

ELENCO FOGLI

[illegible]

R E G I O N E L O M B A R D I A
C O M U N E D I A R C O N A T E
P R O V I N C I A D I M I L A N O

PROCEDURA ABILITATIVA SEMPLIFICATA (P.A.S.)
art. 6 D.Lgs. 28/2011

LUGLIO 2024

Elaborato:

A.05 - Planimetria generale impianto

Committente:

NEOEN

Neoen Renewables Italia Srl

Via G. Rovani, 7

20123 Milano

neoenrenewablesitalia@pecplus.it

Progettisti:



HC Human Capital Srl

Via Montello, 8/bis

20822 - Seveso (MB)

info@human-capital.it

humancapital@legalmail.it

(studio
next.)

Studio Next Srls

Arch. Laura Paparo

Piazza San Martino, 31

20001 - Inveruno (MI)

info@studio-next.net

studio.next@pec.it





GENERAL INFORMATION					
Total power, kWp_DC					9403,42
Total power, kWp_AC					8400
Nominal power (CEI 0-16, see 2E100 for details - sum of minor between AC and DC on each inverter)					
Module power, Wp_DC					590
Module quantity					15938
Azimut					0
Modules manufacturer/ model	TWSolar // TWMND -72HD560-590W				
Inverter manufacturer/ model	Huawei // SUN2000-330KTL-H1				
Inverters nominal AC power, kW_AC					300
Inverters n.					28
Capacity, kW_AC					8400
Cadastral data	Arconate (MI) - fg.6 mapp. 3				
Road lenght, m					da definire
Road Width, m					da definire
Fence length, m					1833
Mitigation length, m					1661
Mitigations, m2					1495

DATI IMPIANTO					
NOME IMPIANTO	POTENZA DI PICCO [Kw]	POTENZA DI MODULO FV [W]	QUANTITA' MODULI	QUANTITA' TRACKER	DISTANZA INTERFILA [m]
IMP-01	2193,62	590	3718	143	5
IMP-02	3620,24	590	6136	236	5
IMP-03	3589,56	590	6084	234	5
TOTALE	9403,42	590	15938	613	5

LEGENDA

- VIABILITA' PRINCIPALE
- FASCE DI MITIGAZIONE DA PIANTUMARE
- RECINZIONE
- CONFINE MAPPALE
- TRACKER (26 MODULI)
- 1/2 TRACKER (13 MODULI)
- CABINE DI TRASFORMAZIONE
- CABINE DI CONSEGNA E UTENTE/MT
- LINEA ELETTRICA ESISTENTE
- INVERTER

IMPIANTO FOTOVOLTAICO "ARCONATE"

