



Ministero dell'Ambiente e della
Sicurezza Energetica



Regione Calabria



Comune di Scandale

Provvedimento di VIA nell'ambito del provvedimento unico in materia ambientale ai sensi dell'art.27 del D.Lgs.152/2006 per la "Costruzione ed esercizio di un impianto fotovoltaico della potenza complessiva pari a 25,1085 Mw, da ubicare nel comune di Scandale (KR) in località Collarica e località Fota e relative opere di connessione"

PROPONENTE

MYT RENEWABLES DEVELOPMENT 5 S.R.L.
Piazza Fontana 6 - 20122 Milano (MI)
Pec: mytdevelopment5srl@legalmail.it

ELABORATO
C.13

Disciplinare descrittivo e prestazionale
degli elementi tecnici

SCALA: ____

PROGETTAZIONE:

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IL TECNICO:

Aggiornamenti

Numero	Data	Motivo
Rev 0	Giugno 2023	Provvedimento di VIA nell'ambito del provvedimento unico in materia ambientale ai sensi dell'art.27 del D.Lgs.152/2006

SPAZIO RISERVATO AGLI ENTI



BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

PRODUCT: TSM-DEG19RC.20

PRODUCT RANGE: 560-580W

580W

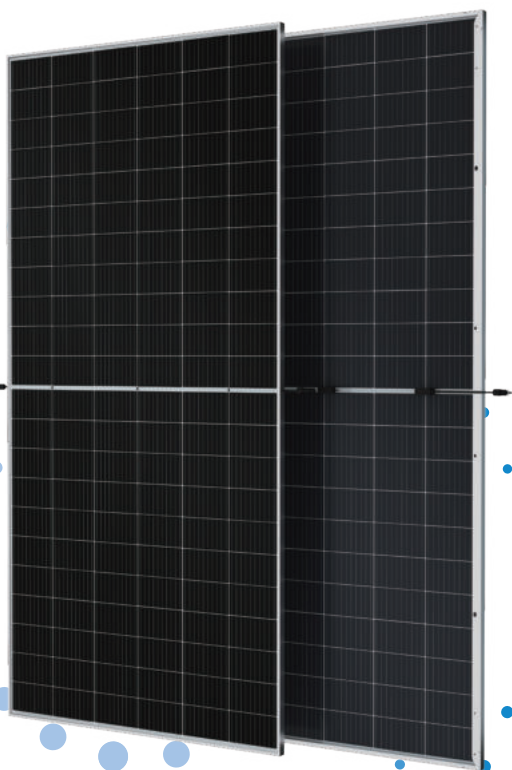
MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21.5%

MAXIMUM EFFICIENCY



High customer value

- Lower LCOE (Levelized Cost Of Energy), reduced BOS (Balance of System) cost, shorter payback time
- Lower first year and annual degradation
- Designed for compatibility with existing mainstream system components
- Higher return on Investment



High power up to 580W

- Up to 21.5% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



High reliability

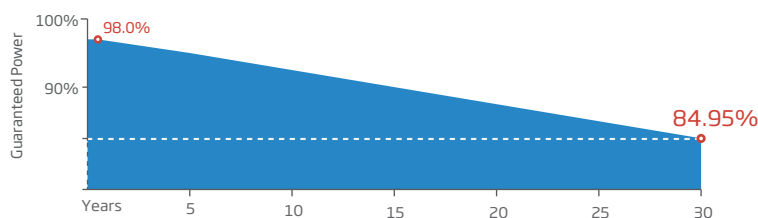
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.34%) and operating temperature
- Up to 25% additional power gain from back side depending on albedo

