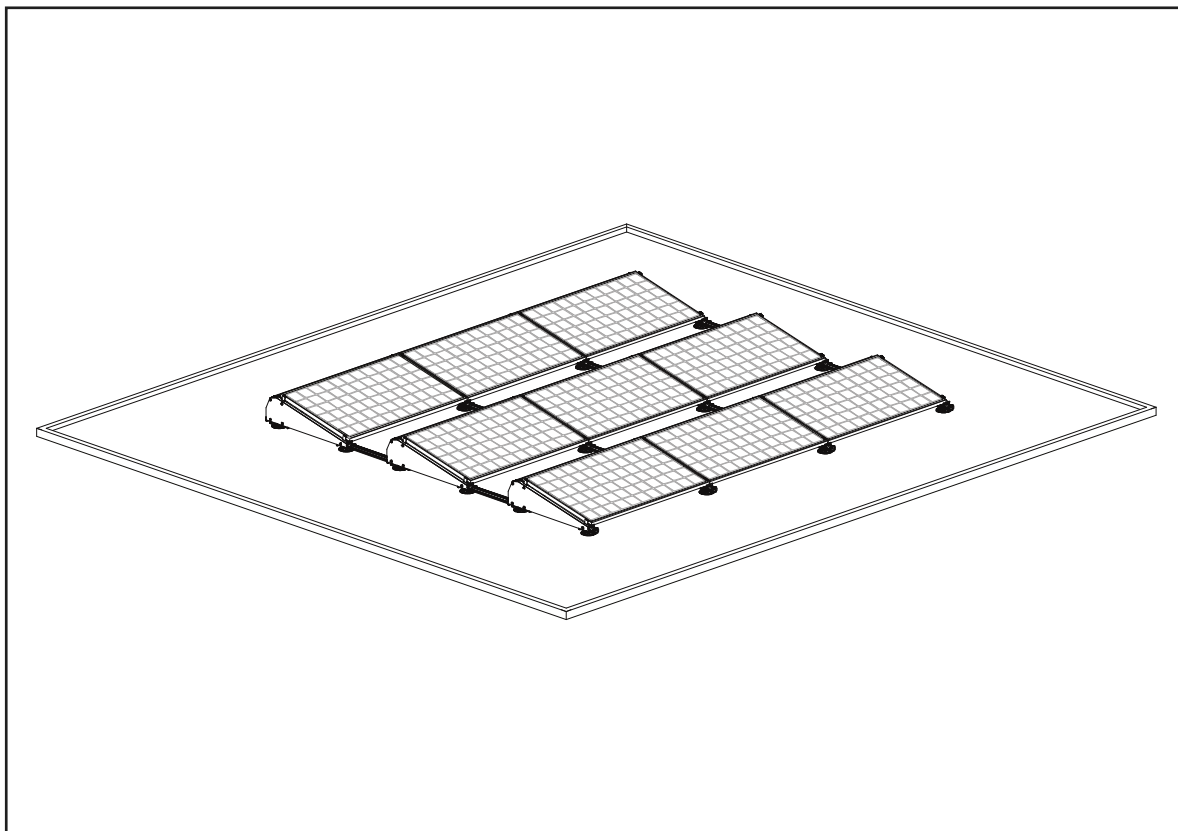


PROJECT SPECIFICATIONS

FLATFIX FUSION MOUNTING SYSTEM FOR FLAT ROOFS



Project: Avstånd mellan
panelrader -
Sydvänd

Date: 14-7-2020

Client:

Reference:

Paderbornstraat 4
7418 BP Deventer
The Netherlands

Phone	+31 570 624 177
Fax	+31 570 621 485
Mail	info@clickfit.nl

Flatfix Fusion is a product of Esdec B.V.
Flatfix Fusion ist ein Produkt von Esdec B.V.
Flatfix Fusion is een product van Esdec B.V.

CLICKFIT.NL



PROJECT SPECIFICATIONS

FLATFIX FUSION MOUNTING SYSTEM FOR FLAT ROOFS

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Project specifications

Date	dinsdag 14 juli 2020 16:10:55
Client	
Reference	

Location

Location	
Terrain	Terrain category III
Consequences class	CC1
V _{bo}	26
C _{dir}	1
C _{season}	1
C _{r(z)}	1
ρ	1.25
Wind pressure	592 N/m ²
Height	6 m
Edge zone	710 mm
Parapet	300
Roof angle	1.4°*
Roofing	0,45 (PVC/TPO)
Membrane fastening	Fully glued
Segment count	2

*At roof angles beyond 3 degrees on bitumen and EPDM roofs or beyond 2 degrees on PVC and other roof types the system must be glued or fastened mechanically.