REGIONE LOMBARDIA
COMUNE DI ARCONATE
PROVINCIA DI MILANO

PROCEDURA ABILITATIVA SEMPLIFICATA (P.A.S.)
art. 6 D.Lgs. 28/2011

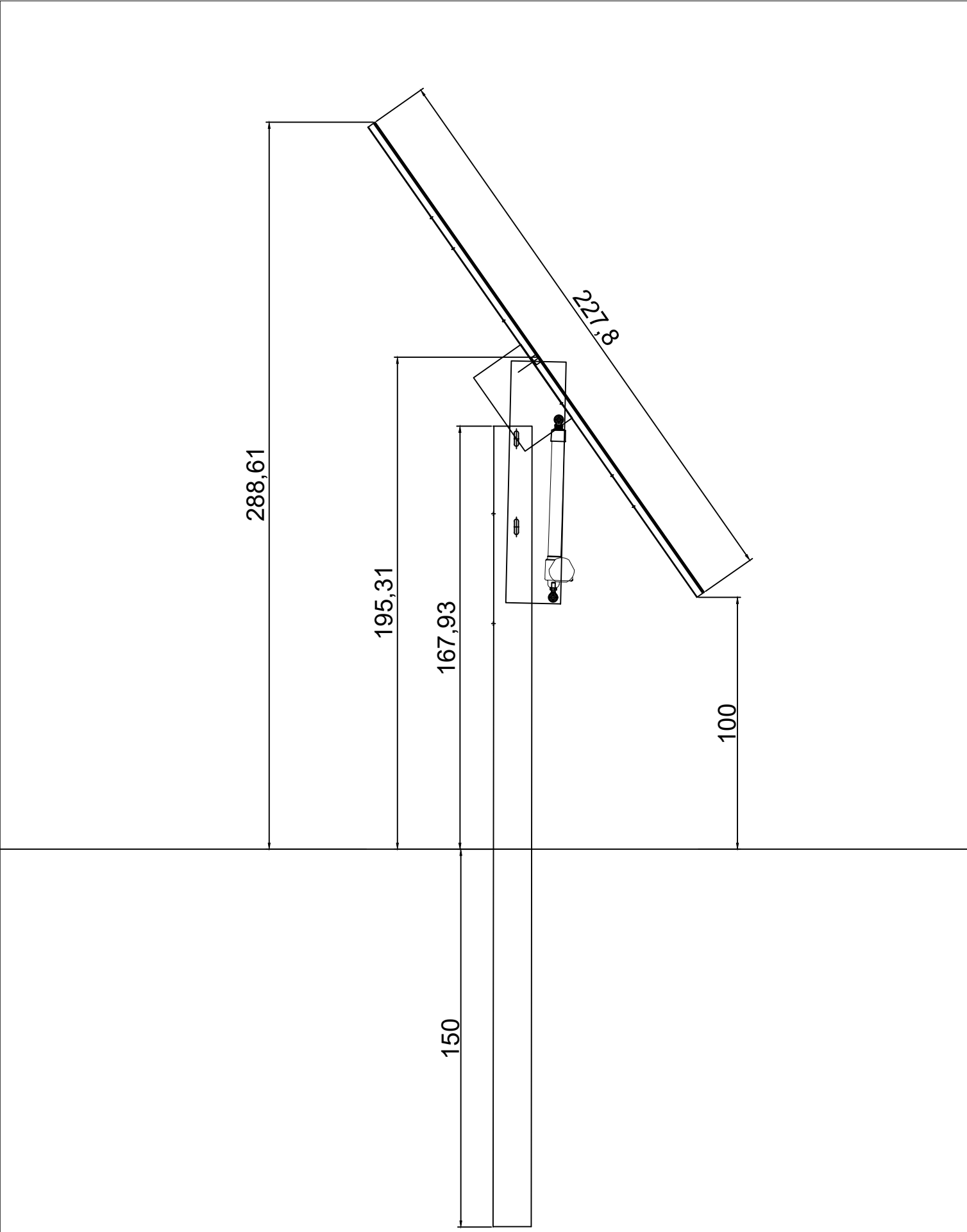
LUGLIO 2024

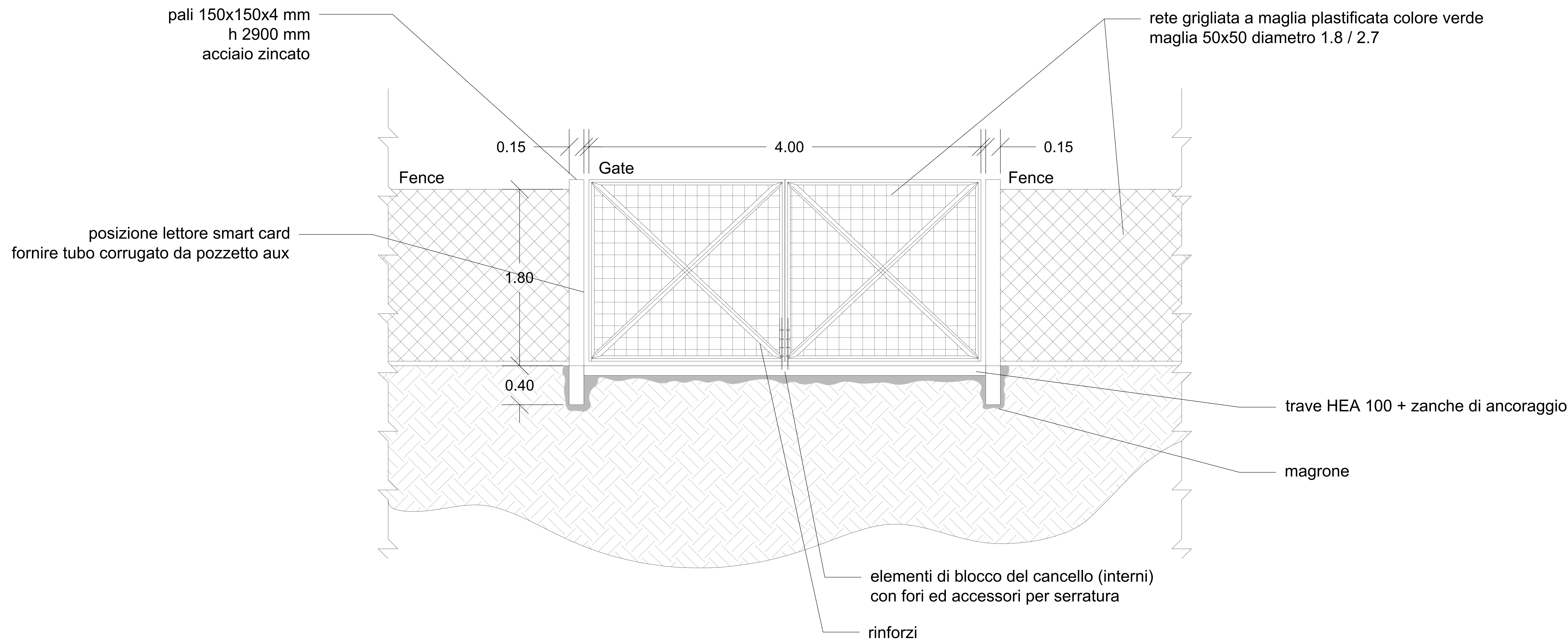
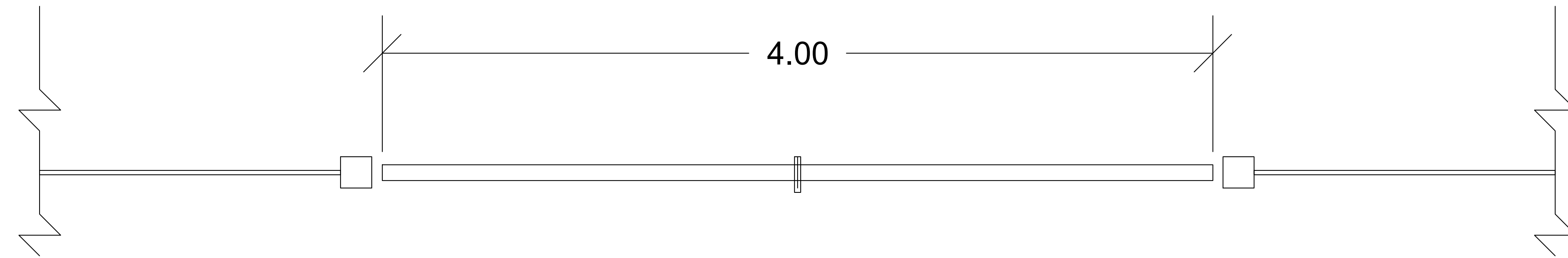
Elaborato:
A.05 - Planimetria generale impianto

Committente:
NEOEN **Neoen Renewables Italia Srl**
Via G. Rovani, 7
20123 Milano
neoenrenewablesitalia@pecplus.it

Progettisti:
human capital **HC Human Capital Srl**
Via Montello, 8/bis
20822 - Seveso (MB)
info@human-capital.it
humancapital@legalmail.it