Trina Solar's Vertex Bifacial Dual Glass Performance Warranty



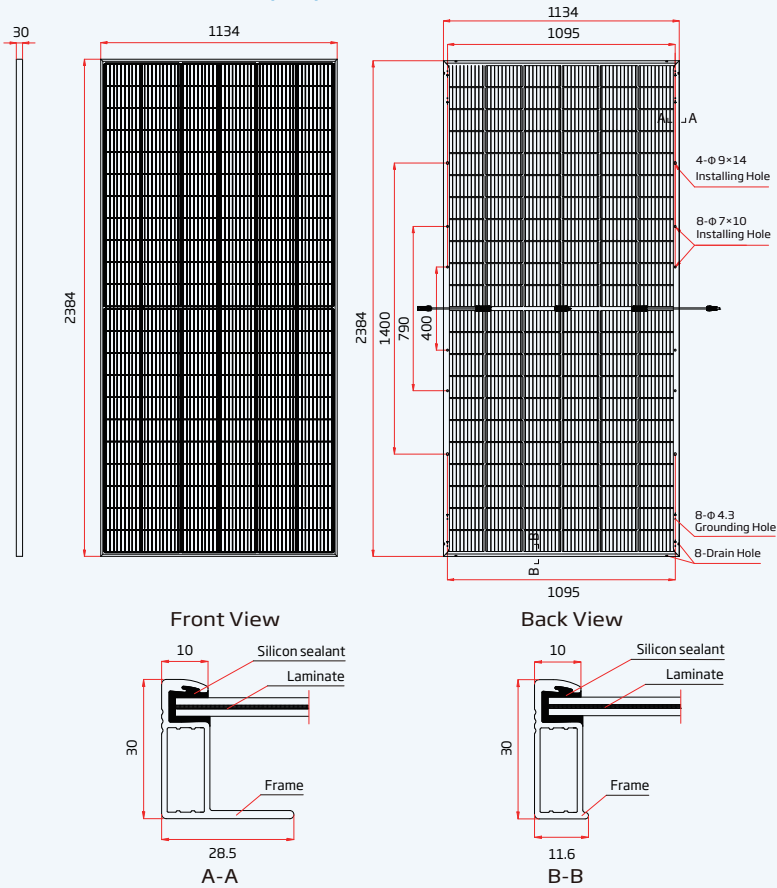
Comprehensive Products and System Certificates



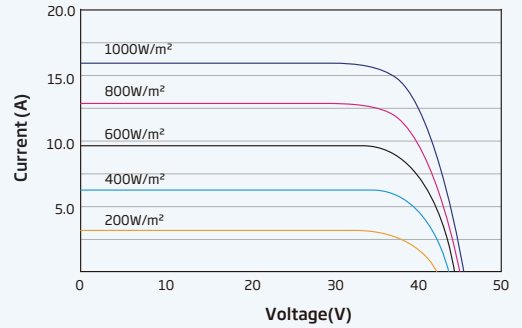
IEC61215/IEC61730/IEC61701/IEC62716
 ISO 9001: Quality Management System
 ISO 14001: Environmental Management System
 ISO14064: Greenhouse Gases Emissions Verification
 ISO45001: Occupational Health and Safety Management System



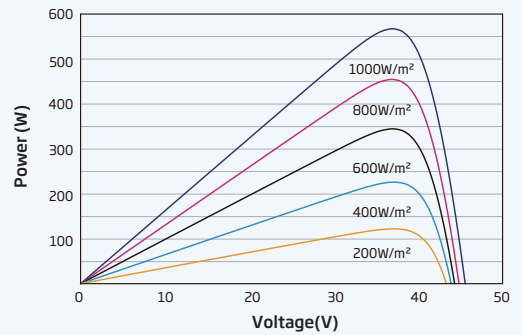
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE(570 W)



P-V CURVES OF PV MODULE(570 W)



ELECTRICAL DATA (STC)

Peak Power Watts -P _{MAX} (Wp)*	560	565	570	575	580
Power Tolerance-P _{MAX} (W)	0 ~ +5				
Maximum Power Voltage -V _{MPP} (V)	37.9	38.2	38.4	38.7	38.9
Maximum Power Current -I _{MPP} (A)	14.76	14.80	14.84	14.87	14.91
Open Circuit Voltage -V _{OC} (V)	45.2	45.5	45.7	46.0	46.2
Short Circuit Current -I _{SC} (A)	15.86	15.90	15.93	15.97	16.01
Module Efficiency η _m (%)	20.7	20.9	21.1	21.3	21.5

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. *Measuring tolerance: ±3%.

Electrical characteristics with different power bin (reference to 10% Irradiance ratio)

Total Equivalent power -P _{MAX} (Wp)	599	605	610	615	620
Maximum Power Voltage -V _{MPP} (V)	37.9	38.2	38.4	38.7	38.9
Maximum Power Current -I _{MPP} (A)	15.81	15.83	15.88	15.90	15.94
Open Circuit Voltage -V _{OC} (V)	45.2	45.5	45.7	46.0	46.2
Short Circuit Current -I _{SC} (A)	16.97	17.01	17.05	17.09	17.13
Irradiance ratio (rear/front)	10%				

Power Bifaciality: 70±5%.