System specifications

Panel type	ZN Shine - 320W Mono LD
Panel dimensions	1678x1002x35mm
Panel weight	22.0 kg
Panel power	320 Wp
Panelcount	130 st
Total power	41,6 kWp
Mounting angle	13°
Configuration	Single
Row distance	1700 mm
Orientation (West=90, South=0, East=-90)	0°
Average return indication (Kwh/year)	37440 Kwh/jaar*
Average return indication (Kwh/Kwp)	0.90 Kwh/Kwp*

*Based on PVGIS, location De Bilt, Netherlands with a shadowfree setup using a row distance of 1700mm. No rights can be derived from this information.

Ballast options

concrete slab(210x100x80mm, 4kg/st)	176 st
Gravel(diameter 3cm, 1600kg/m ³)	0.440 m ³

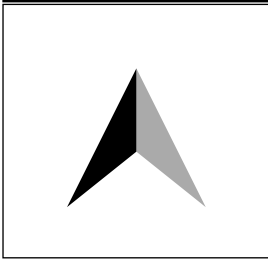
Complete materials

Article nr	Amount	Description
100-7012	343st	Base plate or (100-7010)
100-7021	143st	Low base
100-7030	143st	High base
100-7041	130st	Cable clip optimizer ready
100-7201-B	130st	Winddeflector rear 1600 black (or 100-7550-B)
100-7204-B	13st	Winddeflector left black (or 100-7555)
100-7205-B	13st	Winddeflector right black (or 100-7556)
100-7202	30st	Ballast container 1600 (or 100-7060)
100-7675	121st	Base profile 750mm black
100-7194	143st	Base profile 940mm
100-6519	286st	Mounting screw 6,5x19
100-6563	286st	Mounting screw 6,5x63
100-3010	52st	Self-tapping screw 6,0x25
100-6500	572st	Colorcap black
100-3022-B	234st	Module clamp black
100-4935	52st	Endclamp black 35mm

Materials

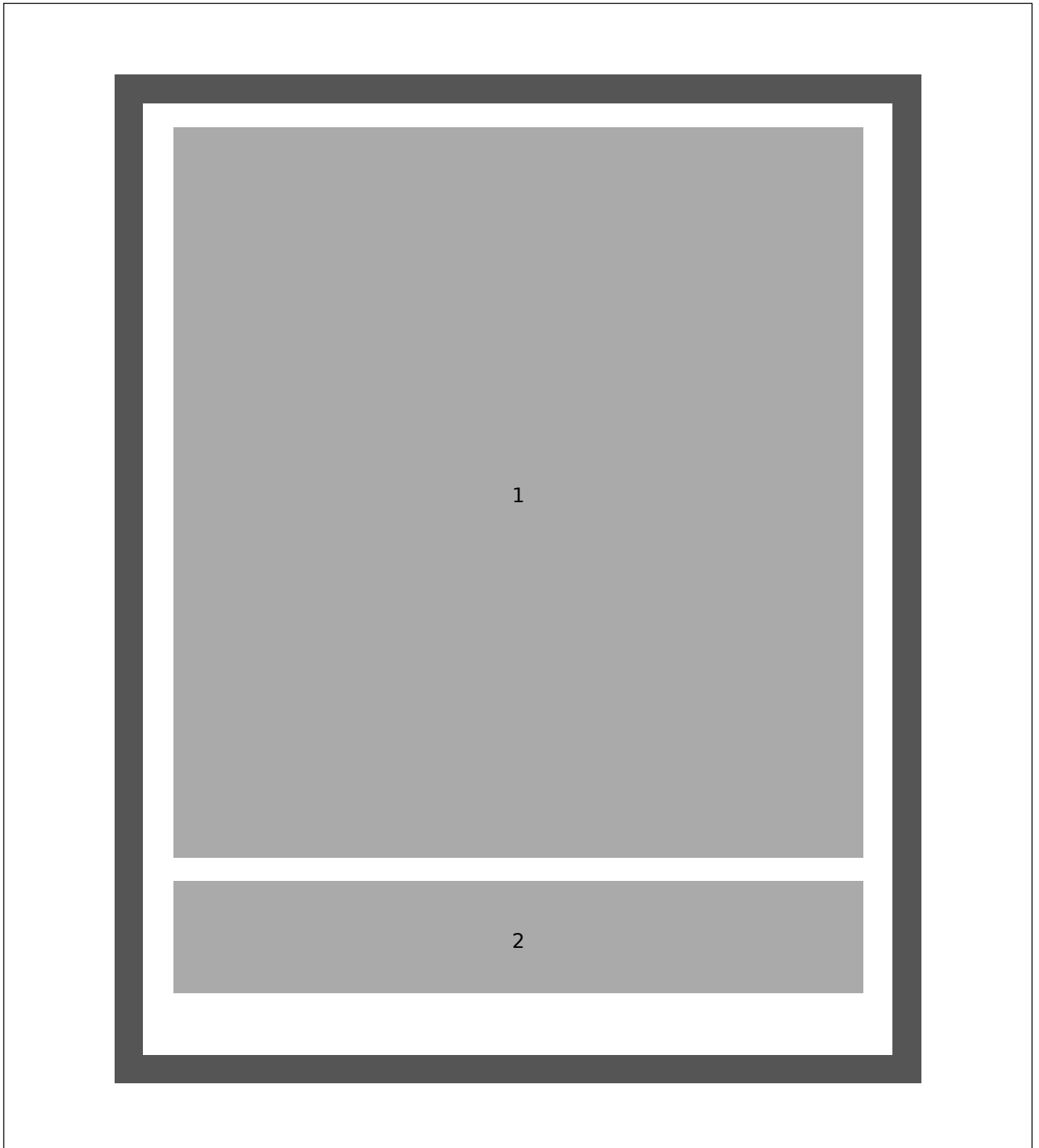
Article nr	Amount	Description
100-7012	343st	Base plate or (100-7010)
100-7021	143st	Low base
100-7030	143st	High base
100-7041	130st	Cable clip optimizer ready
100-7201-B	130st	Winddeflector rear 1600 black (or 100-7550-B)
100-7204-B	13st	Winddeflector left black (or 100-7555)
100-7205-B	13st	Winddeflector right black (or 100-7556)
100-7202	30st	Ballast container 1600 (or 100-7060)
100-7675	121st	Base profile 750mm black
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100-6563	286st	Mounting screw 6,5x63
100-3010	52st	Self-tapping screw 6,0x25
100-6500	572st	Colorcap black
100-3022-B	234st	Module clamp black
100-4935	52st	Endclamp black 35mm