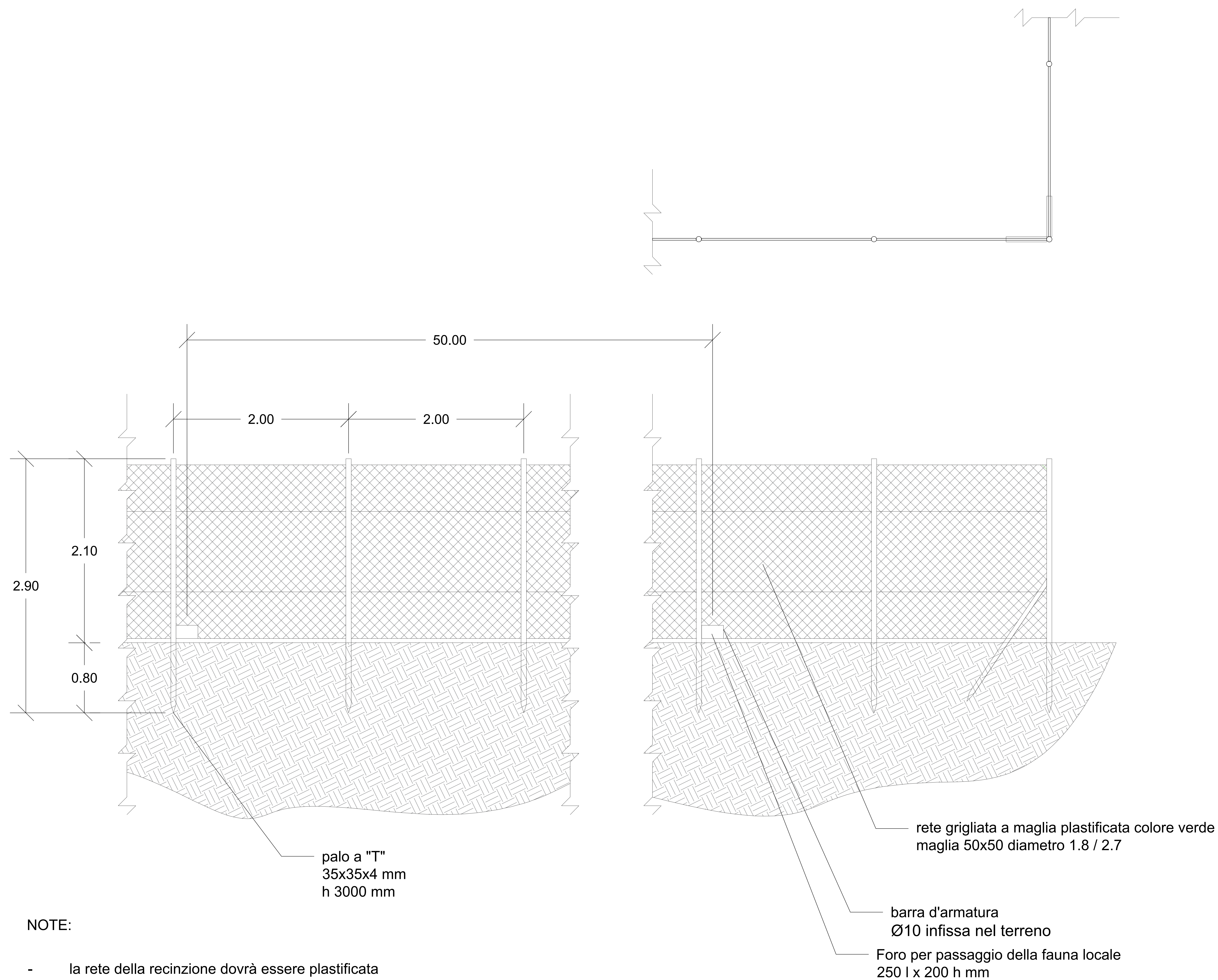
(studio next.) **Studio Next Srls**
Arch. Laura Paparo
Piazza San Martino, 31
20001 - Inveruno (MI)
info@studio-next.net
studio.next@pec.it





NOTE:

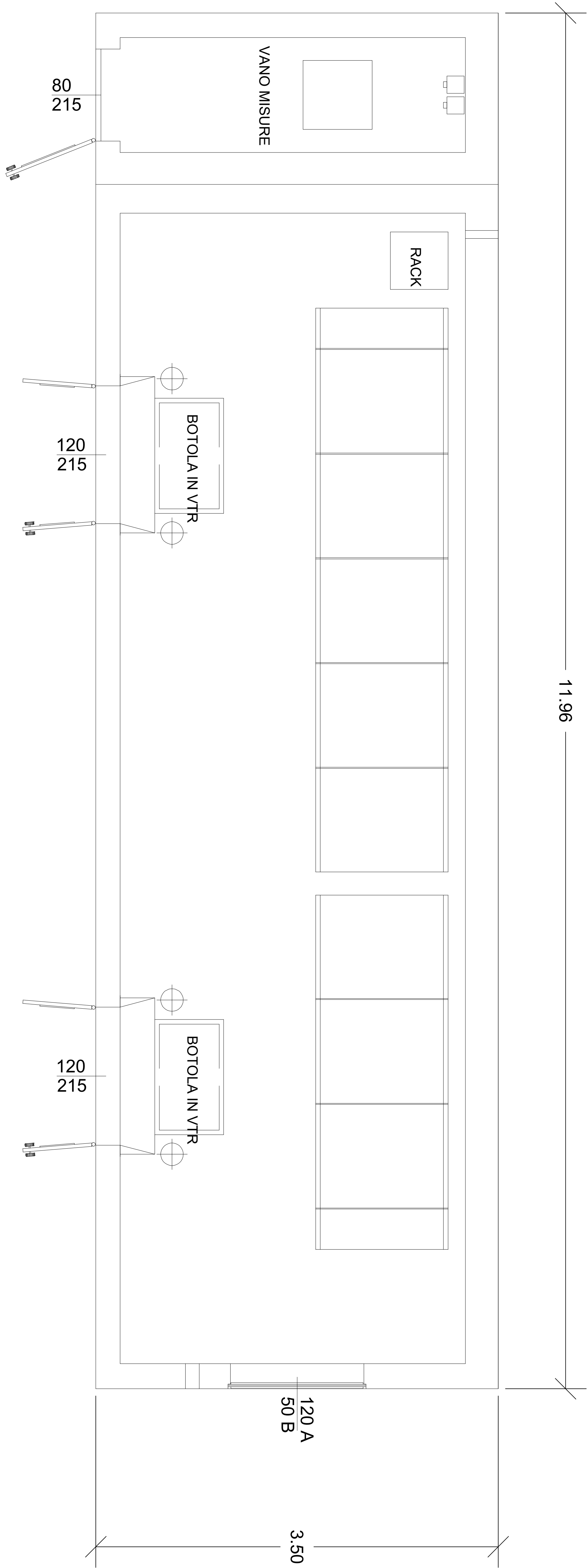
- la rete grigliata dovrà essere plastificata
- i pali dovranno essere plastificati



