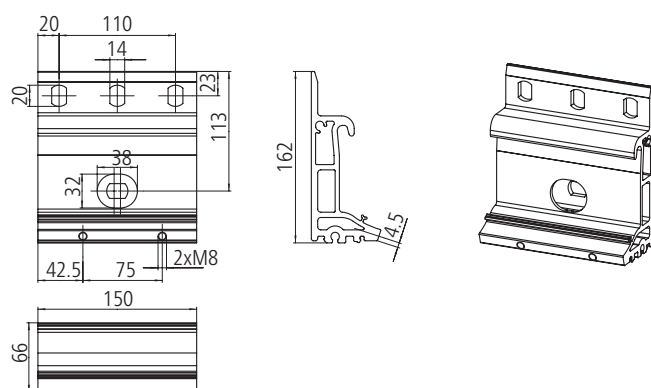
Opal Design II – wall mounting

Bracket assembly consisting of:
150 mm wall bracket; item no. 115973

Notes on this bracket assembly:
1x 150 mm wall bracket (WB150)
1 bracket per arm
2 top installation points, distance between centre lines 110 mm
3 installation points in total



Corresponding centre bracket assembly:
150 mm wall bracket (WB150); item no. 115973



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2	2x WB150	without CTB	2x 115973
3	3x WB150	with CTB	3x 115973

Selection of brackets

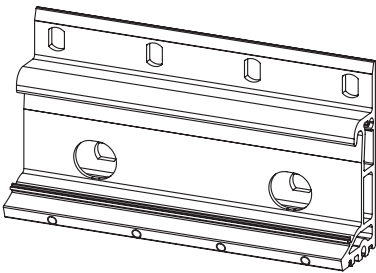
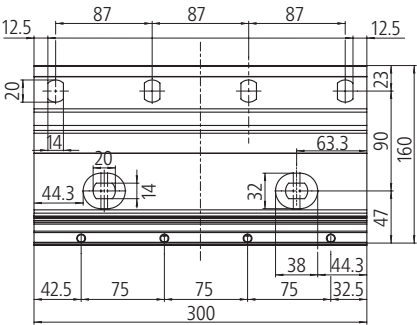
Opal Design II – wall mounting

Bracket assembly consisting of:
300 mm wall bracket; item no. 115976

Notes on this bracket assembly:
1x 300 mm wall bracket (WB300)
1 bracket per arm
4 top installation points, distance between centre lines 87 mm
6 installation points in total



Corresponding centre bracket assembly:
150 mm wall bracket (WB150); item no. 115973



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2	2x WB300	without CTB	2x 115976
2;1	2x WB300, 1x WB150	with CTB	2x 115976 + 1x 115973

Selection of brackets

Opal Design II – wall mounting with mounting plate

Bracket assembly consisting of:

660 x 220 x 15 mm mounting plate with:
- 1x 150 mm wall bracket; item no. 115985

Notes on this bracket assembly:

1x 660 x 220 x 15 mm mounting plate (MP220)

incl. 1x 150 mm wall bracket (WB150)

1 mounting plate per arm

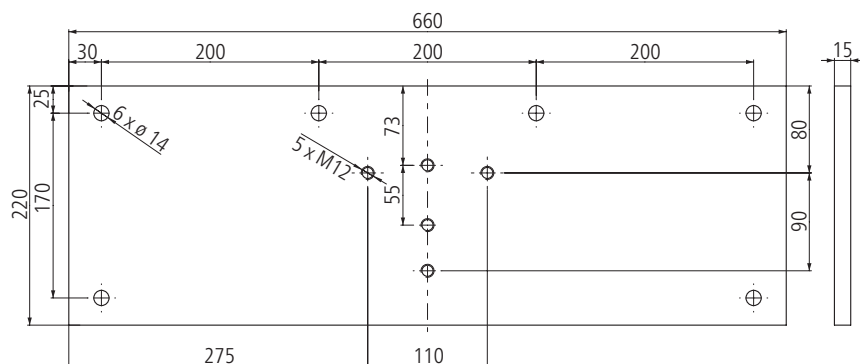
4 top installation points, distance between centre lines 200 mm

6 installation points in total



Corresponding centre bracket assembly:

150 x 160 x 15 mm base plate (BP150) including 1x 150 mm wall bracket (WB150); item no. 116670



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2	2x MP220, 2x WB150	without CTB	2x 115985
2;3;1	2x MP220, 3x WB150, 1x BP150	with CTB	2x 115985 + 1x 116670

Selection of brackets

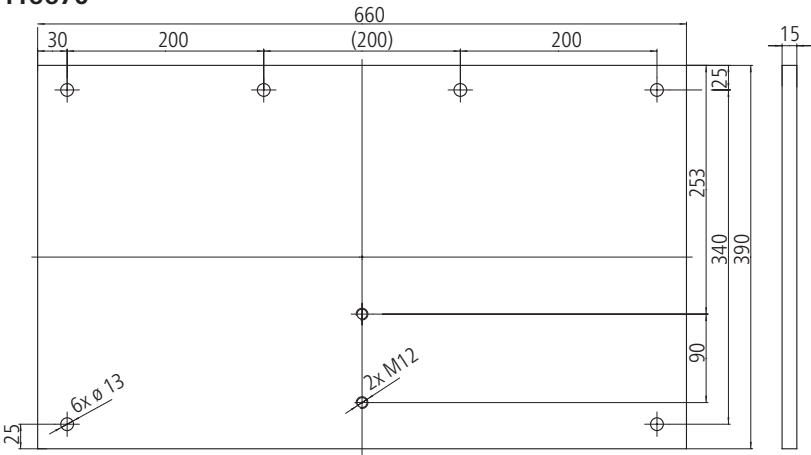
Opal Design II – wall mounting with mounting plate

Bracket assembly consisting of:
660 x 390 x 15 mm mounting plate with:
- 1x 150 mm wall bracket; item no. 115988

Notes on this bracket assembly:
1x 660 x 390 x 15 mm mounting plate (MP390)
incl. 1x 150 mm wall bracket (WB150)
1 mounting plate per arm
4 top installation points, distance between centre lines 200 mm
6 installation points in total



Corresponding centre bracket assembly:
150 x 160 x 15 mm base plate (BP150) including 1x 150 mm wall bracket (WB150); item no. 116670



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2	2x MP390, 2x WB150	without CTB	2x 115988
2;3;1	2x MP390, 3x WB150, 1x UP150	with CTB	2x 115988 + 1x 116670

Selection of brackets

Opal Design II – roof mounting

Bracket assembly consisting of:

Compact ceiling bracket, item no. 118862

Notes on this bracket assembly:

1x compact ceiling bracket (CCB)

1 bracket per arm

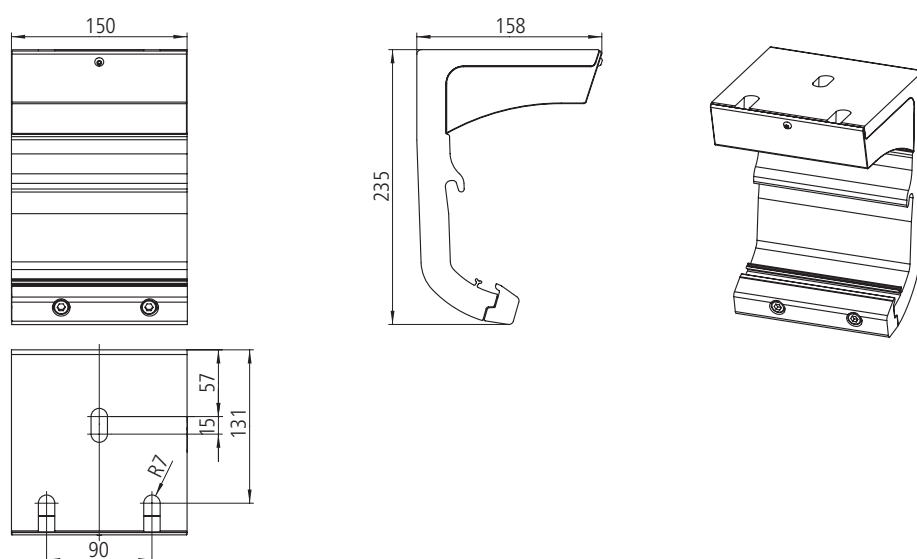
2 front installation points, distance between centre lines 90 mm

3 installation points in total



Corresponding centre bracket assembly:

Compact ceiling bracket (CCB), item no. 118862



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2	2x CCB	without CTB	2x 118862
3	3x CCB	with CTB	3x 118862

Selection of brackets

Opal Design II – front roof mounting

Bracket assembly consisting of:

390 x 160 x 15 mm roof front plate with:
- 1x 150 mm wall bracket; item no. 115960

Notes on this bracket assembly:

1x 390 x 160 x 15 mm roof front plate (RP390)

incl. 1x 150 mm wall bracket (WB150)

1 roof front plate per arm

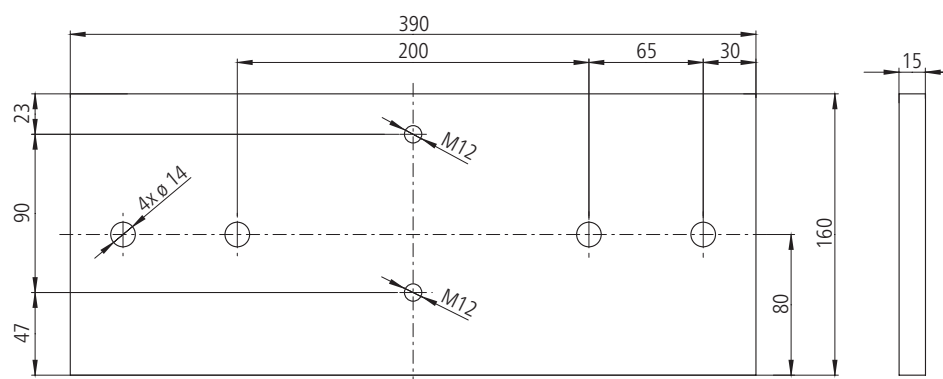
4 installation points, distance between centre lines 65/200/65 mm

4 installation points in total



Corresponding centre bracket assembly:

390 x 160 x 15 mm roof front plate (RP390) including 1x 150 mm wall bracket (WB150); item no. 115960



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2	2x RP390, 2x WB150	without CTB	2x 115960
3;3	3x DS390, 3x WB150	with CTB	3x 115960

Selection of brackets

Opal Design II – rafter mounting

Bracket assembly consisting of:

Rafter bracket with:

- 150 mm wall bracket; item no. 115987

Notes on this bracket assembly:

1x rafter bracket (RB)

incl. 1x 150 mm wall bracket (WB150)

1 bracket per arm

1 front installation point

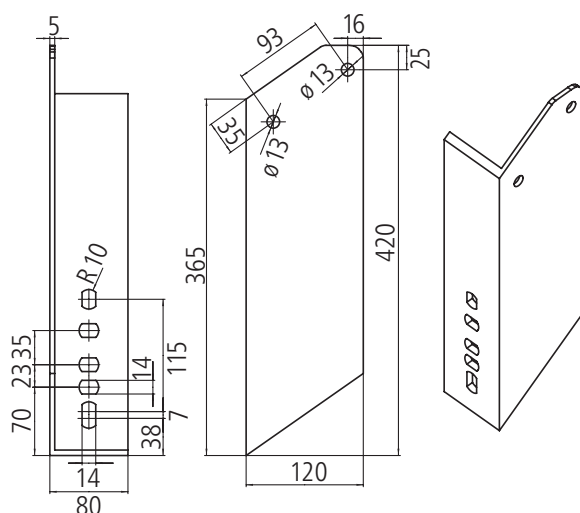
2 installation points in total

One left and right version each



Corresponding centre bracket assembly:

Rafter bracket (RB) including 1x 150 mm wall bracket (WB150); item no. 115987



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2	2x RB, 2x WB150	without CTB	2x 115987
3;3	3x RB, 3x WB150	with CTB	3x 115987

Selection of brackets

Opal Design II – rafter mounting

Bracket assembly consisting of:

Rafter bracket and mounting plate with:
- 150 mm wall bracket; item no. 115990

Notes on this bracket assembly:

1x rafter bracket (RB) and mounting plate (MP)
incl. 1x 150 mm wall bracket (WB150)