Complete overview Roof A



■ Panels

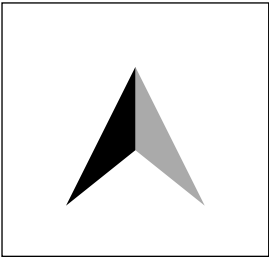
■ Area to be kept free



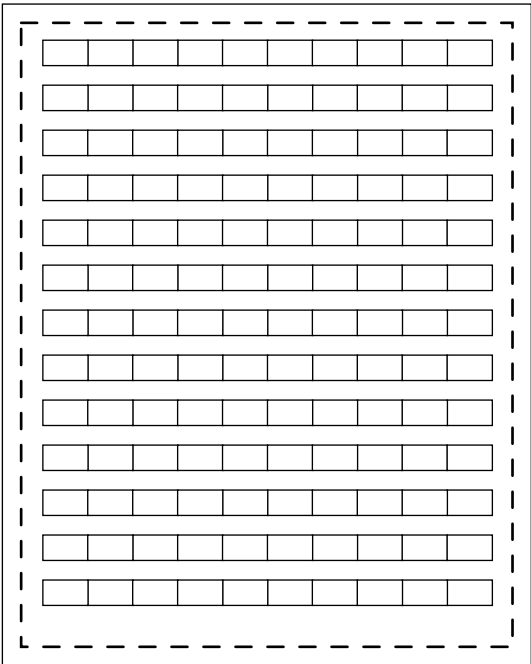
Roof load(static)

Weight panels	2860 kg
Weight Flatfix fusion	823 kg
Weight Ballast	704 kg
Total weight	4387 kg
Roof area(gross)	500 m2
System area(projected area)	375.26 m2
Average roof load over system area	11.69 kg/m2
Average roof load over roof area	8.77 kg/m2
Roof load over ballasted area	22.52 kg/m2
Roof load over unballasted area	9.81 kg/m2
Average point pressure (at base plate)	8.1 kPa*
Max. point pressure (at base plate)	14.0 kPa*
Min. point pressure (at base plate)	3.9 kPa*