ELECTRICAL DATA (NOCT)

Maximum Power -P _{MAX} (Wp)	424	428	431	436	439
Maximum Power Voltage -V _{MPP} (V)	34.9	35.2	35.4	35.7	35.8
Maximum Power Current -I _{MPP} (A)	12.12	12.15	12.18	12.22	12.25
Open Circuit Voltage -V _{OC} (V)	42.6	42.8	43.0	43.3	43.5
Short Circuit Current -I _{SC} (A)	12.78	12.81	12.84	12.87	12.90

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	132 cells
Module Dimensions	2384×1134×30 mm (93.86×44.65×1.18 inches)
Weight	33.7 kg (74.3 lb)
Front Glass	2.0 mm (0.08 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA/POE
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	30mm(1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²) Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EVO2 / TS4 Plus/ TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of P _{MAX}	-0.34%/°C
Temperature Coefficient of V _{OC}	-0.25%/°C
Temperature Coefficient of I _{SC}	0.04%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	35A

WARRANTY

12 year Product Workmanship Warranty
 30 year Power Warranty
 2% first year degradation
 0.45% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 36 pieces
 Modules per 40' container: 720 pieces

SUN2000-185KTL-H1

Smart String Inverter



9
MPP Trackers



99.0%
Max. Efficiency



String-level
Management



Smart I-V Curve
Diagnosis Supported



MBUS
Supported



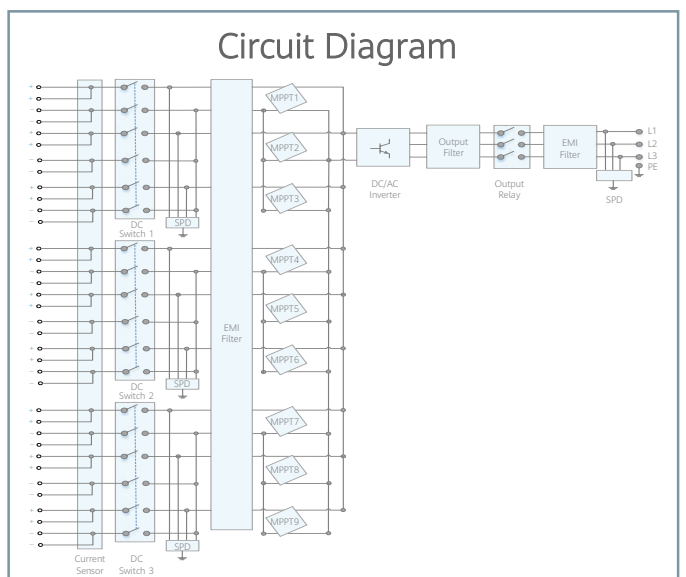
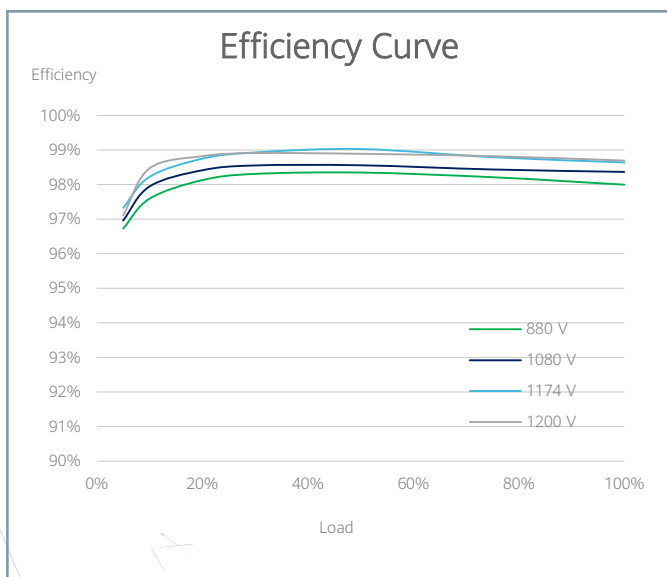
Fuse Free
Design



Surge Arresters for
DC & AC



IP66
Protection



Technical Specifications

Efficiency	
Max. Efficiency	99.03%
European Efficiency	98.69%
Input	
Max. Input Voltage	1,500 V
Max. Current per MPPT	26 A
Max. Short Circuit Current per MPPT	40 A
Start Voltage	550 V
MPPT Operating Voltage Range	500 V ~ 1,500 V
Nominal Input Voltage	1,080 V
Number of Inputs	18
Number of MPP Trackers	9
Output	
Nominal AC Active Power	175,000 W @40°C
Max. AC Apparent Power	185,000 VA
Nominal Output Voltage	800 V, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	126.3 A @40°C
Max. Output Current	134.9 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
Protection	
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
Communication	
Display	LED Indicators, Bluetooth/WLAN + APP
USB	Yes
MBUS	Yes
RS485	Yes
General	
Dimensions (W x H x D)	1,035 x 700 x 365 mm (40.7 x 27.6 x 14.4 inch)
Weight (with mounting plate)	84 kg (185.2 lb.)
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method	Smart Air Cooling
Max. Operating Altitude without Derating	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Staubli MC4 EVO2
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless
Standard Compliance (more available upon request)	
Certificates	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683, IEC 61727, IEC 62910, P.O. 12.3, RD 1699, RD 661, RD 413, RD 1565, RD 1663, ABNT NBR 16149, ABNT NBR 16150, ABNT NBR IEC 62116