1 bracket per arm

1 front installation point

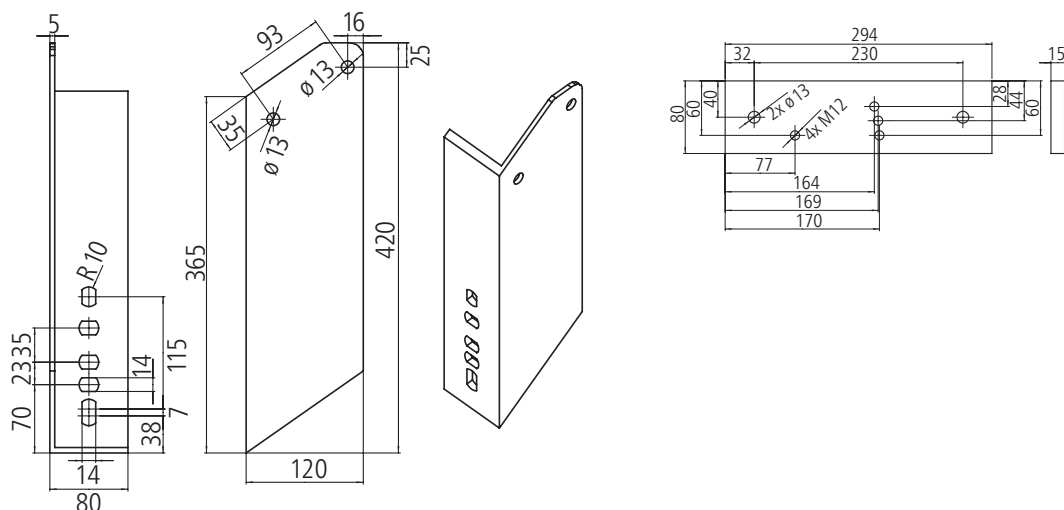
2 installation points in total

One left and right version each



Corresponding centre bracket assembly:

Rafter bracket (RB) and mounting plate (MP) including 1x 150 mm wall bracket (WB150); item no. 115990



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2;2	2x RB, 2x WB150, 2x MP	without CTB	2x 115990
3;3;3	3x RB, 3x WB150, 3x MP	with CTB	3x 115990

02 Cassette-awnings

Opal Design II

Extraction forces and transverse forces

Opal Design II without VarioShade Valance	156
Opal Design II with VarioShade Valance	163



Yellow area means limiting size

Extraction forces and transverse forces

Opal Design II without VarioShade Valance – wall mounting

Type of mount: **1x 150 mm wall bracket (WB150) per arm**

Table valid for all the following bracket assemblies:	2	3
Total number of installation points:	6	9

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	781	1.168					without CTB
3000	904	1.351	1.901				
3500	1.026	1.533	2.155	2.922			
4000	1.149	1.716	2.409	3.257	4.148		
4500	1.271	1.899	2.662	3.592	4.576	6.522	
5000	1.394	2.081	2.916	3.928	5.645	7.138	
5500	1.516	2.264	3.170	4.263	6.139	7.754	with CTB
6000	1.639	2.447	3.423	5.176	6.633	8.371	
6500	1.761	2.630	3.677	5.561	7.127	8.987	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 66% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	78	81					without CTB
3000	87	90	94				
3500	96	99	103	109			
4000	105	108	112	118	121		
4500	113	117	121	127	131	137	
5000	122	126	130	136	140	147	
5500	89	91	94	98	101	105	with CTB
6000	94	97	100	104	107	112	
6500	100	103	106	111	113	118	

Extraction forces and transverse forces

Opal Design II without VarioShade Valance – wall mounting

Type of mount: **1x 300 mm wall bracket (WB300) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	12	15

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	390	584					without CTB
3000	452	675	950				
3500	513	766	1.077	1.461			
4000	574	858	1.204	1.628	2.074		
4500	635	949	1.331	1.796	2.288	3.261	
5000	697	1.040	1.458	1.964	2.822	3.569	with CTB
5500	758	1.132	1.585	2.131	3.069	3.877	
6000	819	1.223	1.711	2.588	3.316	4.185	
6500	880	1.315	1.838	2.780	3.563	4.493	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 66% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	40	42					without CTB
3000	45	46	48				
3500	49	51	53	56			
4000	54	55	58	61	62		
4500	58	60	62	65	67	70	
5000	63	64	67	70	72	75	with CTB
5500	54	56	58	60	62	64	
6000	58	59	61	64	65	68	
6500	61	63	65	68	69	72	

Extraction forces and transverse forces

Opal Design II without VarioShade Valance – wall mounting with mounting plate

Type of mount: **1x 660x220x15 mm mounting plate (MP220) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
Total number of installation points:	12	15

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	209	312					without CTB
3000	242	361	507				
3500	275	410	575	779			
4000	307	458	643	868	1.105		
4500	340	507	710	958	1.219	1.736	
5000	373	556	778	1.047	1.504	1.900	with CTB
5500	406	605	846	1.136	1.636	2.065	
6000	439	654	913	1.380	1.767	2.229	
6500	471	703	981	1.483	1.899	2.393	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	48	50					without CTB
3000	53	54	56				
3500	57	59	61	64			
4000	62	63	65	68	70		
4500	66	68	70	73	75	78	
5000	70	72	75	78	79	83	with CTB
5500	61	63	65	67	69	71	
6000	65	66	68	71	72	75	
6500	68	70	72	74	76	79	

Extraction forces and transverse forces

Opal Design II without VarioShade Valance – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
Total number of installation points:	12	15

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	104	156					without CTB
3000	121	180	253				
3500	137	205	287	389			
4000	153	229	321	434	552		
4500	170	253	355	479	609	868	
5000	186	278	389	523	752	950	
5500	203	302	423	568	818	1.032	with CTB
6000	219	327	456	690	883	1.114	
6500	235	351	490	741	949	1.196	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 89% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	56	57					without CTB
3000	60	62	64				
3500	65	66	68	71			
4000	69	71	73	76	77		
4500	73	75	77	80	82	85	
5000	78	80	82	85	87	90	
5500	67	69	71	73	74	77	with CTB
6000	71	72	74	77	78	81	
6500	74	76	78	80	82	85	

Extraction forces

Opal Design II without VarioShade Valance – roof mounting

Type of mount: **1x compact ceiling bracket (bracket (CCB) per arm**

Table valid for all the following bracket assemblies:	2	3
Total number of installation points:	6	9

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	625	906					without CTB
3000	719	1.044	1.446				
3500	812	1.181	1.634	2.196			
4000	906	1.318	1.823	2.444	3.096		
4500	1.000	1.455	2.012	2.692	3.412	4.827	
5000	1.093	1.592	2.200	2.940	4.184	5.279	
5500	1.145	1.686	2.344	3.141	4.498	5.680	with CTB
6000	1.235	1.820	2.529	3.794	4.858	6.129	
6500	1.326	1.954	2.715	4.074	5.218	6.578	

Extraction forces and transverse forces

Opal Design II without VarioShade Valance – front roof mounting

Type of mount: **1x 390 x 160 x 15 mm roof front plate (RP390) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3
Total number of installation points:	8	16

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	445	663					without CTB
3000	514	767	1.078				
3500	584	871	1.222	1.655			
4000	654	975	1.366	1.845	2.348		
4500	724	1.078	1.510	2.035	2.590	3.690	
5000	793	1.182	1.654	2.225	3.196	4.039	with CTB
5500	863	1.286	1.798	2.415	3.476	4.388	
6000	933	1.390	1.942	2.933	3.756	4.737	
6500	1.002	1.494	2.085	3.151	4.035	5.085	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 93% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	64	67					without CTB
3000	71	73	76				
3500	78	80	83	87			
4000	84	87	90	94	97		
4500	91	94	97	101	104	109	
5000	98	100	104	108	111	116	with CTB
5500	72	74	77	80	82	85	
6000	77	79	81	84	86	90	
6500	81	83	86	89	91	94	

Note for front roof mounting:

The specified extraction forces apply to an at least 160 mm thick storey ceiling.

In this case, the fixing material are to be inserted exactly in the middle of the storey ceiling, so that there is an edge distance of at least 80 mm at the top and bottom. With this type of installation, lining is required, e.g. with 150 x 50 mm rectangular pipes. The lower edge of the rectangular pipe must be flush with the lower edge of the storey ceiling.

Shear forces

Opal Design II without VarioShade Valance – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	1.661	2.419					without CTB
3000	1.915	2.791	3.870				
3500	2.169	3.163	4.380	5.881			
4000	2.423	3.535	4.890	6.550	8.288		
4500	2.677	3.906	5.400	7.219	9.137	12.936	
5000	2.932	4.278	5.910	7.889	11.241	14.153	
5500	3.122	4.584	6.352	8.487	12.146	15.293	with CTB
6000	3.371	4.951	6.858	10.282	13.120	16.505	
6500	3.621	5.318	7.363	11.043	14.094	17.717	

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2	3;3;3
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	749	1.059					without CTB
3000	860	1.217	1.657				
3500	971	1.375	1.871	2.483			
4000	1.081	1.534	2.085	2.762	3.467		
4500	1.192	1.692	2.300	3.041	3.819	5.361	
5000	1.303	1.850	2.514	3.320	4.678	5.862	
5500	1.349	1.943	2.661	3.527	5.009	6.286	with CTB
6000	1.456	2.097	2.870	4.259	5.409	6.781	
6500	1.562	2.251	3.080	4.572	5.808	7.277	

Extraction forces and transverse forces

Opal Design II with VarioShade Valance – wall mounting

Type of mount: **1x 150 mm wall bracket (WB150) per arm**

Table valid for all the following bracket assemblies:	2	3
Total number of installation points:	6	9

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.385	1.959				without CTB
3000	1.595	2.254	3.021			
3500	1.804	2.549	3.413	4.426		
4000	2.013	2.844	3.804	4.924	6.092	
4500	2.222	3.139	4.196	5.423	6.709	
5000	2.432	3.434	4.587	5.922	7.967	with CTB
5500	2.641	3.729	4.979	6.421		
6000	2.850	4.024	5.371	7.497		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 66% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	100	103				without CTB
3000	112	115	120			
3500	124	127	132	138		
4000	136	139	144	150	154	
4500	147	151	156	163	167	
5000	159	164	169	175	179	with CTB
5500	115	118	122	126		
6000	123	126	130	134		

Extraction forces and transverse forces

Opal Design II with VarioShade Valance – wall mounting

Type of mount: **1x 300 mm wall bracket (WB300) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	12	15

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	692	979				without CTB
3000	797	1.127	1.510			
3500	902	1.274	1.706	2.213		
4000	1.006	1.422	1.902	2.462	3.046	
4500	1.111	1.569	2.098	2.711	3.354	
5000	1.216	1.717	2.293	2.961	3.983	with CTB
5500	1.320	1.864	2.489	3.210		
6000	1.425	2.012	2.685	3.748		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 66% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	51	53				without CTB
3000	57	59	61			
3500	63	65	68	71		
4000	69	71	74	77	79	
4500	75	77	80	83	85	
5000	81	83	86	89	91	with CTB
5500	70	72	74	77		
6000	75	77	79	82		

Extraction forces and transverse forces

Opal Design II with VarioShade Valance – wall mounting with mounting plate

Type of mount: **1x 660x220x15 mm mounting plate (MP220) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
Total number of installation points:	12	15

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	370	523				without CTB
3000	426	602	805			
3500	482	680	910	1.179		
4000	538	759	1.014	1.312	1.622	
4500	594	838	1.119	1.445	1.786	
5000	650	917	1.223	1.577	2.121	with CTB
5500	706	995	1.327	1.710		
6000	762	1.074	1.432	1.997		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	59	61				without CTB
3000	65	67	69			
3500	71	73	75	78		
4000	77	79	81	85	87	
4500	83	85	88	91	93	
5000	89	91	94	97	99	with CTB
5500	77	79	81	84		
6000	82	84	86	89		

Extraction forces and transverse forces

Opal Design II with VarioShade Valance – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2	2;3;1
Total number of installation points:	12	15

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	185	261				without CTB
3000	213	301	402			
3500	241	340	455	589		
4000	269	379	507	656	811	
4500	297	419	559	722	893	
5000	325	458	611	788	1.060	with CTB
5500	353	497	663	855		
6000	381	537	716	998		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 89% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	67	68				without CTB
3000	73	74	77			
3500	79	80	83	86		
4000	84	86	89	92	94	
4500	90	92	95	98	100	
5000	96	98	101	104	106	with CTB
5500	83	85	87	90		
6000	88	90	92	95		

Extraction forces

Opal Design II with VarioShade Valance – roof mounting

Type of mount: **1x compact ceiling bracket (CCB) per arm**

Table valid for all the following bracket assemblies:	2	3
Total number of installation points:	6	9

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.072	1.493				without CTB
3000	1.230	1.713	2.276			
3500	1.388	1.934	2.567	3.312		
4000	1.546	2.154	2.858	3.681	4.540	
4500	1.704	2.375	3.149	4.051	4.996	
5000	1.862	2.595	3.440	4.420	5.908	with CTB
5500	1.964	2.759	3.672	4.729		
6000	2.118	2.975	3.959	5.502		

Extraction forces and transverse forces

Opal Design II with VarioShade Valance – front roof mounting

Type of mount: **1x 390 x 160 x 15 mm roof front plate (DS390) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3
Total number of installation points:	8	16

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	788	1.112				without CTB
3000	907	1.279	1.712			
3500	1.025	1.446	1.934	2.506		
4000	1.144	1.614	2.156	2.788	3.446	
4500	1.263	1.781	2.378	3.070	3.795	
5000	1.382	1.949	2.599	3.353	4.508	with CTB
5500	1.501	2.116	2.821	3.635		
6000	1.620	2.283	3.043	4.245		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 93% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	81	83				without CTB
3000	90	92	96			
3500	99	101	105	110		
4000	108	110	114	119	122	
4500	117	120	123	128	131	
5000	125	129	132	137	140	with CTB
5500	92	95	97	101		
6000	98	101	103	107		

Note for front roof mounting:

The specified extraction forces apply to an at least 160 mm thick storey ceiling.