*Irregularities in the roof can cause deviating point pressures



--- Edge zone

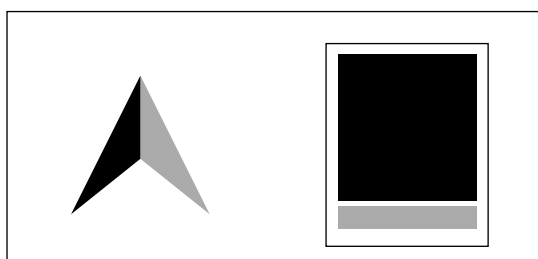


System specifications: Roof A, Segment 1

System specifications

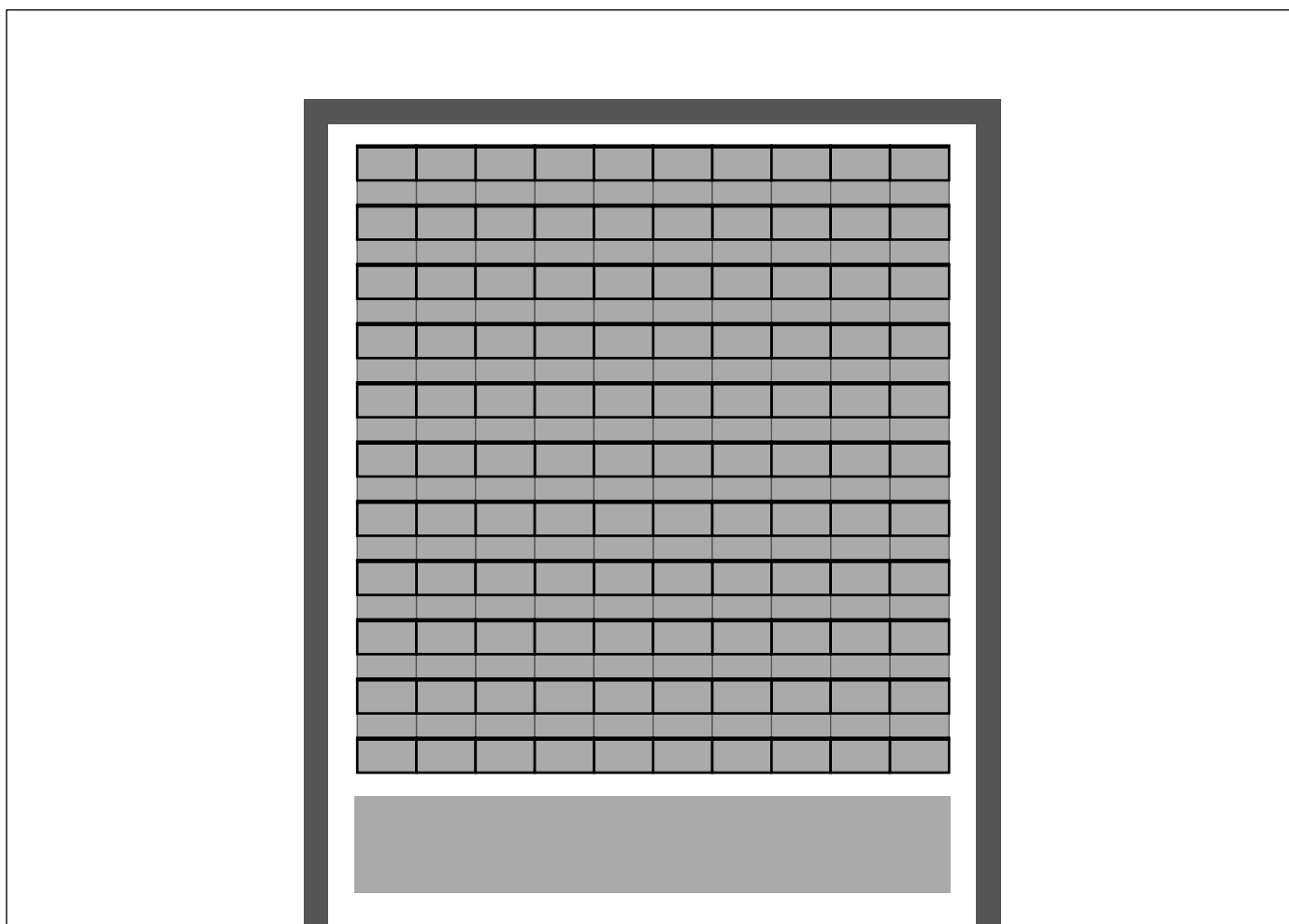
Panelcount	110 st
Total power	35,2 kWp
Configuration	Single
Row distance	1700 mm
Orientation (West=90, South=0, East=-90)	0°
Average return indication (Kwh/year)	31680 Kwh/year*
Average return indication (Kwh/Kwp)	0.72 Kwh/Kwp*

*Based on PVGIS, location De Bilt, Netherlands with a shadowfree setup using a row distance of 1700mm. No rights can be derived from this information.