NOTE:

- la rete della recinzione dovrà essere plastificata
- i pali della recinzione dovranno essere plastificati
- 4 cavi di tensionamento posti due alle estremità superiore ed inferiore e due centralmente
- saetta da istallare una ogni 10 pali e su ogni spigolo

Lato D

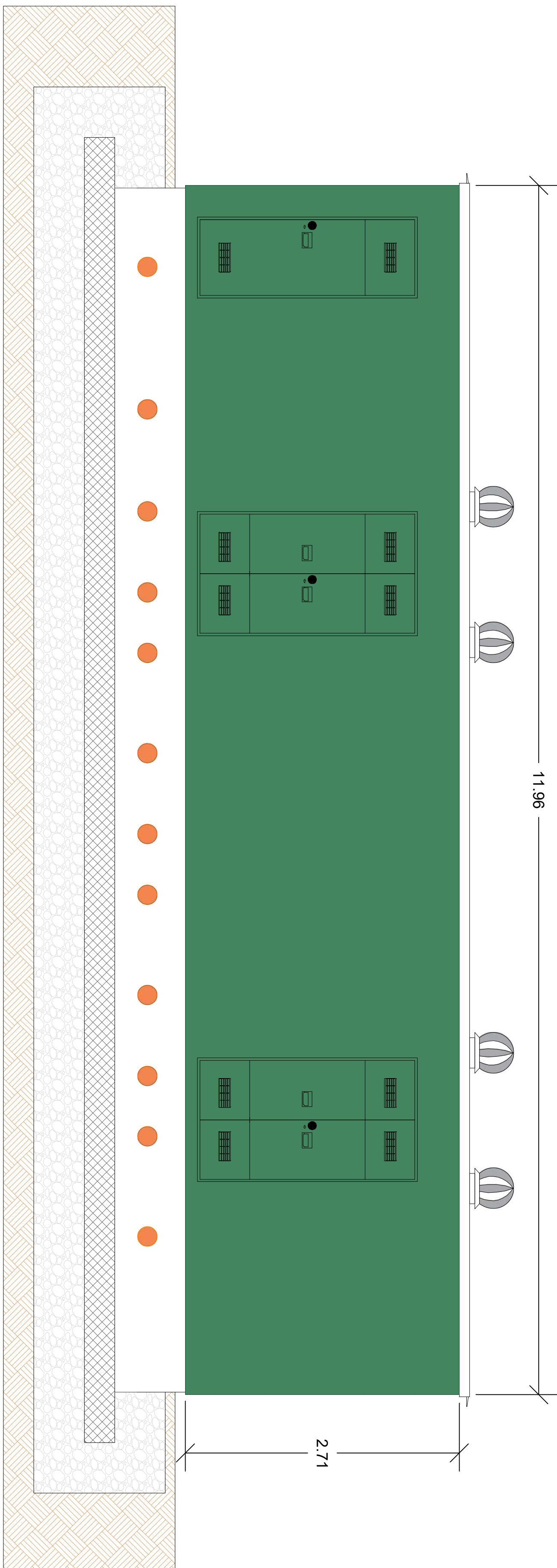