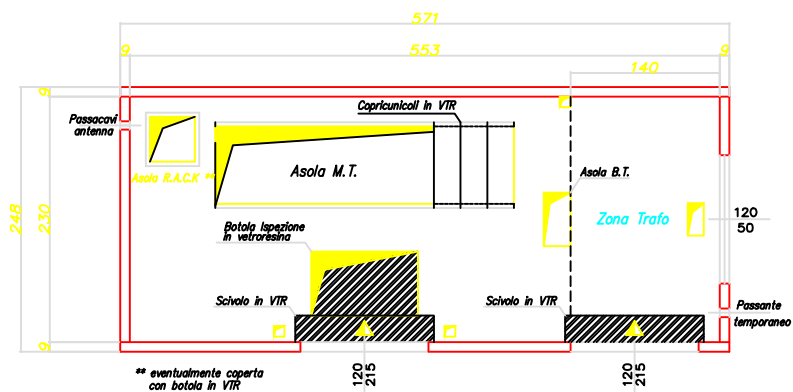
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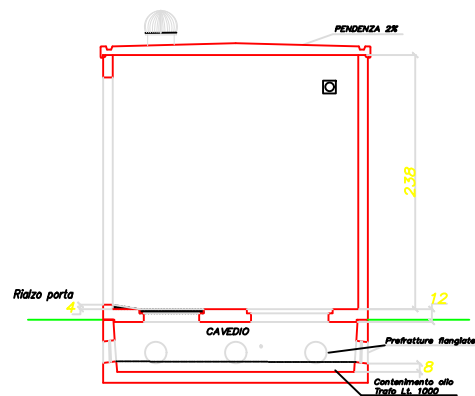
REV. 07

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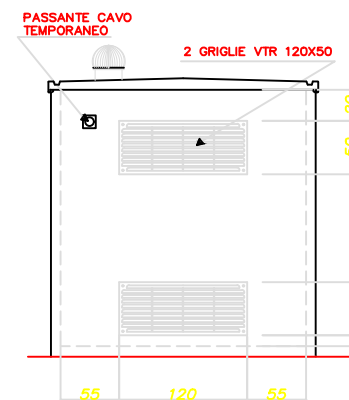
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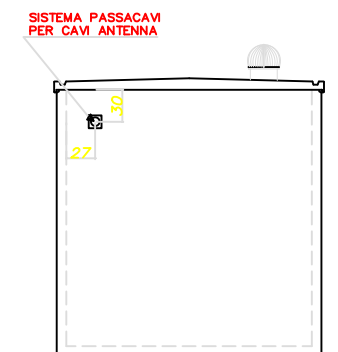
SEZ. TRASVERSALE



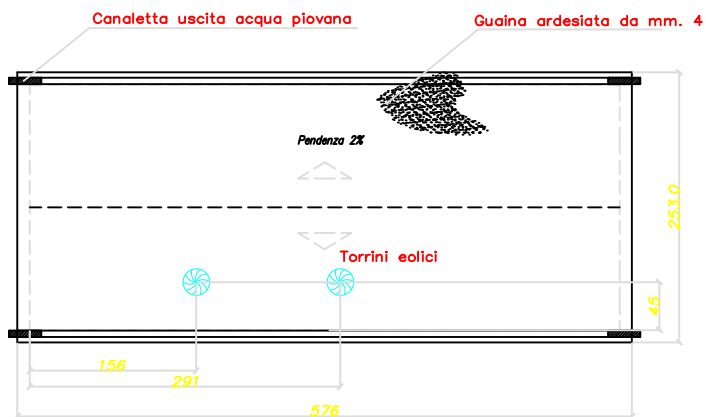
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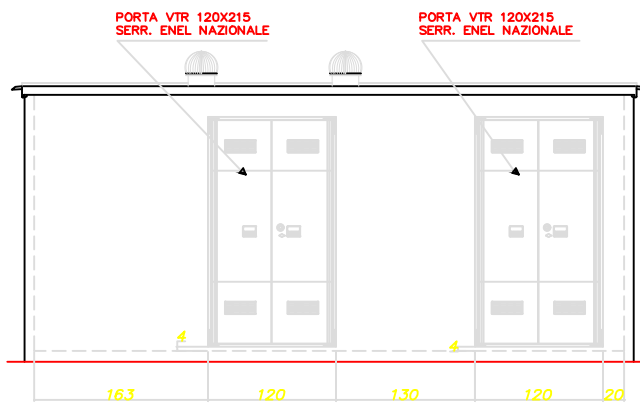
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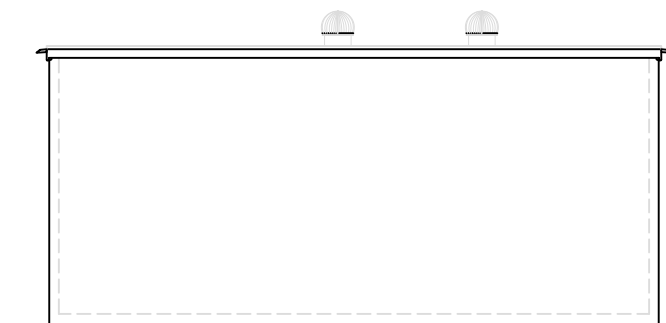
PIANTA COPERTURA