■ Panels

■ Area to be kept free



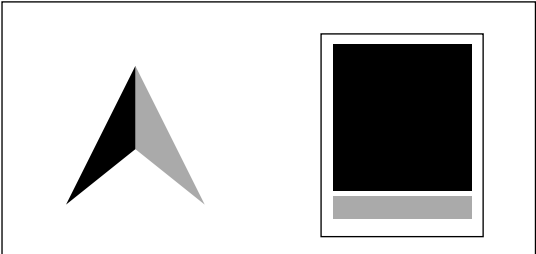
Ballast weight: Roof A, Segment 1

Ballast weight

Ballasted	18 st
Weight Ballast	432 kg

Ballast options

concrete slab(210x100x80mm, 4kg/st)	108 st
Gravel(diameter 3cm, 1600kg/m3)	0.270 m3



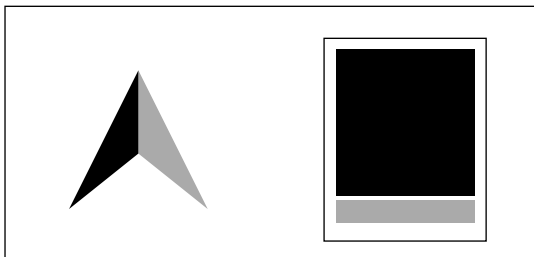
32kg	24kg		24kg		24kg		24kg		32kg
24kg									24kg
24kg									24kg
24kg									24kg
24kg									24kg
24kg			16kg			16kg			24kg

Roof load: Roof A, Segment 1

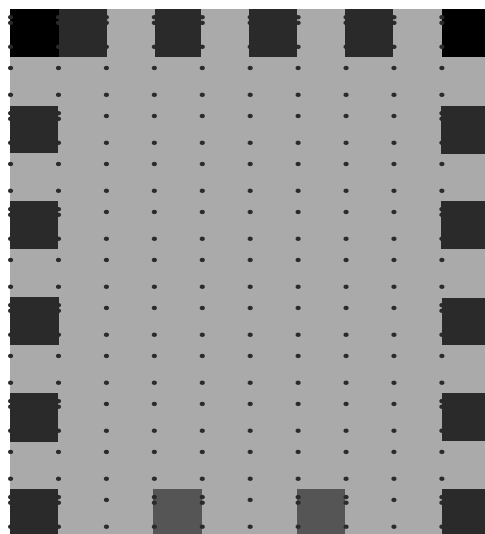
Roof load(static)

Weight panels	2420 kg
Weight Flatfix fusion	681 kg
Weight Ballast	432 kg
Total weight	3533 kg
System area(projected area)	317.53 m ²
Average roof load over system area	11.13 kg/m ²
Average point pressure (at base plate)	8.1 kPa*
Max. point pressure (at base plate)	14.0 kPa*
Min. point pressure (at base plate)	3.9 kPa*

*Irregularities in the roof can cause deviating point pressures



● Base plates ■ 9.40kg/m² ■ 15.84kg/m² ■ 19.27kg/m² ■ 22.06kg/m²



Materials: Roof A, Segment 1

Materials

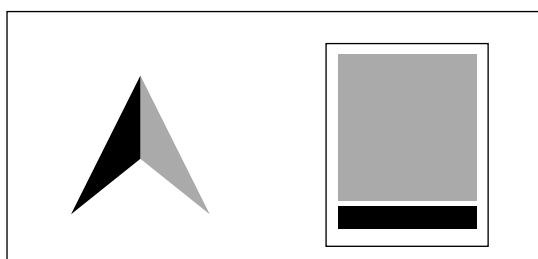
Article nr	Amount	Description
100-7012	277st	Base plate or (100-7010)
100-7021	121st	Low base
100-7030	121st	High base
100-7041	110st	Cable clip optimizer ready
100-7201-B	110st	Winddeflector rear 1600 black (or 100-7550-B)
100-7204-B	11st	Winddeflector left black (or 100-7555)
100-7205-B	11st	Winddeflector right black (or 100-7556)
100-7202	18st	Ballast container 1600 (or 100-7060)
100-7675	110st	Base profile 750mm black
100-7194	121st	Base profile 940mm
100-6519	242st	Mounting screw 6,5x19
100-6563	242st	Mounting screw 6,5x63
100-3010	44st	Self-tapping screw 6,0x25
100-6500	484st	Colorcap black
100-3022-B	198st	Module clamp black
100-4935	44st	Endclamp black 35mm