In this case, the fixing material are to be inserted exactly in the middle of the storey ceiling, so that there is an edge distance of at least 80 mm at the top and bottom. With this type of installation, lining is required, e.g. with 150 x 50 mm rectangular pipes. The lower edge of the rectangular pipe must be flush with the lower edge of the storey ceiling.

Shear forces

Opal Design II with VarioShade Valance – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2	3;3
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	2.877	3.998				without CTB
3000	3.306	4.594	6.093			
3500	3.734	5.190	6.877	8.855		
4000	4.163	5.786	7.660	9.847	12.121	
4500	4.592	6.381	8.444	10.839	13.343	
5000	5.020	6.977	9.227	11.832	15.819	with CTB
5500	5.365	7.487	9.922	12.732		
6000	5.788	8.076	10.699	14.849		

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2	3;3;3
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.260	1.717				without CTB
3000	1.444	1.969	2.579			
3500	1.628	2.220	2.906	3.712		
4000	1.812	2.472	3.234	4.124	5.047	
4500	1.996	2.724	3.562	4.536	5.552	
5000	2.180	2.975	3.890	4.948	6.564	with CTB
5500	2.281	3.141	4.129	5.269		
6000	2.459	3.386	4.450	6.132		

02 Cassette-awnings Semina Life

Selection of brackets

Wall mounting	171
Wall mounting with mounting plate	173
Roof mounting	175
Rafter mounting	177

Selection of brackets

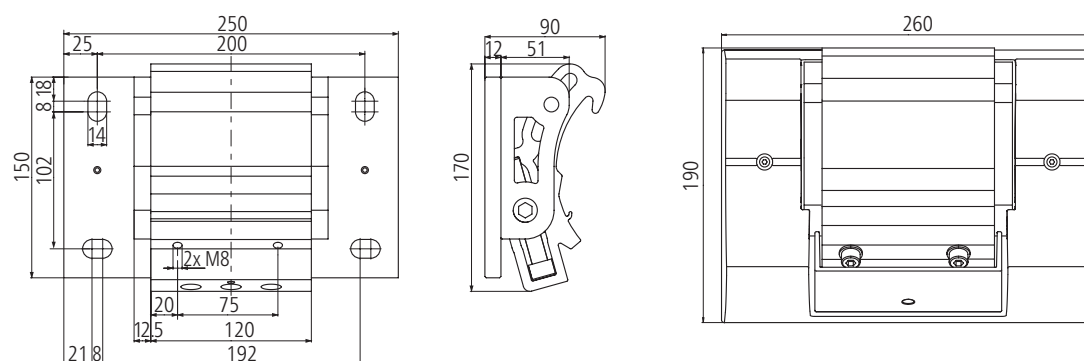
Semina Life – wall mounting

Bracket module consisting of:
250 mm wall bracket; item no. 118942

Notes on this bracket assembly:
1x 250 mm wall bracket (WB250)
1 bracket per arm
2 top installation points, distance between centre lines 200 mm
4 installation points in total



Corresponding centre bracket assembly:
250 mm centre bracket (CTB250); item no. 118963



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2	2x WB250	without CTB	2x 118942
2;1	2x WB250, 1x CTB250	with CTB	2x 118942 + 1x 118963

Selection of brackets

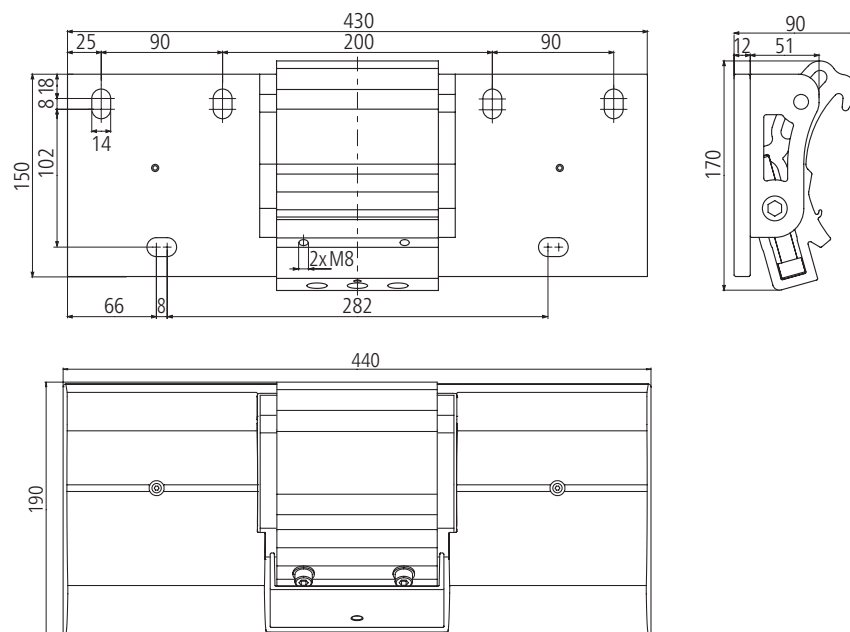
Semina Life – wall mounting

Bracket module consisting of:
430 mm wall bracket; item no. 118949

Notes on this bracket assembly:
1x 430 mm wall bracket (WB430)
1 bracket per arm
4 top installation points, distance between centre lines 90/200/90 mm
6 installation points in total



Corresponding centre bracket assembly:
250 mm centre bracket (CTB250); item no. 118963



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2	2x WB430	without CTB	2x 118949
2;1	2x WB430, 1x CTB250	with CTB	2x 118949 + 1x 118963

Selection of brackets

Semina Life – wall mounting with mounting plate

Bracket module consisting of:

660 x 220 x 15 mm mounting plate with:
- 1x 250 mm wall bracket; item no. 119030

Notes on this bracket assembly:

1x 660 x 220 x 15 mm mounting plate (MP220)

incl. 1x 250 mm wall bracket (WB250)

1 mounting plate per arm

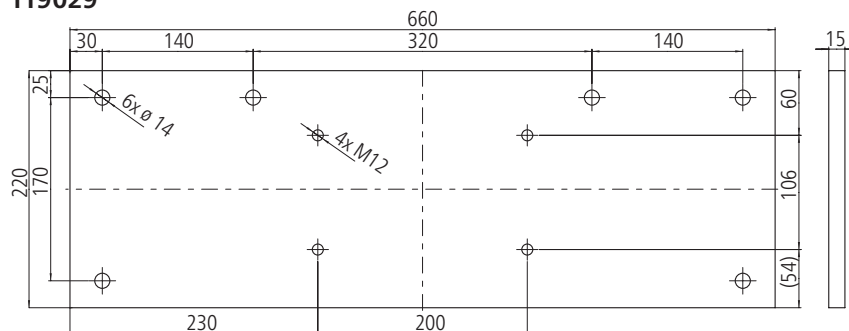
4 top installation points, distance between centre lines 140/320/140 mm

6 installation points in total



Corresponding centre bracket assembly:

370 x 220 x 15 mm mounting plate (BP370) including 1x 250 mm centre bracket (CTB250); item no. 119029



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2	2x MP220, 2x WB250	without CTB	2x 119030
2;2;1;1	2x MP220, 2x WB250, 1x BP370, 1x CTB250	with CTB	2x 119030 + 1x 119029

Selection of brackets

Semina Life – wall mounting with mounting plate

Bracket module consisting of:

660 x 390 x 15 mm mounting plate with:
- 1x 250 mm wall bracket; item no. 119024

Notes on this bracket assembly:

1x 660 x 390 x 15 mm mounting plate (MP390)

incl. 1x 250 mm wall bracket (WB250)

1 mounting plate per arm

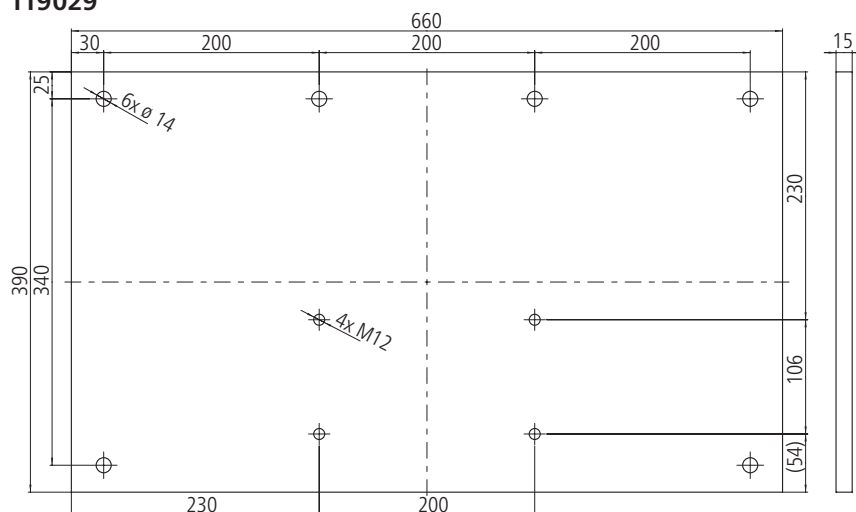
4 top installation points, distance between centre lines 200 mm

6 installation points in total



Corresponding centre bracket assembly:

370 x 220 x 15 mm mounting plate (UP370) including 1x 250 mm centre bracket (CTB250); item no. 119029



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2	2x MP390, 2x WB250	without CTB	2x 119024
2;2;1;1	2x MP390, 2x WB250, 1x UP370, 1x CTB250	with CTB	2x 119024 + 1x 119029

Selection of brackets

Semina Life – roof mounting

Bracket module consisting of:

Ceiling bracket with:

- 250 mm wall bracket; item no. 119006

Notes on this bracket assembly:

1x ceiling bracket (CB)

incl. 1x 250 mm wall bracket (WB250)

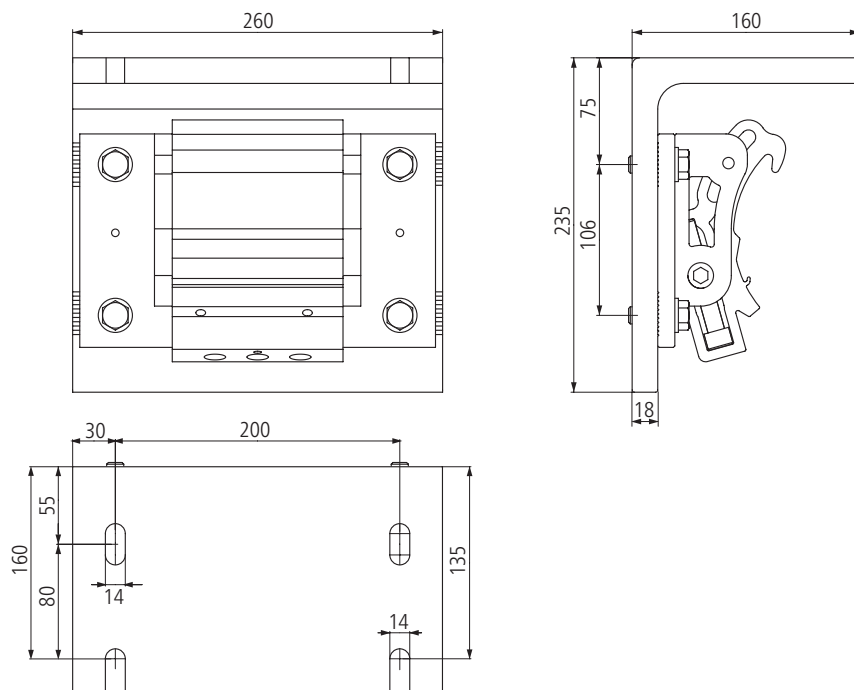
2 front installation points, distance between centre lines 200 mm