VISTA FRONTALE



VISTA POSTERIORE



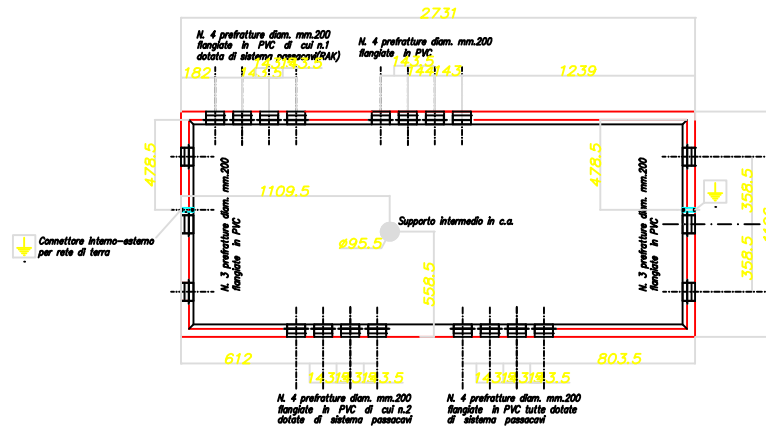
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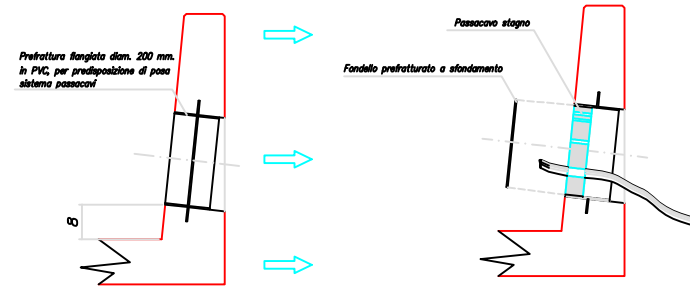
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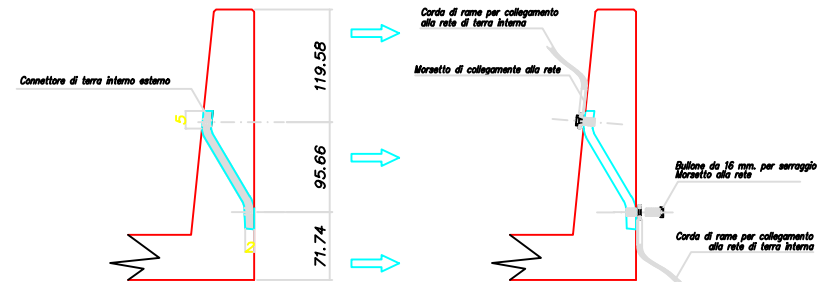
PIANTA
(Scala 1:50)



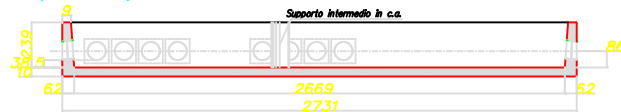
Particolare prefabbrite Flange/Passacavo
(Scala 1:10)



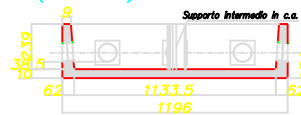
Particolare connessione rete di terra interna / esterna
(Scala 1:10)



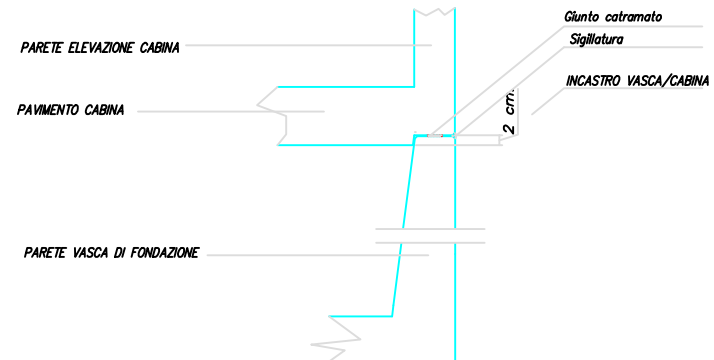
SEZIONE LONGITUDINALE
(Scala 1:50)