System specifications: Roof A, Segment 2

System specifications

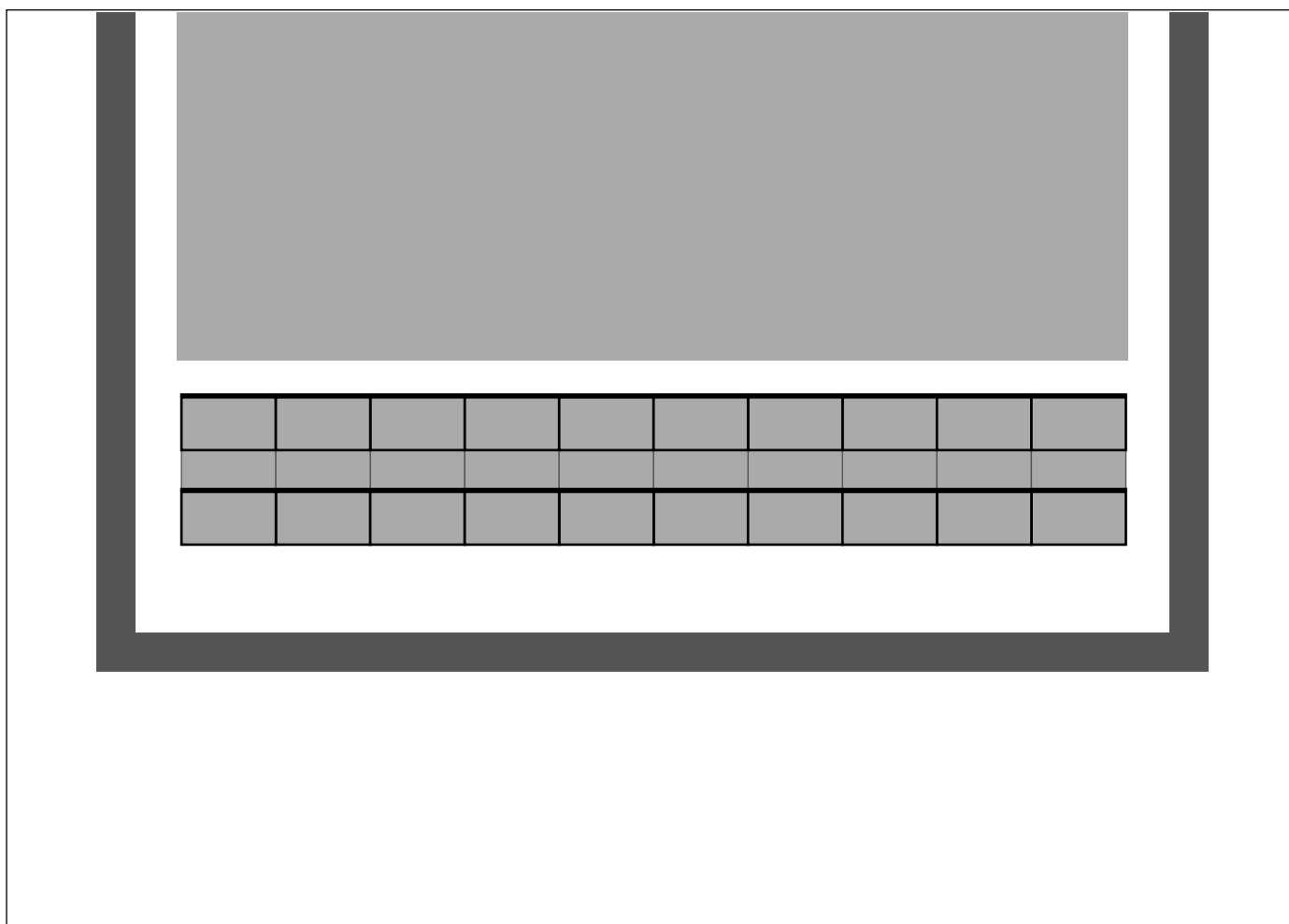
Panelcount	20 st
Total power	6400 Wp
Configuration	Single
Row distance	1700 mm
Orientation (West=90, South=0, East=-90)	0°
Average return indication (Kwh/year)	5760 Kwh/year*
Average return indication (Kwh/Kwp)	0.72 Kwh/Kwp*

*Based on PVGIS, location De Bilt, Netherlands with a shadowfree setup using a row distance of 1700mm. No rights can be derived from this information.