4 installation points in total



Corresponding centre bracket assembly:

Ceiling bracket (CB) including 1x 250 mm centre bracket (CTB250); item no. 119009



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2	2x CB, 2x WB250	without CTB	2x 119006
3;2;1	3x CB, 2x WB250, 1x CTB250	with CTB	2x 119006 + 1x 119009

Selection of brackets

Semina Life – front roof mounting

Bracket module consisting of:

540 x 220 x 15 mm roof front plate with:
- 1x 250 mm wall bracket; item no. 119021

Notes on this bracket assembly:

1x 540 x 220 x 15 mm roof front plate (RP540)

incl. 1x 250 mm wall bracket (WB250)

1 roof front plate per arm

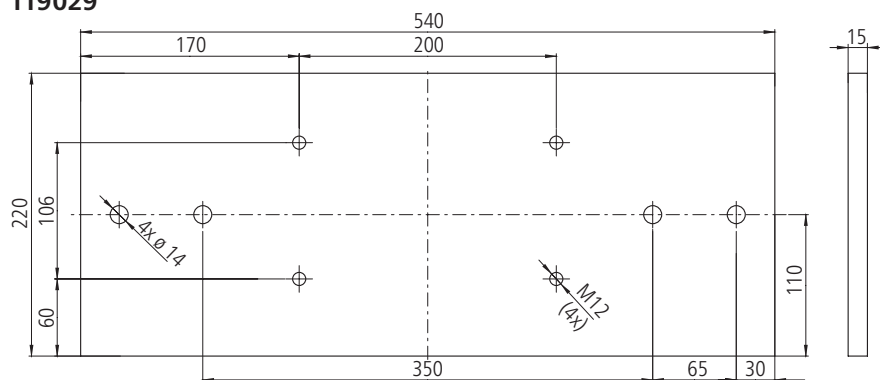
4 installation points, distance between centre lines 65/350/65 mm

4 installation points in total



Corresponding centre bracket assembly:

370 x 220 x 15 mm mounting plate (BP370) including 1x 250 mm centre bracket (CTB250); item no. 119029



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2	2x RP540, 2x WB250	without CTB	2x 119021
2;2;1;1	2x RP540, 2x WB250, 1x BP370, 1x CTB250	with CTB	2x 119021 + 1x 119029

Selection of brackets

Semina Life – rafter mounting

Bracket module consisting of:

Rafter bracket, 260 x 190 x 15 mm adaptor plate, mounting plate with:
- 250 mm wall bracket; item no. 119013

Notes on this bracket assembly:

1x rafter bracket (RB) and mounting plate (MP)

incl. 260 x 190 x 15 mm adaptor plate (AP)

incl. 1x 250 mm wall bracket (WB250)

1 bracket per arm

1 front installation point

2 installation points in total

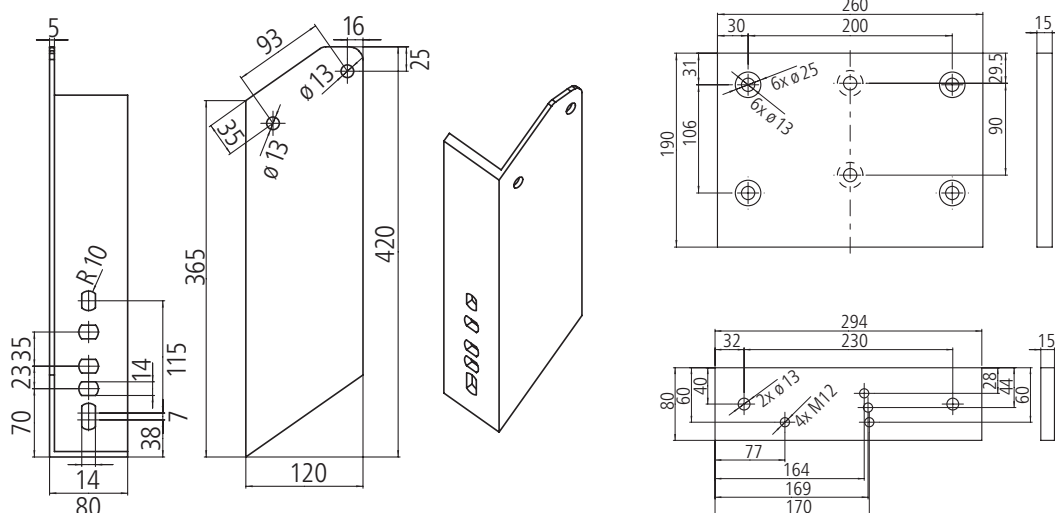
One left and right version each



Corresponding centre bracket assembly:

Rafter bracket (RB), 260 x 190 x 15 mm adaptor plate (AP) and mounting plate (MP)

incl. 1x 250 mm centre bracket (CTB250); item no. 119018



Information for ordering brackets

Number	Scope of delivery	Note	Item number for order
2;2;2;2	2x RB, 2x AP, 2x MP, 2x WB250	without CTB	2x 119013
3;3;3;2;1	3x RB, 3x AP, 3x MP, 2x WB250, 1x CTB250	with CTB	2x 119013 + 1x 119018

02 Cassette-awnings

Semina Life

Extraction forces and transverse forces

Semina Life without VarioShade Valance	180
Semina Life with VarioShade Valance	187



Yellow area means limiting size

Extraction forces and transverse forces

Semina Life without VarioShade Valance – wall mounting

Type of mount: **1x 250 mm wall bracket (WB250) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	8	12

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	666	995					without CTB
3000	769	1.150	1.619				
3500	873	1.305	1.834	2.487			
4000	976	1.459	2.049	2.771	3.529		
4500	1.080	1.614	2.264	3.055	3.892	5.545	
5000	1.183	1.768	2.478	3.340	4.798	6.068	
5500	1.286	1.923	2.693	3.624	5.217	6.591	with CTB
6000	1.390	2.078	2.908	4.397	5.636	7.113	
6500	1.493	2.232	3.123	4.723	6.055	7.636	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 83% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	63	66					without CTB
3000	69	72	75				
3500	75	78	81	85			
4000	81	84	87	91	94		
4500	87	90	93	97	100	105	
5000	93	96	99	104	106	111	
5500	99	102	105	110	113	118	with CTB
6000	74	76	78	81	83	87	
6500	78	80	82	85	87	91	

Extraction forces and transverse forces

Semina Life without VarioShade Valance – wall mounting

Type of mount: **1x 430 mm wall bracket (WB430) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	12	16

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	333	497					without CTB
3000	384	575	809				
3500	436	652	917	1.243			
4000	488	729	1.024	1.385	1.764		
4500	540	807	1.132	1.527	1.946	2.772	
5000	591	884	1.239	1.670	2.399	3.034	
5500	643	961	1.346	1.812	2.608	3.295	with CTB
6000	695	1.039	1.454	2.198	2.818	3.556	
6500	746	1.116	1.561	2.361	3.027	3.818	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 83% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	44	46					without CTB
3000	48	50	52				
3500	52	54	56	59			
4000	56	58	60	63	65		
4500	60	62	64	67	69	72	
5000	64	66	68	71	73	76	
5500	68	70	72	75	77	81	with CTB
6000	57	58	60	63	64	67	
6500	60	61	63	66	67	70	

Extraction forces and transverse forces

Semina Life without VarioShade Valance – wall mounting with mounting plate

Type of mount: **1x 660x220x15 mm mounting plate (MP220) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	16

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	210	313					without CTB
3000	242	362	509				
3500	275	410	576	781			
4000	308	459	644	870	1.107		
4500	340	508	711	959	1.221	1.739	
5000	373	556	779	1.048	1.505	1.903	
5500	406	605	846	1.138	1.637	2.067	with CTB
6000	438	654	914	1.381	1.768	2.231	
6500	471	702	981	1.483	1.900	2.394	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	52	53					without CTB
3000	56	57	59				
3500	60	61	63	66			
4000	64	65	67	70	72		
4500	68	69	71	74	76	79	
5000	71	73	76	79	80	84	
5500	75	77	80	83	85	88	with CTB
6000	65	66	68	70	72	74	
6500	67	69	71	73	75	77	

Extraction forces and transverse forces

Semina Life without VarioShade Valance – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	16

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	105	156					without CTB
3000	121	181	254				
3500	137	205	288	390			
4000	154	229	322	435	553		
4500	170	254	355	479	610	869	
5000	186	278	389	524	752	951	
5500	203	302	423	569	818	1.033	with CTB
6000	219	327	457	690	884	1.115	
6500	235	351	490	741	950	1.197	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 89% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	59	61					without CTB
3000	63	65	67				
3500	67	69	71	74			
4000	71	73	75	78	79		
4500	75	77	79	82	84	87	
5000	79	81	83	86	88	91	
5500	83	85	87	90	92	95	with CTB
6000	70	71	73	76	77	80	
6500	73	74	76	79	80	83	

Extraction forces

Semina Life without VarioShade Valance – roof mounting

Type of mount: **1x ceiling bracket (CB) per arm**

Table valid for all the following bracket assemblies:	2;2	3;2;1
Total number of installation points:	8	12

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	623	901					without CTB
3000	714	1.035	1.432				
3500	806	1.170	1.616	2.168			
4000	897	1.304	1.801	2.411	3.051		
4500	988	1.438	1.986	2.655	3.360	4.752	
5000	1.079	1.572	2.170	2.898	4.122	5.195	
5500	1.170	1.706	2.355	3.141	4.478	5.638	with CTB
6000	1.230	1.808	2.507	3.755	4.798	6.044	
6500	1.320	1.940	2.689	4.031	5.152	6.485	

Extraction forces and transverse forces

Semina Life without VarioShade Valance – front roof mounting

Type of mount: **1x 540x220x15 mm roof front plate (RP540) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	8	10

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	446	666					without CTB
3000	516	769	1.082				
3500	585	873	1.225	1.660			
4000	654	976	1.369	1.849	2.353		
4500	724	1.079	1.512	2.039	2.595	3.696	
5000	793	1.183	1.656	2.229	3.200	4.044	
5500	862	1.286	1.799	2.418	3.479	4.392	with CTB
6000	932	1.390	1.943	2.935	3.758	4.740	
6500	1.001	1.493	2.086	3.152	4.037	5.089	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 93% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	75	77					without CTB
3000	81	83	86				
3500	87	89	92	96			
4000	92	95	98	103	105		
4500	98	101	104	109	111	116	
5000	104	107	110	115	118	123	
5500	110	113	117	121	124	129	with CTB
6000	101	103	106	110	112	116	
6500	106	108	111	115	117	121	

Note for front roof mounting:

The specified extraction forces apply to an at least 160 mm thick storey ceiling.

In this case, the fixing material are to be inserted exactly in the middle of the storey ceiling, so that there is an edge distance of at least 80 mm at the top and bottom. With this type of installation, lining is required, e.g. with 150 x 50 mm rectangular pipes. The lower edge of the rectangular pipe must be flush with the lower edge of the storey ceiling.