SEZIONE TRASVERSALE
(Scala 1:50)



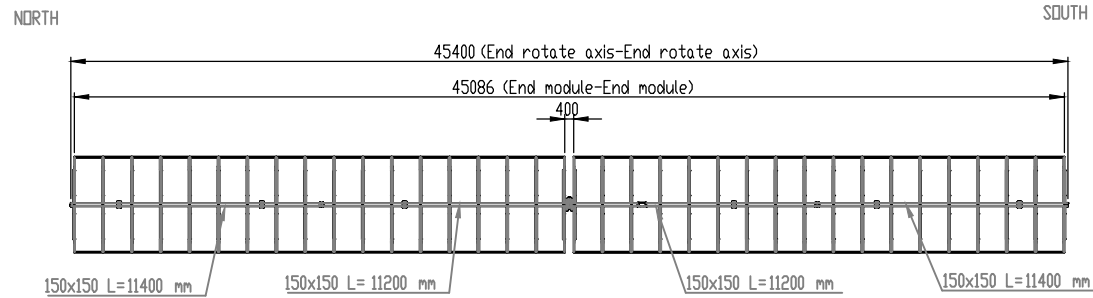
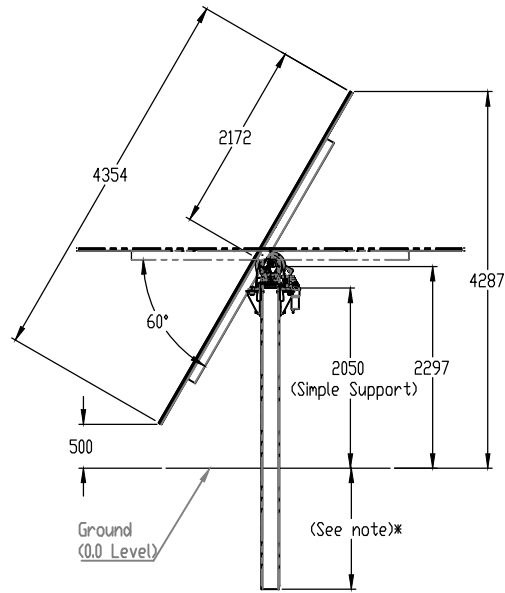
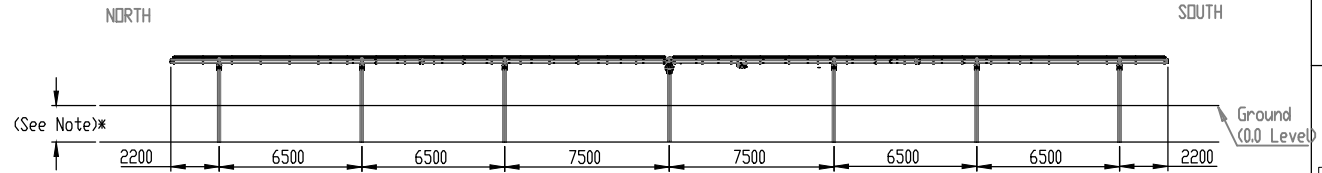
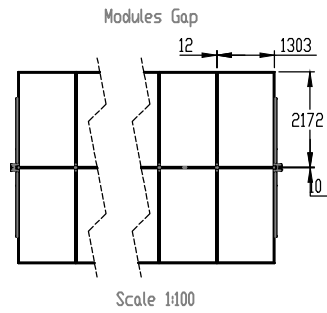
Particolare sistema connessione Cabina / Vasca
(Scala 1:10)



Module: HIKu7_CS7L

Tracker at 0° tilt angle (Horizontal position)

2x34 Configuration



Note: This is a preliminary drawing, detail drawing will be sent together with the detailed engineering of the project.

Note*

Scale 1:50

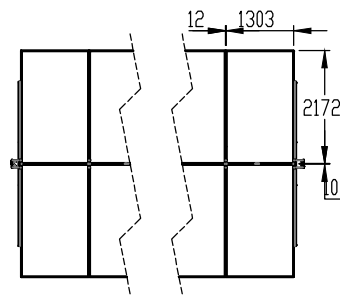
Simple Support - Standard Embedment Length	
60 Degrees	
1.3m	(1336mm)
1.5m	(1565mm)
1.7m	(1763mm)
2m	(2073mm)
2.5m	(2530mm)
2.8m	(2835mm)
3m	(3089mm)

*Any change of those lengths indicated in the table, must be studied and approved for the specific project.