■ Panels

■ Area to be kept free



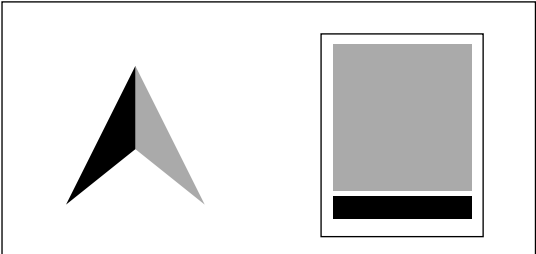
Ballast weight: Roof A, Segment 2

Ballast weight

Ballasted	12 st
Weight Ballast	272 kg

Ballast options

concrete slab(210x100x80mm, 4kg/st)	68 st
Gravel(diameter 3cm, 1600kg/m3)	0.170 m3



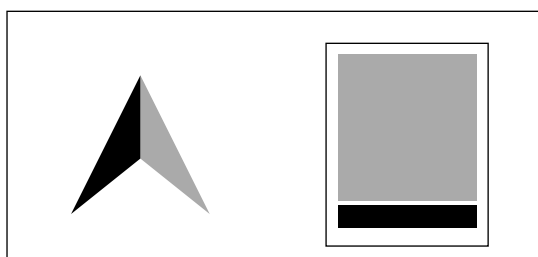
32kg	24kg		24kg		24kg		24kg		32kg
24kg	16kg		16kg		16kg		16kg		24kg

Roof load: Roof A, Segment 2

Roof load(static)

Weight panels	440 kg
Weight Flatfix fusion	141 kg
Weight Ballast	272 kg
Total weight	853 kg
System area(projected area)	57.73 m2
Average roof load over system area	14.79 kg/m2
Average point pressure (at base plate)	8.2 kPa*
Max. point pressure (at base plate)	14.0 kPa*
Min. point pressure (at base plate)	4.1 kPa*