Shear forces

Semina Life without VarioShade Valance – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2;2	3;3;2;1
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	1.762	2.540					without CTB
3000	2.024	2.923	4.026				
3500	2.287	3.305	4.549	6.082			
4000	2.549	3.688	5.073	6.767	8.531		
4500	2.812	4.070	5.596	7.452	9.399	13.272	
5000	3.074	4.453	6.120	8.137	11.556	14.514	
5500	3.337	4.836	6.643	8.822	12.556	15.755	with CTB
6000	3.537	5.154	7.100	10.604	13.485	16.922	
6500	3.796	5.533	7.620	11.384	14.482	18.160	

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2;2	3;3;3;2;1
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]						Miscellaneous
	1500	2000	2500	3000	3500	4000	Limiting size
2500	802	1.119					without CTB
3000	915	1.281	1.731				
3500	1.028	1.443	1.950	2.574			
4000	1.142	1.605	2.169	2.859	3.576		
4500	1.255	1.767	2.388	3.143	3.934	5.506	
5000	1.368	1.929	2.607	3.428	4.813	6.015	
5500	1.481	2.091	2.826	3.712	5.225	6.525	with CTB
6000	1.532	2.188	2.978	4.398	5.566	6.960	
6500	1.642	2.346	3.193	4.719	5.974	7.465	

Extraction forces and transverse forces

Semina Life with VarioShade Valance – wall mounting

Type of mount: **1x 250 mm wall bracket (WB250) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	8	12

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.178	1.666				without CTB
3000	1.355	1.916	2.568			
3500	1.532	2.166	2.900	3.762		
4000	1.709	2.416	3.232	4.185	5.177	
4500	1.886	2.666	3.564	4.608	5.701	
5000	2.063	2.916	3.896	5.031	6.768	
5500	2.241	3.166	4.228	5.454	7.347	with CTB
6000	2.418	3.416	4.560	6.366	7.926	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 83% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	80	82				without CTB
3000	88	91	94			
3500	96	99	102	107		
4000	104	107	111	116	119	
4500	113	116	119	124	127	
5000	121	124	128	133	136	
5500	129	132	136	141	144	with CTB
6000	95	98	100	104	106	

Extraction forces and transverse forces

Semina Life with VarioShade Valance – wall mounting

Type of mount: **1x 430 mm wall bracket (WB430) per arm**

Table valid for all the following bracket assemblies:	2	2;1
Total number of installation points:	12	16

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	589	833				without CTB
3000	677	958	1.284			
3500	766	1.083	1.450	1.881		
4000	854	1.208	1.616	2.092	2.588	
4500	943	1.333	1.782	2.304	2.850	
5000	1.031	1.458	1.948	2.515	3.384	
5500	1.120	1.583	2.114	2.727	3.673	with CTB
6000	1.209	1.708	2.280	3.183	3.963	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 83% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	55	57				without CTB
3000	61	63	65			
3500	66	68	70	74		
4000	72	74	76	79	81	
4500	77	79	82	85	87	
5000	83	85	87	91	93	
5500	88	90	93	96	98	with CTB
6000	73	75	77	79	81	

Extraction forces and transverse forces

Semina Life with VarioShade Valance – wall mounting with mounting plate

Type of mount: **1x 660x220x15 mm mounting plate (MP220) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	16

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	371	524				without CTB
3000	427	602	806			
3500	482	681	911	1.180		
4000	538	759	1.015	1.313	1.623	
4500	594	838	1.119	1.446	1.787	
5000	650	917	1.223	1.578	2.122	
5500	706	995	1.328	1.711	2.304	with CTB
6000	761	1.074	1.432	1.998	2.485	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	63	64				without CTB
3000	68	70	72			
3500	74	75	78	81		
4000	79	81	83	87	88	
4500	85	87	89	92	94	
5000	90	92	95	98	100	
5500	96	98	100	104	106	with CTB
6000	81	82	84	87	89	

Extraction forces and transverse forces

Semina Life with VarioShade Valance – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	12	16

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	185	262				without CTB
3000	213	301	403			
3500	241	340	455	590		
4000	269	379	507	656	811	
4500	297	419	559	723	893	
5000	325	458	611	789	1.061	
5500	353	497	664	855	1.152	with CTB
6000	380	537	716	999	1.242	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 88% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	70	72				without CTB
3000	75	77	80			
3500	81	83	85	88		
4000	86	88	91	94	96	
4500	92	94	96	100	102	
5000	97	99	102	105	107	
5500	103	105	108	111	113	with CTB
6000	86	88	90	92	94	

Extraction forces

Semina Life with VarioShade Valance – roof mounting

Type of mount: **1x ceiling bracket (CB) per arm**

Table valid for all the following bracket assemblies:	2;2	3;2;1
Total number of installation points:	8	12

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.064	1.477				without CTB
3000	1.219	1.693	2.245			
3500	1.373	1.909	2.530	3.259		
4000	1.528	2.124	2.815	3.621	4.459	
4500	1.683	2.340	3.099	3.982	4.906	
5000	1.837	2.556	3.384	4.344	5.805	
5500	1.992	2.772	3.669	4.706	6.297	with CTB
6000	2.105	2.945	3.910	5.428	6.743	

Extraction forces and transverse forces

Semina Life with VarioShade Valance – front roof mounting

Type of mount: **1x 540x220x15 mm roof front plate (DS540) per arm**

Table valid for all the following bracket assemblies:	2;2	2;2;1;1
Total number of installation points:	8	10

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	788	1.113				without CTB
3000	907	1.280	1.714			
3500	1.026	1.447	1.936	2.509		
4000	1.144	1.614	2.157	2.791	3.450	
4500	1.263	1.781	2.379	3.073	3.798	
5000	1.381	1.948	2.600	3.355	4.510	
5500	1.500	2.115	2.822	3.637	4.896	with CTB
6000	1.619	2.282	3.043	4.245	5.282	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 93% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	91	94				without CTB
3000	99	102	105			
3500	107	110	114	118		
4000	116	119	122	127	130	
4500	124	127	131	135	138	
5000	132	135	139	144	147	
5500	140	144	147	152	156	with CTB
6000	127	130	133	137	139	

Note for front ceiling mounting:

The specified extraction forces apply to an at least 160 mm thick storey ceiling.

In this case, the fixing material are to be inserted exactly in the middle of the storey ceiling, so that there is an edge distance of at least 80 mm at the top and bottom. With this type of installation, lining is required, e.g. with 150 x 50 mm rectangular pipes. The lower edge of the rectangular pipe must be flush with the lower edge of the storey ceiling.

Shear forces

Semina Life with VarioShade Valance – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2;2	3;3;2;1
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	3.018	4.159				without CTB
3000	3.461	4.772	6.296			
3500	3.904	5.384	7.099	9.109		
4000	4.347	5.997	7.901	10.123	12.424	
4500	4.790	6.610	8.704	11.137	13.670	
5000	5.233	7.222	9.507	12.151	16.205	
5500	5.676	7.835	10.310	13.165	17.584	with CTB
6000	6.036	8.362	11.025	15.253	18.869	

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2;2	3;3;3;2;1
Total number of installation points:	4	6

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	1.329	1.794				without CTB
3000	1.518	2.052	2.672			
3500	1.707	2.309	3.006	3.825		
4000	1.896	2.567	3.341	4.245	5.179	
4500	2.085	2.824	3.676	4.665	5.693	
5000	2.274	3.082	4.010	5.085	6.728	
5500	2.463	3.340	4.345	5.505	7.296	with CTB
6000	2.568	3.511	4.591	6.305	7.770	

02 Cassette-awnings Smaila

Selection of brackets

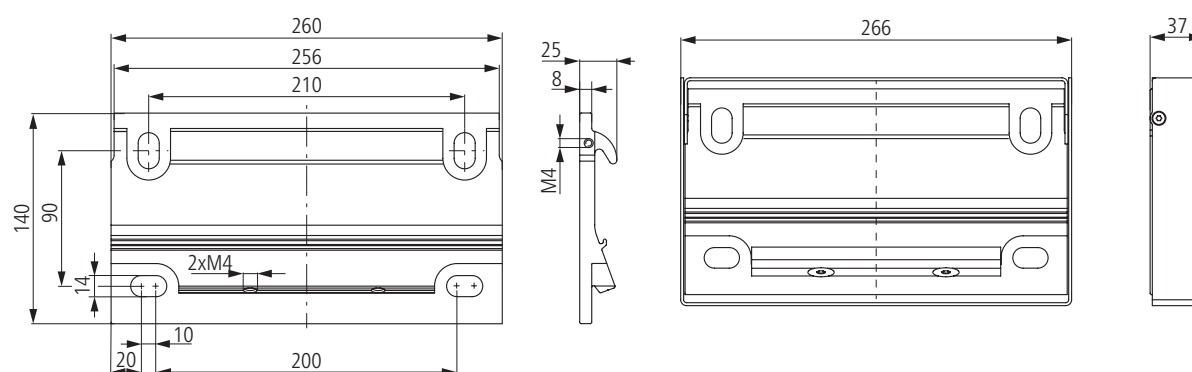
Wall mounting	195
Wall mounting with mounting plate	196
Roof mounting	198
Rafter mounting	200

Selection of brackets

Smaila – wall mounting

Bracket module consisting of:
270 mm wall bracket; item no. 128524

Notes on this bracket assembly:
1x 270 mm wall bracket (WB270)
1 bracket per arm
2 top installation points, distance between centre lines 210 mm
4 installation points in total



Information for ordering brackets

Number	Scope of delivery	Item number for order
2	2x WB270	2x 128524

Selection of brackets

Smaila – wall mounting with mounting plate

Bracket module consisting of:

660x390x15 mm mounting plate with:
- 1x 270 mm wall bracket; item no. 128779

Notes on this bracket assembly:

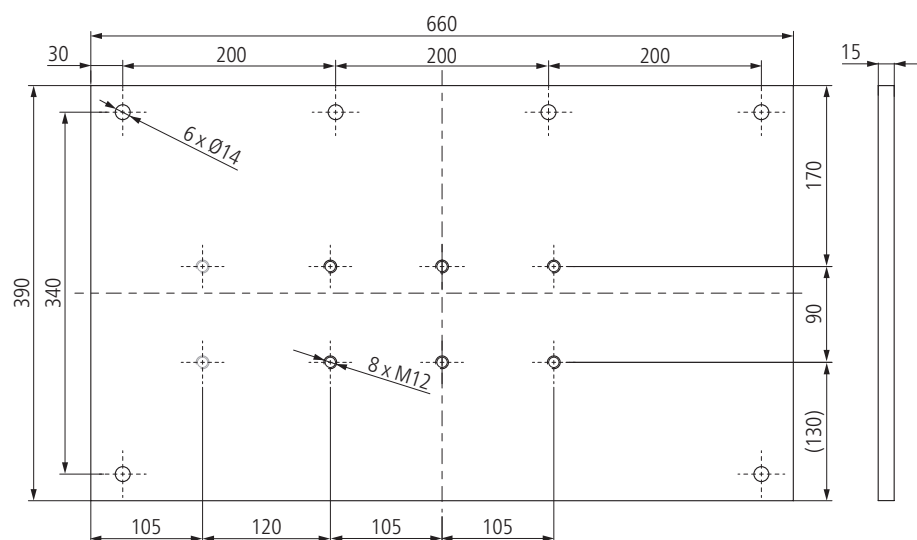
1x 660x390x15 mm mounting plate (MP390)

incl. 1x 270 mm wall bracket (WB270)

1 mounting plate per arm

4 top installation points, distance between centre lines 200 mm

6 installation points in total



Information for ordering brackets

Number	Scope of delivery	Item number for order
2;2	2x MP390, 2x WB270	2x 128779

Selection of brackets

Smaila – roof mounting

Bracket module consisting of:

190 mm ceiling bracket; item no. 128528

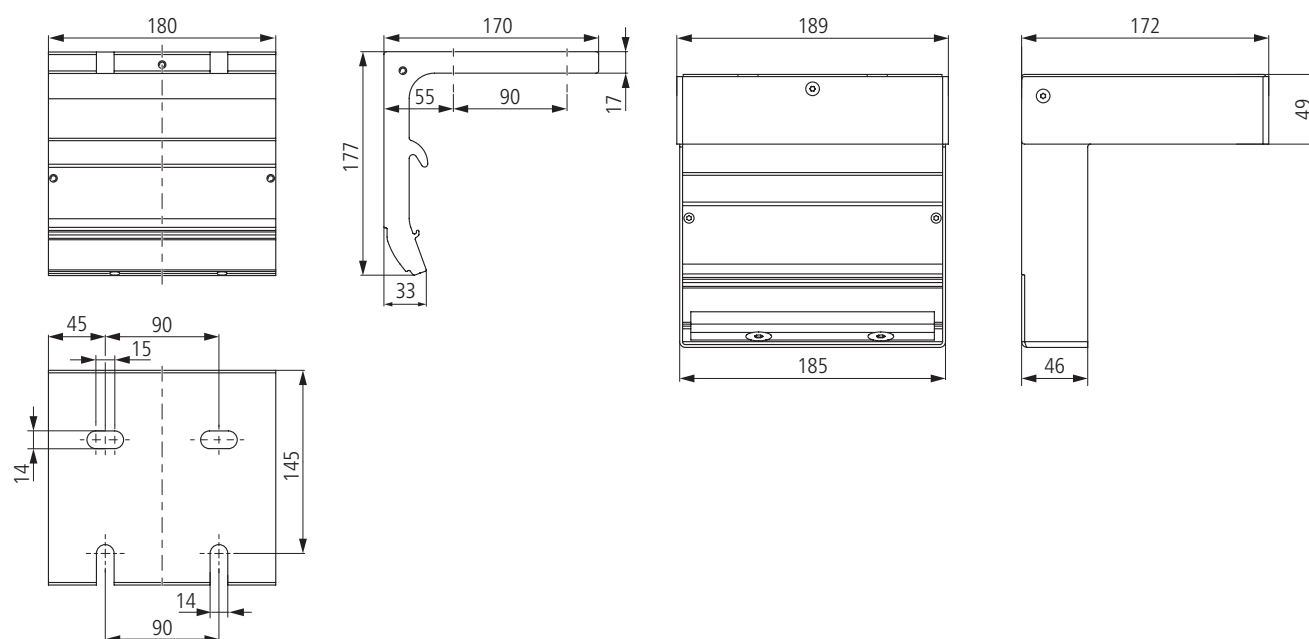
Notes on this bracket assembly:

1x 190 mm ceiling bracket (CB190)

1x bracket per arm

2 front installation points, distance between centre lines 90 mm

4 installation points in total



Information for ordering brackets

Number	Scope of delivery	Item number for order
2	2x CB190	2x 128528

Selection of brackets

Smaila – rafter mounting

Bracket module consisting of:

Rafter bracket and 255 x 160 x 20 mm adaptor plate with:
- 270 mm wall bracket; item no. 128792

Notes on this bracket assembly:

1x rafter bracket (RB)

incl. 255 x 160 x 20 mm adaptor plate (AP)

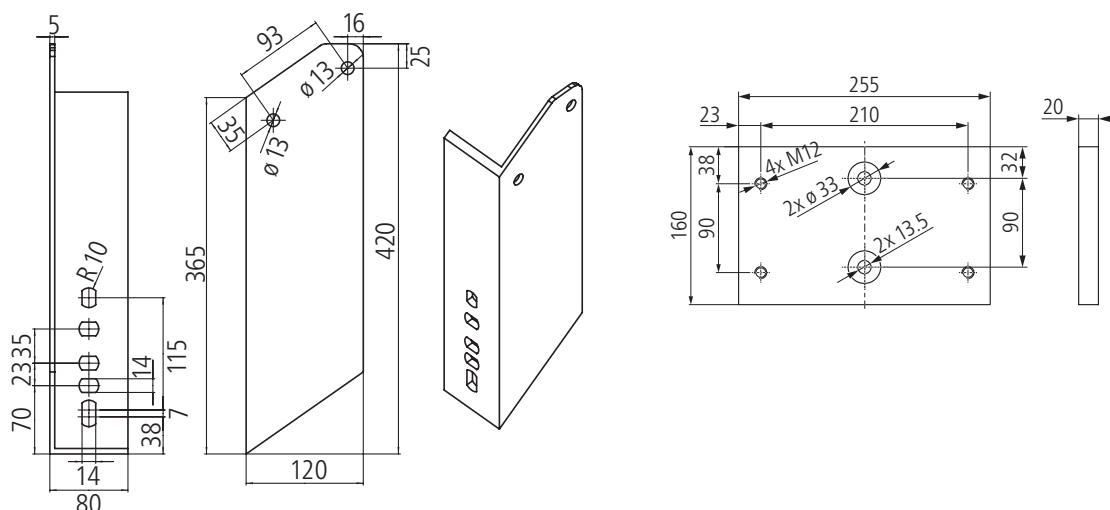
incl. 1x 270 mm wall bracket (WB270)

1 bracket per arm

1 front installation point

2 installation points in total

One left and right version each



Information for ordering brackets

Number	Scope of delivery	Item number for order
2;2;2	2x RB, 2x AP, 2x WB270	2x 128792

Selection of brackets

Smaila – rafter mounting

Bracket module consisting of:

**Dachsparrenhalter, Adapterplatte 255 x 160 x 20 mm, Montageplatte mit:
- 270 mm wall bracket; item no. 128793**

Notes on this bracket assembly:

1x rafter bracket (RB) and mounting plate (MP)

incl. 255 x 160 x 20 mm adaptor plate (AP)

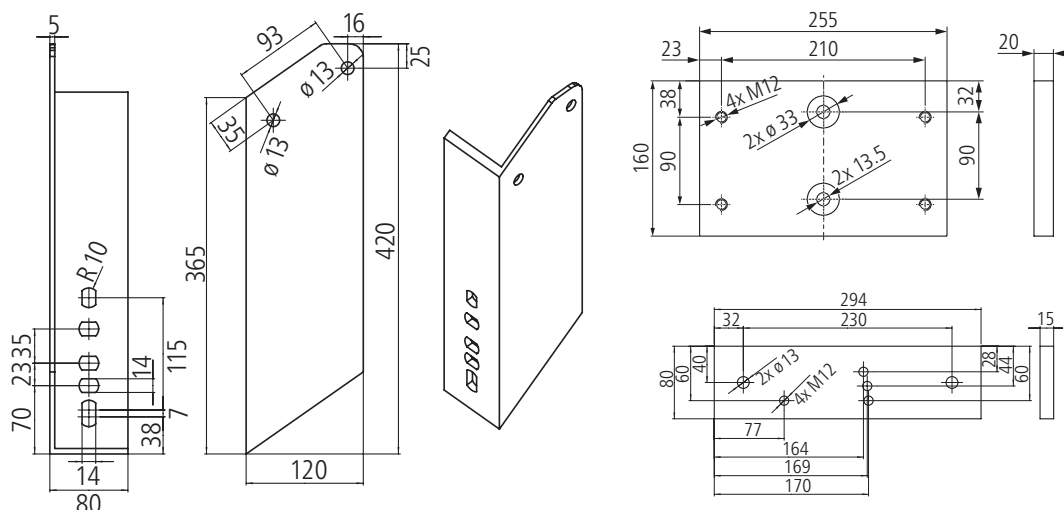
incl. 1x 270 mm wall bracket (WB270)

1 bracket per arm

1 front installation point

2 installation points in total

One left and right version each



Information for ordering brackets

Number	Scope of delivery	Item number for order
2;2;2;2	2x RB, 2x AP, 2x WB270, 2x MP	2x 128793

02 Cassette-awnings Smaila

Extraction forces and transverse forces

Smaila without VarioShade Valance	203
Smaila with VarioShade Valance	209



Yellow area means limiting size

Extraction forces and transverse forces

Smaila without VarioShade Valance – wall mounting

Type of mount: **1x 270 mm wall bracket (WB270) per arm**

Table valid for all the following bracket assemblies:	2
Total number of installation points:	8

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1.500	2.000	2.500	3.000	3.500	Limited size
2.500	832	1.235				without CTB
3.000	957	1.421	1.989			
3.500	1.082	1.607	2.246	3.032		
4.000	1.207	1.793	2.504	3.372	4.283	
4.500	1.332	1.979	2.762	3.712	4.716	
5.000	1.457	2.165	3.020	4.052	5.795	
5.500	1.582	2.351	3.277	4.393		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 79% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1.500	2.000	2.500	3.000	3.500	Limited size
2.500	58	60				without CTB
3.000	64	67	70			
3.500	70	73	76	80		
4.000	77	79	82	87	89	
4.500	83	86	89	93	96	
5.000	89	92	95	100	103	
5.500	95	98	102	106		

Extraction forces and transverse forces

Smaila without VarioShade Valance – wall mounting with mounting plate

Type of mount: **1x 660x220x15 mm mounting plate (MP220) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	12

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1.500	2.000	2.500	3.000	3.500	Limited size
2.500	223	330				without CTB
3.000	256	379	531			
3.500	289	429	599	808		
4.000	323	479	668	899	1.141	
4.500	356	529	737	989	1.256	
5.000	390	578	806	1.080	1.544	
5.500	423	628	874	1.171		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 84% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1.500	2.000	2.500	3.000	3.500	Limited size
2.500	48	50				without CTB
3.000	52	54	56			
3.500	57	58	60	63		
4.000	61	62	65	68	69	
4.500	65	67	69	72	74	
5.000	69	71	73	76	78	
5.500	73	75	77	81		

Extraction forces and transverse forces

Smaila without VarioShade Valance – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	12

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1.500	2.000	2.500	3.000	3.500	Limited size
2.500	111	165				without CTB
3.000	128	189	265			
3.500	144	214	299	404		
4.000	161	239	334	449	570	
4.500	178	264	368	494	628	
5.000	195	289	403	540	772	
5.500	211	314	437	585		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 88% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1.500	2.000	2.500	3.000	3.500	Limited size
2.500	56	57				without CTB
3.000	60	61	63			
3.500	64	66	68	71		
4.000	68	70	72	75	77	
4.500	72	74	76	79	81	
5.000	76	78	81	84	85	
5.500	81	83	85	88		

Extraction forces

Smaila without VarioShade Valance – roof mounting

Type of mount: **1x 190 mm ceiling bracket (CB190) per arm**

Table valid for all the following bracket assemblies:	2
Total number of installation points:	8

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1.500	2.000	2.500	3.000	3.500	Limited size
2.500	598	861				without CTB
3.000	684	986	1.358			
3.500	770	1.112	1.530	2.046		
4.000	855	1.237	1.702	2.272	2.870	
4.500	941	1.362	1.874	2.497	3.157	
5.000	1.027	1.487	2.046	2.723	3.854	
5.500	1.113	1.613	2.218	2.949		

Extraction forces and transverse forces

Smaila without VarioShade Valance – front roof mounting

Type of mount: **1x 510 x 160 x 15 mm roof front plate (DS510) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	8

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	474	702				without CTB
3000	545	807	1.128			
3500	616	913	1.275	1.718		
4000	687	1.019	1.421	1.911	2.425	
4500	759	1.124	1.567	2.104	2.671	
5000	830	1.230	1.713	2.296	3.282	
5500	901	1.336	1.859	2.489		

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 92% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1500	2000	2500	3000	3500	Limiting size
2500	70	72				without CTB
3000	76	79	82			
3500	83	85	88	93		
4000	89	92	95	99	102	
4500	95	98	101	106	108	
5000	101	104	108	112	115	
5500	108	111	114	119		

Note for front ceiling mounting:

The specified extraction forces apply to an at least 160 mm thick storey ceiling.

In this case, the fixing material are to be inserted exactly in the middle of the storey ceiling, so that there is an edge distance of at least 80 mm at the top and bottom. With this type of installation, lining is required, e.g. with 150 x 50 mm rectangular pipes. The lower edge of the rectangular pipe must be flush with the lower edge of the storey ceiling.

Shear forces

Smaila without VarioShade Valance – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2;2
Total number of installation points:	4

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1.500	2.000	2.500	3.000	3.500	Limited size
2.500	1.801	2.596				without CTB
3.000	2.063	2.978	4.097			
3.500	2.325	3.360	4.620	6.166		
4.000	2.587	3.742	5.143	6.850	8.635	
4.500	2.849	4.124	5.665	7.534	9.501	
5.000	3.111	4.506	6.188	8.218	11.641	
5.500	3.373	4.888	6.710	8.902		

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2;2
Total number of installation points:	4

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]					Miscellaneous
	1.500	2.000	2.500	3.000	3.500	Limited size
2.500	815	1.139				without CTB
3.000	928	1.301	1.757			
3.500	1.041	1.463	1.976	2.606		
4.000	1.155	1.625	2.195	2.891	3.615	
4.500	1.268	1.787	2.414	3.175	3.973	
5.000	1.382	1.949	2.633	3.460	4.847	
5.500	1.495	2.111	2.852	3.744		

Extraction forces and transverse forces

Smaila with VarioShade Valance – wall mounting

Type of mount: **1x 270 mm wall bracket (WB270) per arm**

Table valid for all the following bracket assemblies:	2
Total number of installation points:	8

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1.500	2.000	2.500	3.000	Limited size
2.500	1.526	2.133			without CTB
3.000	1.758	2.458	3.262		
3.500	1.991	2.783	3.690	4.743	
4.000	2.223	3.108	4.118	5.285	
4.500	2.456	3.433	4.547	5.827	
5.000	2.688	3.758	4.975	6.370	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 79% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1.500	2.000	2.500	3.000	Limited size
2.500	76	79			without CTB
3.000	85	88	91		
3.500	95	97	100	104	
4.000	104	106	109	114	
4.500	113	115	119	123	
5.000	122	125	128	132	

Extraction forces and transverse forces

Smaila with VarioShade Valance – wall mounting with mounting plate

Type of mount: **1x 660x220x15 mm mounting plate (MP220) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	12

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1.500	2.000	2.500	3.000	Limited size
2.500	408	569			without CTB
3.000	470	656	869		
3.500	532	743	984	1.263	
4.000	594	829	1.098	1.408	
4.500	657	916	1.212	1.552	
5.000	719	1.003	1.326	1.696	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 85% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1.500	2.000	2.500	3.000	Limited size
2.500	61	62			without CTB
3.000	67	68	70		
3.500	73	74	76	79	
4.000	79	80	83	85	
4.500	85	87	89	92	
5.000	91	93	95	98	

Extraction forces and transverse forces

Smaila with VarioShade Valance – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	12

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1.500	2.000	2.500	3.000	Limited size
2.500	204	284			without CTB
3.000	235	328	434		
3.500	266	371	492	631	
4.000	297	414	549	704	
4.500	328	458	606	776	
5.000	359	501	663	848	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 88% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1.500	2.000	2.500	3.000	Limited size
2.500	68	69			without CTB
3.000	74	76	78		
3.500	80	82	84	87	
4.000	86	88	90	93	
4.500	92	94	96	99	
5.000	98	100	102	105	

Extraction forces

Smaila with VarioShade Valance – roof mounting

Type of mount: **1x 190 mm ceiling bracket (CB190) per arm**

Table valid for all the following bracket assemblies:	2
Total number of installation points:	8

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1.500	2.000	2.500	3.000	Limited size
2.500	1.061	1.460			without CTB
3.000	1.218	1.678	2.207		
3.500	1.376	1.896	2.493	3.187	
4.000	1.533	2.114	2.778	3.547	
4.500	1.690	2.332	3.064	3.907	
5.000	1.848	2.549	3.349	4.268	

Extraction forces and transverse forces

Smaila without VarioShade Valance – front roof mounting

Type of mount: **1x 510 x 160 x 15 mm roof front plate (DS510) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	8

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	868	1.211			without CTB
3000	1.000	1.395	1.849		
3500	1.132	1.579	2.091	2.685	
4000	1.264	1.764	2.334	2.992	
4500	1.396	1.948	2.576	3.299	
5000	1.528	2.132	2.819	3.606	
5500	901	1.336	1.859	2.489	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 92% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	89	91			without CTB
3000	98	100	103		
3500	107	109	112	117	
4000	116	118	122	126	
4500	125	128	131	135	
5000	134	137	140	145	
5500	108	111	114	119	

Note for front ceiling mounting:

The specified extraction forces apply to an at least 160 mm thick storey ceiling.