Lato C

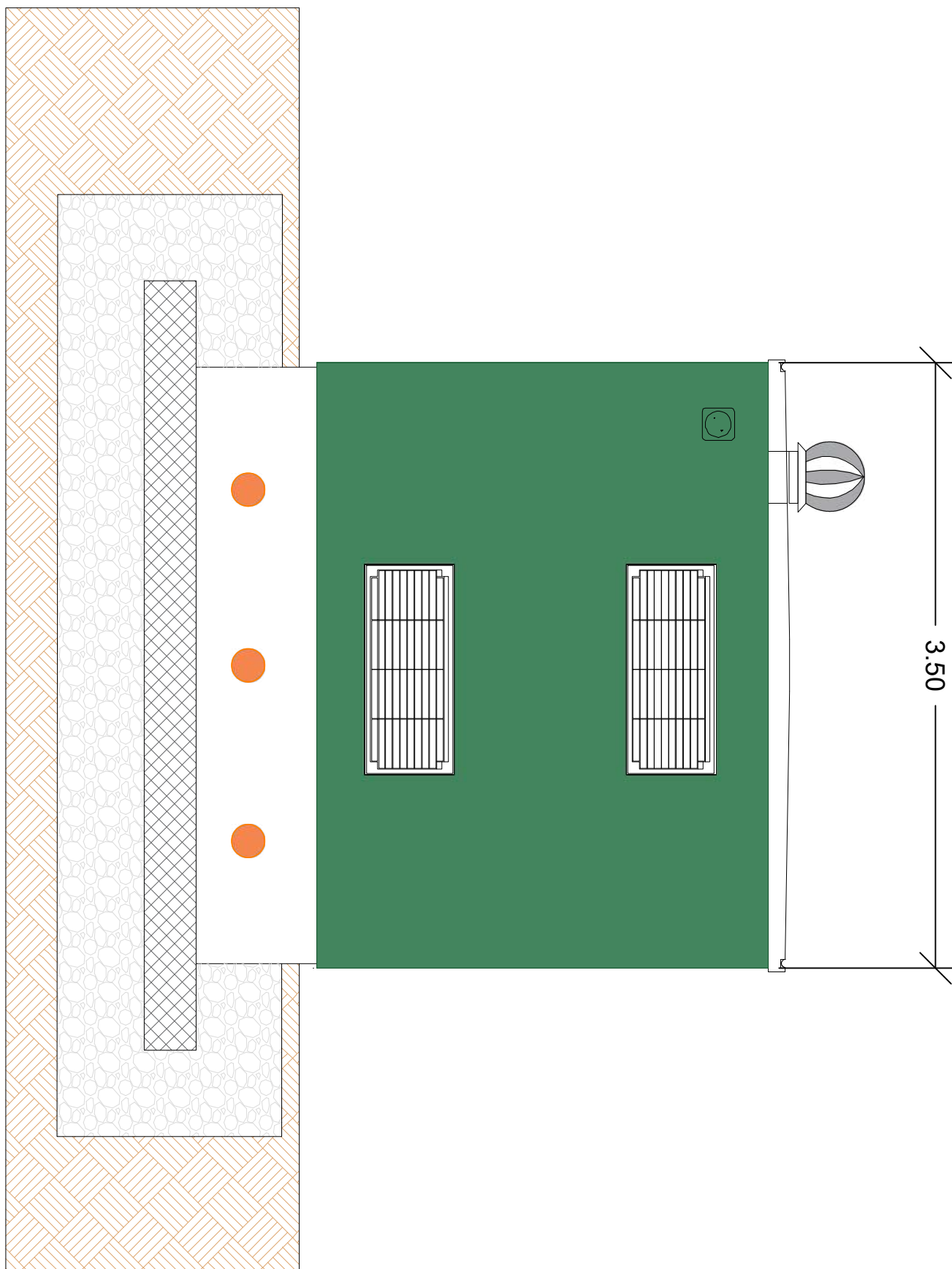
Lato B

Lato A

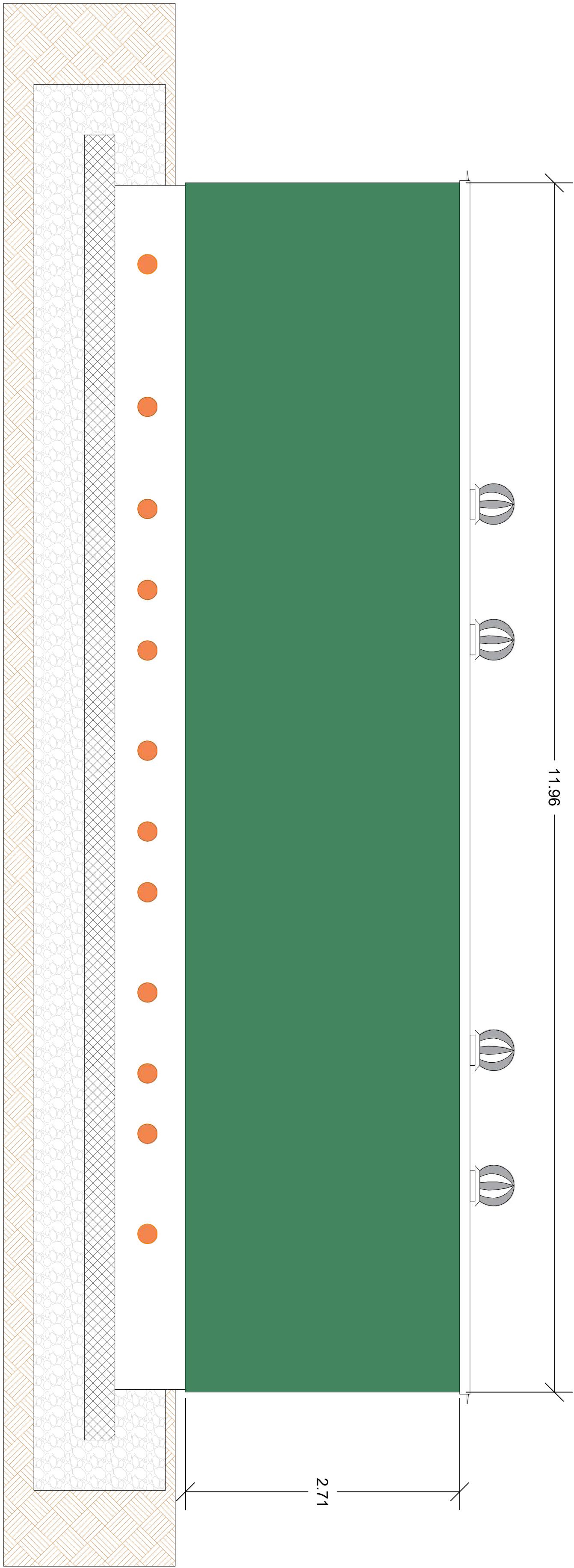
Prospetto lato A