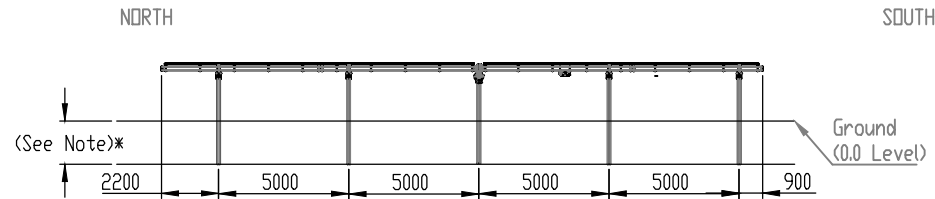
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DOO	08/02/21	First Issued	A.Morote	F.Garcia	J.Belmonte
Rev.	Date	Description/Changes control	Issued by	Revised by	Approved by
EXCEPT INDICATION ALL DIMENSIONS ARE IN MM & (") INCHES. ALL WEIGHTS ARE DWG.		PROPRIETARY AND CONFIDENTIAL. THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SOLTEC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SOLTEC IS PROHIBITED.	Lycycle Design		
Standard	-	Description	TRACKER SF7-2x34		
Finish	-	Dwg. no.	SF7-930	Drawing method	Scale: 1:200
		Mat.	See BOM	Weight(kg)	-
				Size	A3
				Rev.	DOO



Modules Gap



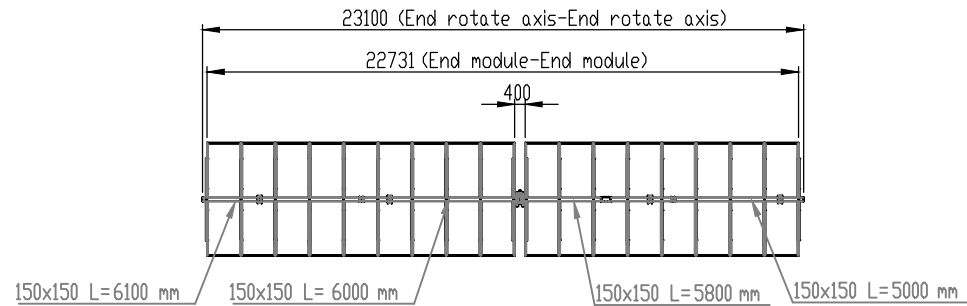
Scale 1:100



(See Note)*

Ground (0.0 Level)

NORTH SOUTH

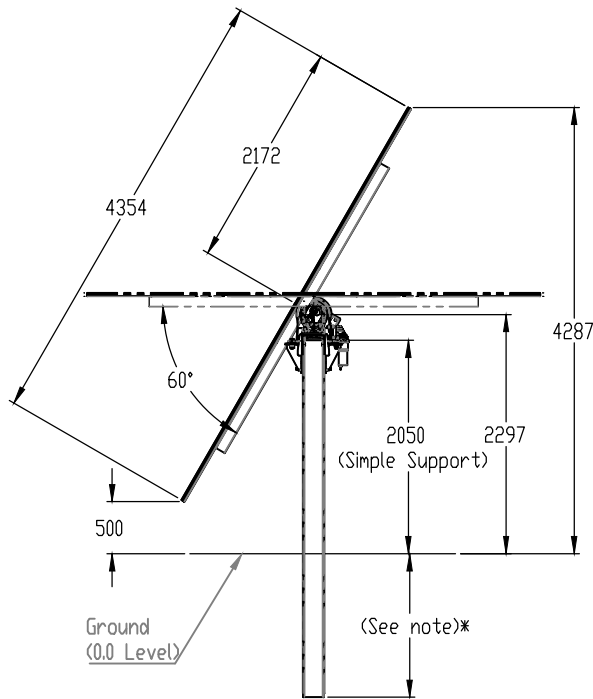


150x150 L=6100 mm

150x150 L=6000 mm

150x150 L=5800 mm

150x150 L=5000 mm



Scale 1:50

Note: This is a preliminary drawing, detail drawing will be sent together with the detailed engineering of the project.