*Irregularities in the roof can cause deviating point pressures



● Base plates

■ 9.40kg/m2

■ 15.84kg/m2

■ 19.27kg/m2

■ 22.06kg/m2

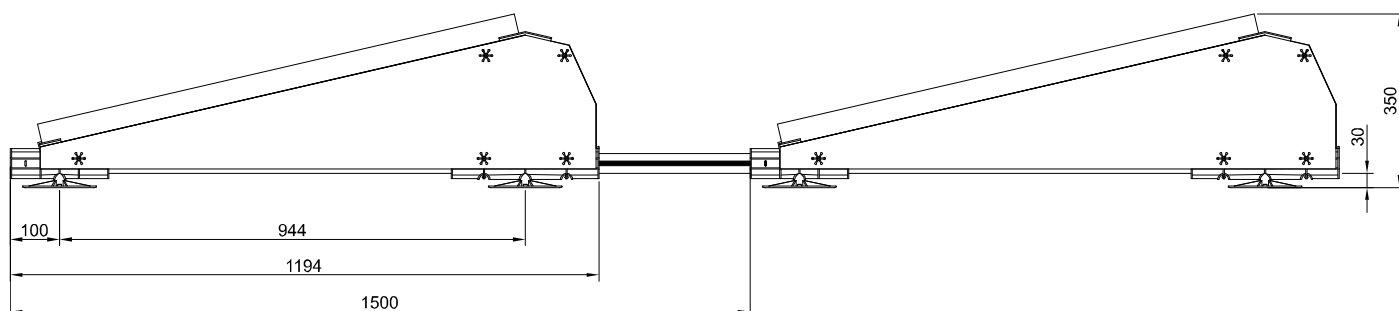


Materials: Roof A, Segment 2

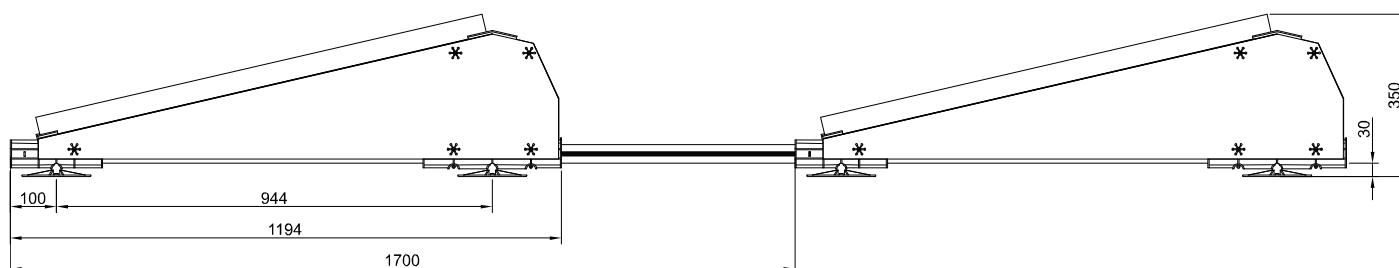
Materials

Article nr	Amount	Description
100-7012	66st	Base plate or (100-7010)
100-7021	22st	Low base
100-7030	22st	High base
100-7041	20st	Cable clip optimizer ready
100-7201-B	20st	Winddeflector rear 1600 black (or 100-7550-B)
100-7204-B	2st	Winddeflector left black (or 100-7555)
100-7205-B	2st	Winddeflector right black (or 100-7556)
100-7202	12st	Ballast container 1600 (or 100-7060)
100-7675	11st	Base profile 750mm black
100-7194	22st	Base profile 940mm
100-6519	44st	Mounting screw 6,5x19
100-6563	44st	Mounting screw 6,5x63
100-3010	8st	Self-tapping screw 6,0x25
100-6500	88st	Colorcap black
100-3022-B	36st	Module clamp black
100-4935	8st	Endclamp black 35mm

Single setup with a row distance of 1500mm



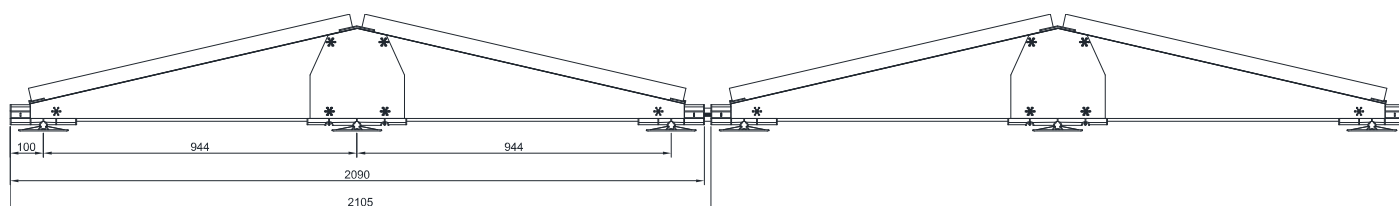
Single setup with a row distance of 1700mm



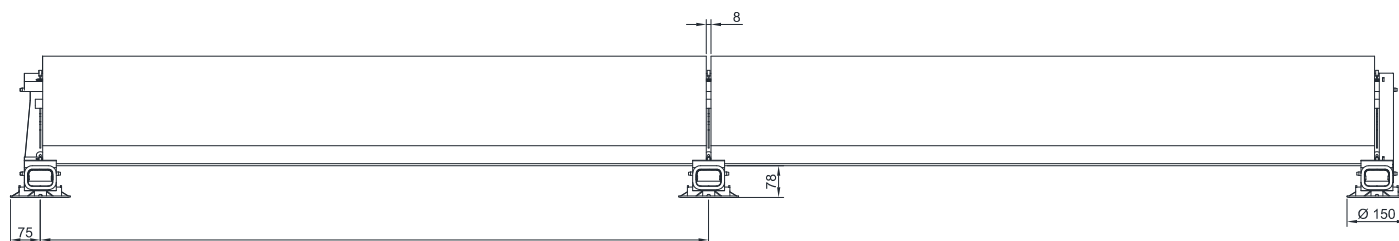
Single setup with a row distance of 1890mm



Dual setup



Back view



PROJECT SPECIFICATIONS

FLATFIX FUSION MOUNTING SYSTEM FOR FLAT ROOFS

Disclaimer: The installation of a PV system, or to an existing building, the hitherto existing building loads (eg snow / wind.) Or changing the building constructions. To avoid personal injury and / or property damage, it is necessary static calculations of the existing building to be reviewed by a qualified technician. Here one must observe the current regulations and in particular the NEN6702, NEN7250, NEN1991-1-1-4 A1 + C2 / NB. It does not check the static calculation of the building, it can in the worst case, lead to failure of the load-bearing structure of the building. Consultation with the insurer is required in the event of structural changes. Among others, the following should be considered controlled architectural and good: The occurring charges as a result of the additional weight of the complete PV system on the building. The occurring charges as a result of the changed geometry of the roof on the building. The occurring charges as a result of the dynamic wind pressure and possible accumulation of precipitation on the building. The loads occurring during installation on the building, roofing and insulation. The compatibility of the insulation and roofing material at the location of the contact points of the supporting structure of the long-term PV-system as a result of the pressure point. The compatibility of the roofing material in combination with the support structure at the location of the contact points. The effect of thermal performance of the building and the PV system on each other. The effect of any movement and vibrations of the roof and the PV system on each other. Despite the fact that the calculations are carried out carefully in the software, no rights can be derived. Prices in the software are indicative and may change due to possibly rising commodity prices. The drawing and the dimensions in the software are indicative, no rights can be derived.