In this case, the fixing material are to be inserted exactly in the middle of the storey ceiling, so that there is an edge distance of at least 80 mm at the top and bottom. With this type of installation, lining is required, e.g. with 150 x 50 mm rectangular pipes. The lower edge of the rectangular pipe must be flush with the lower edge of the storey ceiling.

Shear forces

Smaila with VarioShade Valance – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2;2
Total number of installation points:	4

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1.500	2.000	2.500	3.000	Limited size
2.500	3.213	4.403			without CTB
3.000	3.693	5.065	6.641		
3.500	4.174	5.726	7.504	9.567	
4.000	4.654	6.388	8.367	10.653	
4.500	5.135	7.049	9.230	11.739	
5.000	5.615	7.711	10.093	12.825	

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2;2
Total number of installation points:	4

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1.500	2.000	2.500	3.000	Limited size
2.500	1.407	1.892			without CTB
3.000	1.613	2.170	2.811		
3.500	1.818	2.448	3.171	4.010	
4.000	2.023	2.727	3.531	4.461	
4.500	2.228	3.005	3.891	4.911	
5.000	2.433	3.284	4.251	5.361	

02 Cassette-awnings

Cassita II

Selection of brackets

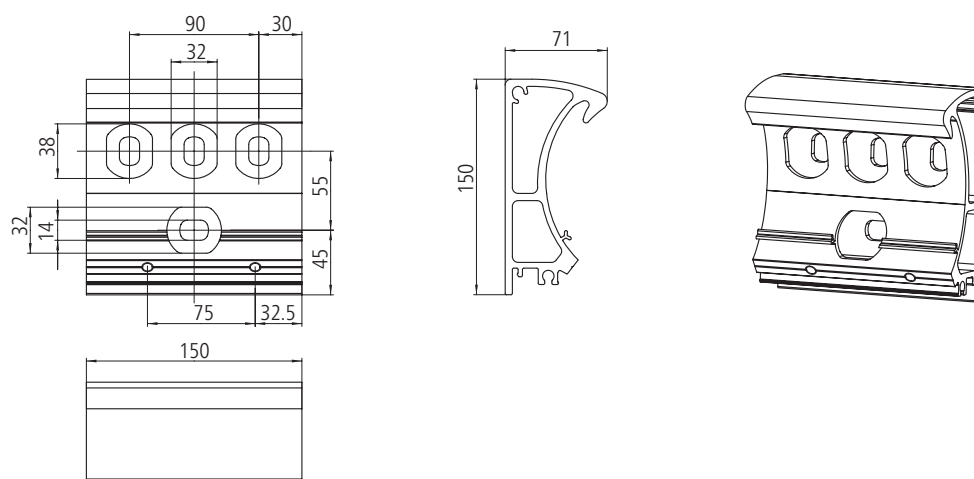
Wall mounting	216
Wall mounting with mounting plate	218
Roof mounting	221
Rafter mounting	223

Selection of brackets

Cassita II – wall mounting

Bracket module consisting of:
150 mm wall bracket; item no. 115950

Notes on this bracket assembly:
1x 150 mm wall bracket (WB150)
1 bracket per arm
2 top installation points, distance between centre lines 90 mm
3 installation points in total



Information for ordering brackets

Number	Scope of delivery	Item number for order
2	2x WB150	2x 115950

Selection of brackets

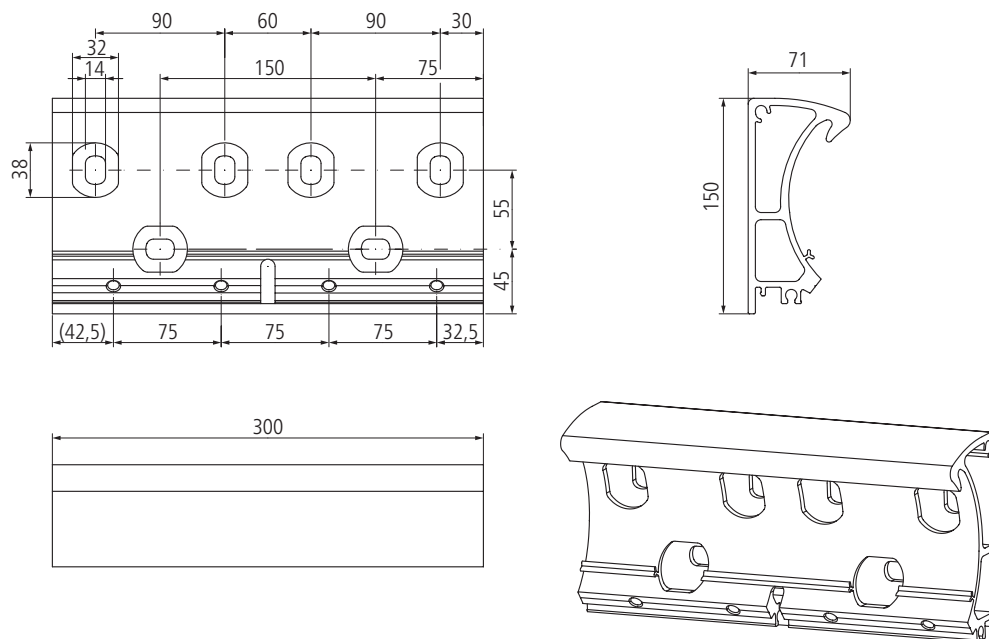
Cassita II – wall mounting

Bracket module consisting of:
300 mm wall bracket; item no. 128300

Notes on this bracket assembly:
1x 300 mm wall bracket (WB300)
1 bracket per arm
2 top installation points, distance between centre lines 90 mm
3 installation points in total



In order to determine the extraction and transverse forces, only half of the existing installation points are taken into account for this bracket assembly: 2 instead of 4 upper installation points or 3 instead of 6 installation points in total. The significance of this bracket assembly is to visually move the position of the installation points further inwards from the aspect of the awning outer edge in order, for example, to enable flush installation on house corners. More installation points may be used than specified, the resulting forces are reduced accordingly: 3 upper installation points = -33%, 4 upper installation points = -50%



Information for ordering brackets

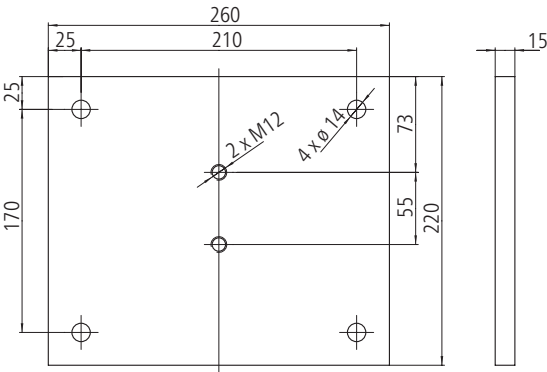
Number	Scope of delivery	Item number for order
2	2x WB300	2x 128300

Selection of brackets

Cassita II – wall mounting with mounting plate

Bracket module consisting of:
260 x 220 x 15 mm mounting plate with:
- 1x 150 mm wall bracket; item no. 115946

Notes on this bracket assembly:
1x 260 x 220 x 15 mm mounting plate (MP260)
incl. 1x 150 mm wall bracket (WB150)
1 mounting plate per arm
2 top installation points, distance between centre lines 210 mm
4 installation points in total



Information for ordering brackets

Number	Scope of delivery	Item number for order
2;2	2x MP260, 2x WB150	2x 115946

Selection of brackets

Cassita II – wall mounting with mounting plate

Bracket module consisting of:

660 x 220 x 15 mm mounting plate with:
- 1x 150 mm wall bracket; item no. 115947

Notes on this bracket assembly:

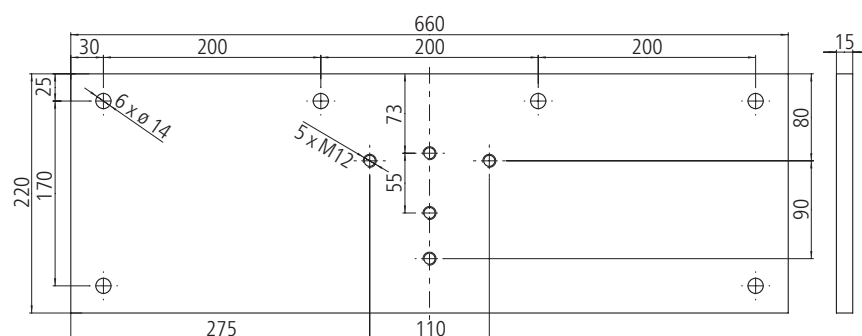
1x 660 x 220 x 15 mm mounting plate (MP220)

incl. 1x 150 mm wall bracket (WB150)

1 mounting plate per arm

4 top installation points, distance between centre lines 200 mm

6 installation points in total



Information for ordering brackets

Number	Scope of delivery	Item number for order
2;2	2x MP220, 2x WB150	2x 115947

Selection of brackets

Cassita II – wall mounting with mounting plate

Bracket module consisting of:

660 x 390 x 15 mm mounting plate with:
- 1x 150 mm wall bracket; item no. 115948

Notes on this bracket assembly:

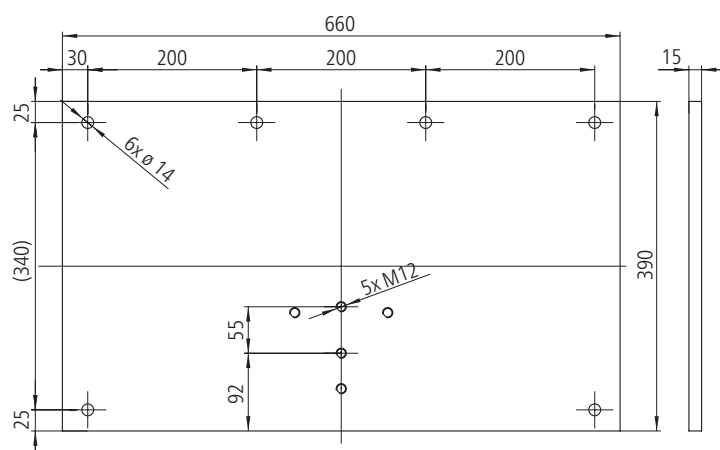
1x 660 x 390 x 15 mm mounting plate (MP390)

incl. 1x 150 mm wall bracket (WB150)

1 mounting plate per arm

4 top installation points, distance between centre lines 200 mm

6 installation points in total



Information for ordering brackets

Number	Scope of delivery	Item number for order
2;2	2x MP390, 2x WB150	2x 115948

Selection of brackets

Cassita II – roof mounting

Bracket module consisting of:

Ceiling bracket with:

- 150 mm wall bracket; item no. 115949

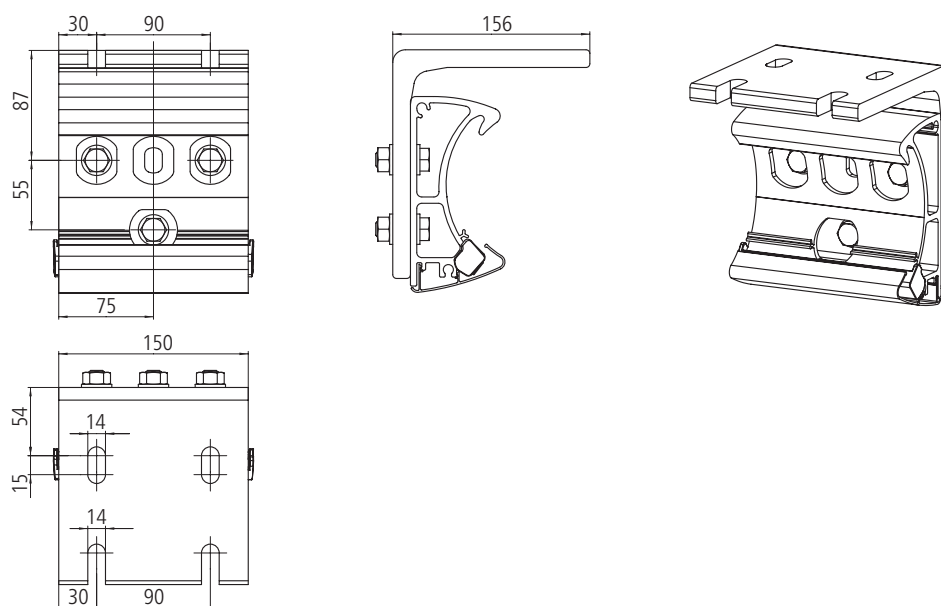
Notes on this bracket assembly:

1x ceiling bracket (CB)

incl. 1x 150 mm wall bracket (WB150)

2 front installation points, distance between centre lines 90 mm

4 installation points in total



Information for ordering brackets

Number	Scope of delivery	Item number for order
2;2	2x CB, 2x WB150	2x 115949

Selection of brackets

Cassita II – roof mounting

Bracket module consisting of:

Compact ceiling bracket, item no. 106813

Notes on this bracket assembly:

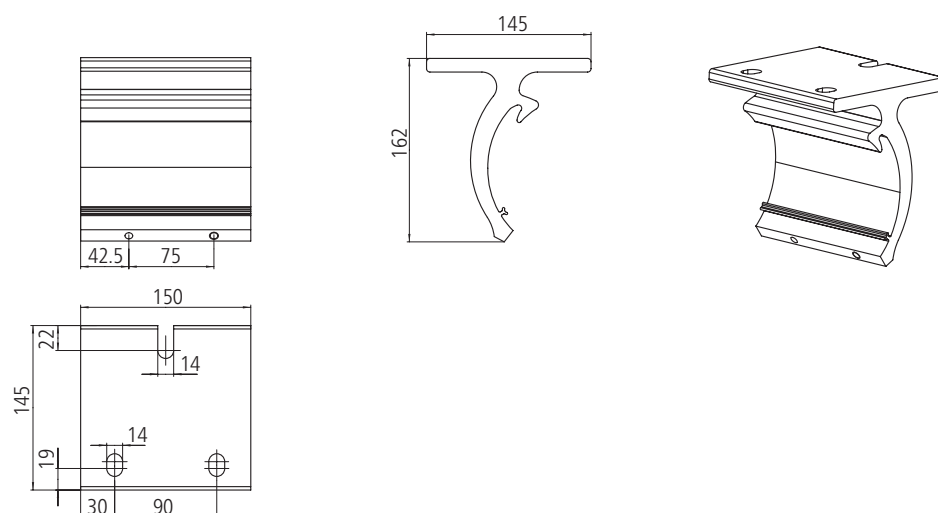
1x compact ceiling bracket (CCB)

1 bracket per arm

2 front installation points, distance between centre lines 90 mm

3 installation points in total

Not for Cassita II with LED!



Information for ordering brackets

Number	Scope of delivery	Item number for order
2	2x CCB	2x 106813

Selection of brackets

Cassita II – rafter mounting

Bracket module consisting of:

Rafter bracket with:

- 150 mm wall bracket; item no. 115951

Notes on this bracket assembly:

1x rafter bracket (RB)

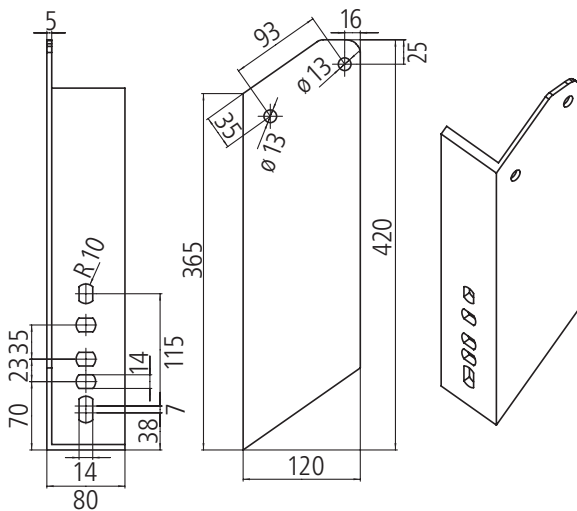
incl. 1x 150 mm wall bracket (WB150)

1 bracket per arm

1 front installation point

2 installation points in total

One left and right version each



Information for ordering brackets

Number	Scope of delivery	Item number for order
2;2	2x RB, 2x WB150	2x 115951

Selection of brackets

Cassita II – rafter mounting

Bracket module consisting of:

Rafter bracket and mounting plate with:
- 150 mm wall bracket; item no. 115952

Notes on this bracket assembly:

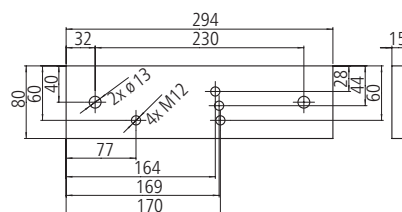
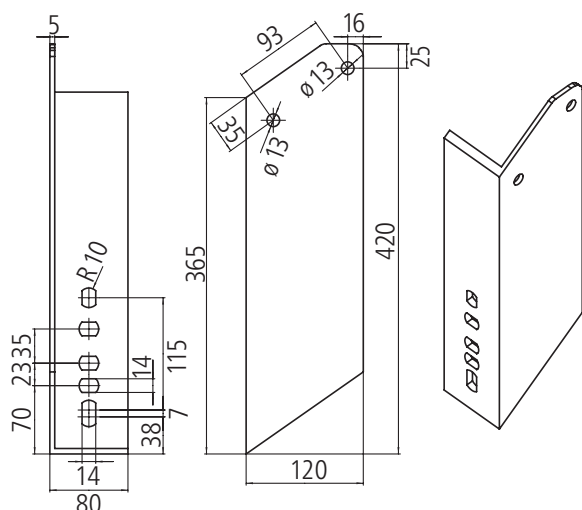
1x rafter bracket (RB) and mounting plate (MP)
incl. 1x 150 mm wall bracket (WB150)

1 bracket per arm

1 front installation point

2 installation points in total

One left and right version each



Information for ordering brackets

Number	Scope of delivery	Item number for order
2;2;2	2x RB, 2x WB150, 2x MP	2x 115952

02 Cassette-awnings

Cassita II

Extraction forces and transverse forces

Cassita II

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Yellow area means limiting size

Extraction forces and transverse forces

Cassita II – wall mounting

Type of mount: **1x 150 mm wall bracket (WB150) per arm**

Table valid for all the following bracket assemblies:	2
Total number of installation points:	6

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	1.058	1.613	2.338		without CTB
3000	1.230	1.875	2.707	3.617	
3500	1.402	2.137	3.077	4.112	
4000	1.574	2.400	3.447	4.607	
4500	1.746	2.662	3.817	5.102	
5000	1.918	2.924	4.187	5.597	
5500	2.089	3.186	4.557	6.092	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 55% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	58	61	65		without CTB
3000	65	68	72	75	
3500	71	74	79	82	
4000	78	81	85	89	
4500	84	88	92	95	
5000	91	94	99	102	
5500	97	101	106	109	

Extraction forces and transverse forces

Cassita II – wall mounting

Type of mount: **1x 300 mm wall bracket (WB300) per arm**

Table valid for all the following bracket assemblies:	2
Total number of installation points:	6

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	1.058	1.613	2.338		without CTB
3000	1.230	1.875	2.707	3.617	
3500	1.402	2.137	3.077	4.112	
4000	1.574	2.400	3.447	4.607	
4500	1.746	2.662	3.817	5.102	
5000	1.918	2.924	4.187	5.597	
5500	2.089	3.186	4.557	6.092	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 55% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	63	66	70		without CTB
3000	70	72	77	80	
3500	76	79	84	87	
4000	83	86	90	93	
4500	89	92	97	100	
5000	96	99	104	107	
5500	102	106	111	114	

Extraction forces and transverse forces

Cassita II – wall mounting with mounting plate

Type of mount: **1x 260x220x15 mm mounting plate (MP260) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	8

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	346	527	763		without CTB
3000	403	613	883	1.179	
3500	459	698	1.004	1.340	
4000	515	784	1.125	1.501	
4500	572	870	1.245	1.663	
5000	628	955	1.366	1.824	
5500	684	1.041	1.487	1.986	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 83% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	49	51	54		without CTB
3000	54	56	59	62	
3500	59	61	64	67	
4000	64	66	70	72	
4500	69	71	75	77	
5000	74	76	80	82	
5500	79	81	85	87	

Extraction forces and transverse forces

Cassita II – wall mounting with mounting plate

Type of mount: **1x 660x220x15 mm mounting plate (MP220) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	12

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	173	263	381		without CTB
3000	201	306	441	589	
3500	229	349	502	670	
4000	257	392	562	750	
4500	286	435	622	831	
5000	314	477	683	912	
5500	342	520	743	993	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 83% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	38	39	42		without CTB
3000	41	43	45	46	
3500	45	46	48	50	
4000	48	49	52	53	
4500	51	53	55	57	
5000	54	56	59	60	
5500	58	60	62	64	

Extraction forces and transverse forces

Cassita II – wall mounting with mounting plate

Type of mount: **1x 660x390x15 mm mounting plate (MP390) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	12

Extraction forces force per top fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	86	131	190		without CTB
3000	100	153	220	294	
3500	114	174	251	335	
4000	128	196	281	375	
4500	143	217	311	415	
5000	157	238	341	456	
5500	171	260	371	496	

The specified extraction forces apply to installation on a **non-pressure-resistant** surface with 200 mm facing.

The extraction forces are 87% of the specified values for a **pressure-resistant** surface.

Transverse forces per fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	46	47	49		without CTB
3000	49	51	53	54	
3500	52	54	56	58	
4000	56	57	59	61	
4500	59	61	63	64	
5000	62	64	66	68	
5500	65	67	70	71	

Extraction forces

Cassita II – roof mounting

Type of mount: **1x ceiling bracket (CB) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	8

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	501	749	1.073		without CTB
3000	580	867	1.239	1.647	
3500	658	986	1.406	1.869	
4000	737	1.104	1.573	2.092	
4500	815	1.223	1.739	2.315	
5000	894	1.342	1.906	2.537	
5500	973	1.460	2.072	2.760	

Type of mount: **1x compact ceiling bracket (bracket (CCB) per arm**

Table valid for all the following bracket assemblies:	2
Total number of installation points:	6

Extraction forces per front fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	538	799	1.141		without CTB
3000	622	925	1.317	1.747	
3500	706	1.051	1.494	1.982	
4000	790	1.177	1.671	2.218	
4500	874	1.303	1.848	2.454	
5000	958	1.430	2.024	2.689	
5500	1.042	1.556	2.201	2.925	

Shear forces

Cassita II – rafter mounting

Type of mount: **1x rafter bracket (RB) per arm**

Table valid for all the following bracket assemblies:	2;2
Total number of installation points:	4

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	1.373	2.041	2.912		without CTB
3000	1.591	2.366	3.366	4.453	
3500	1.808	2.691	3.820	5.057	
4000	2.026	3.017	4.274	5.660	
4500	2.243	3.342	4.728	6.264	
5000	2.460	3.668	5.182	6.868	
5500	2.678	3.993	5.636	7.471	

Type of mount: **1x rafter bracket with mounting plate (RB MP) per arm**

Table valid for all the following bracket assemblies:	2;2;2
Total number of installation points:	4

Shear forces per front fixing material in [N]

Width [mm]	Projection [mm]				Miscellaneous
	1500	2000	2500	3000	Limiting size
2500	615	888	1.243		without CTB
3000	709	1.025	1.433	1.875	
3500	803	1.163	1.623	2.126	
4000	897	1.300	1.813	2.376	
4500	990	1.438	2.002	2.626	
5000	1.084	1.575	2.192	2.877	
5500	1.178	1.713	2.382	3.127	