Note*

Simple Support - Standard Embedment Length	
60 Degrees	
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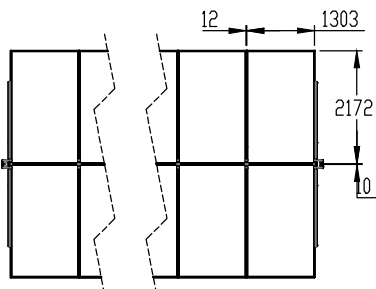
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Standard		Description		Soltec	
-		TRACKER SF7-2x17		A	
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-		Weight(kg) -		Rev. D00	
-		Drawing method:		-	

Module: HIKu7_CS7L

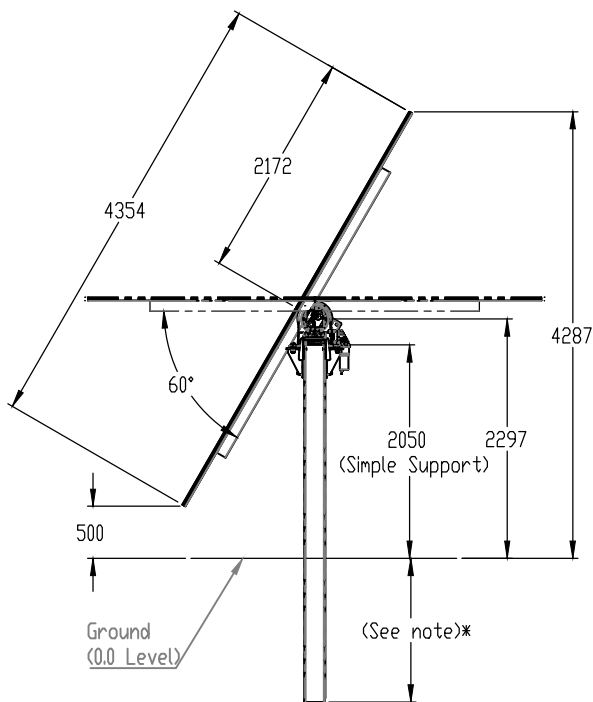
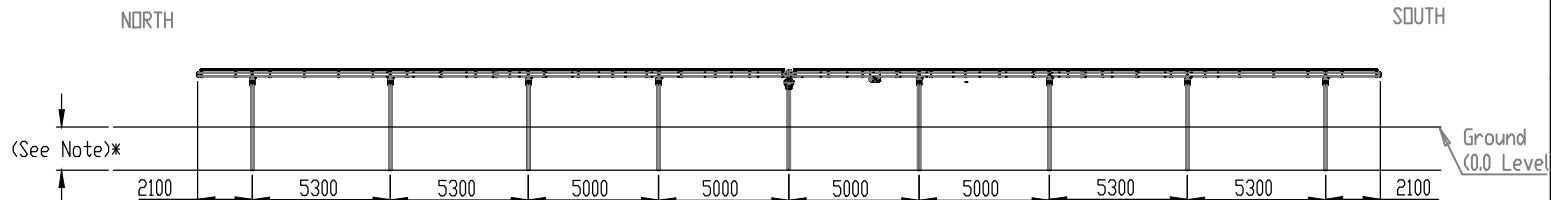
Tracker at 0° tilt angle (Horizontal position)

2x34 Configuration

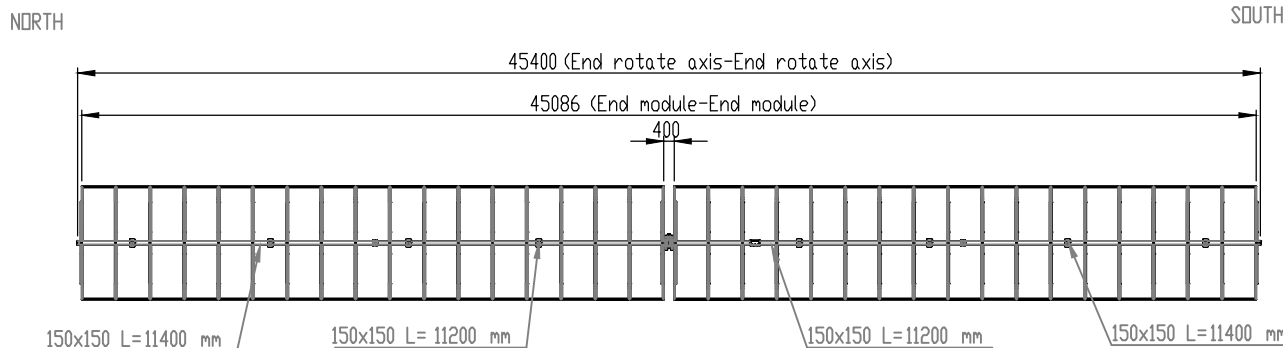
Modules Gap



Scale 1:100



Scale 1:50



Note: This is a preliminary drawing, detail drawing will be sent together with the detailed engineering of the project.

Note*

Simple Support - Standard Embedment Length	
60 Degrees	
1.3m (1336mm)	
1.5m (1565mm)	
1.7m (1763mm)	
2m (2073mm)	
2.5m (2530mm)	
2.8m (2835mm)	
3m (3089mm)	

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D00	29/03/21	First Issued	AMorote	F.García	AI.Hernández
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-		Drawing method:		-	