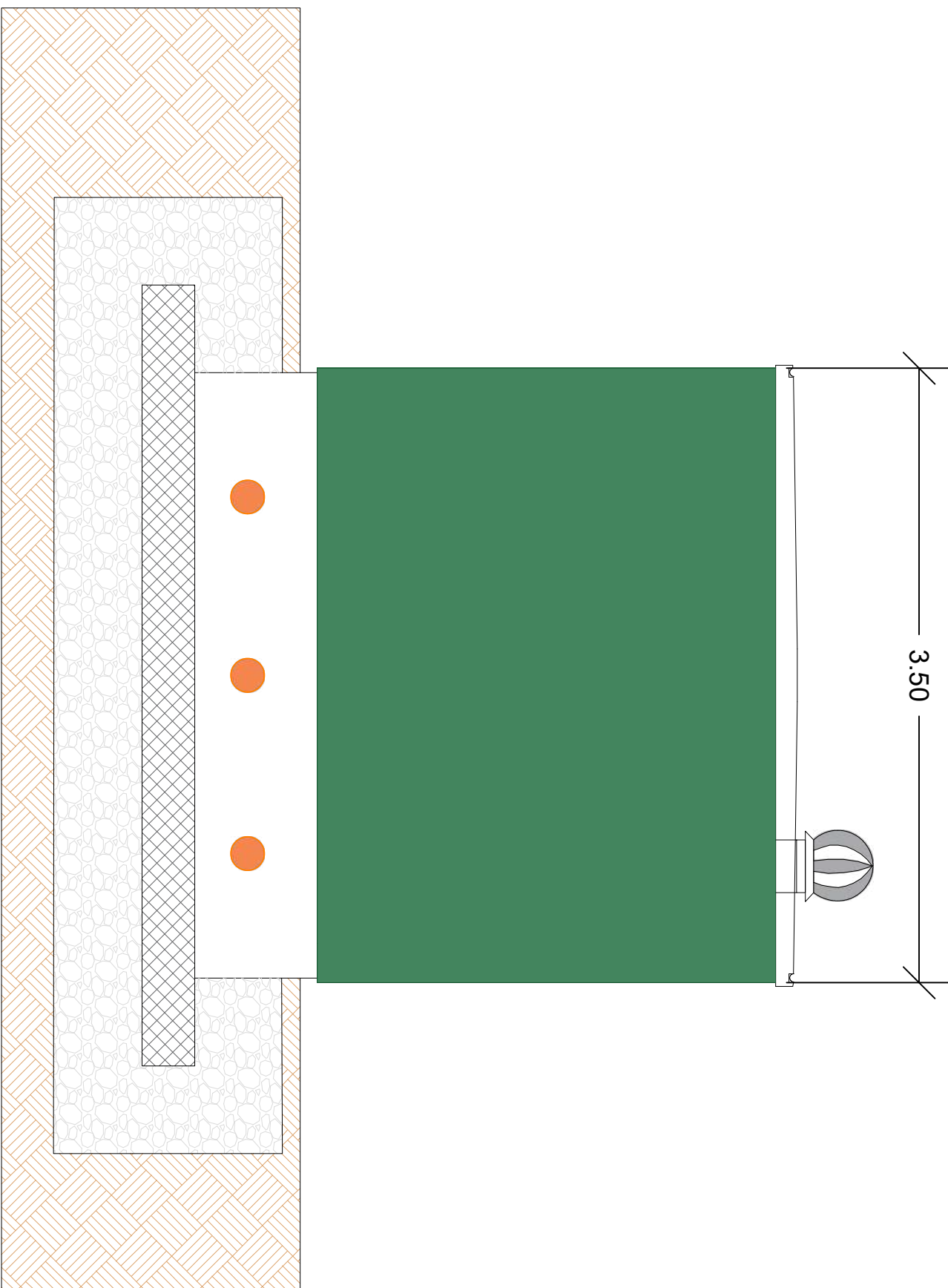
Prospetto lato B



Prospetto lato C



Prospetto lato D

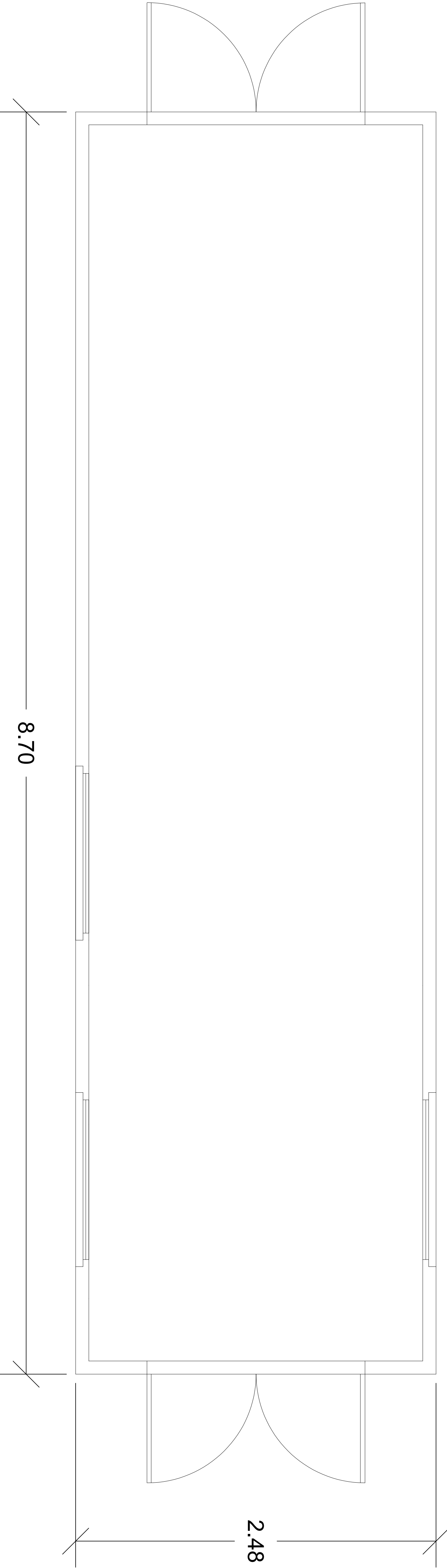


Lato D

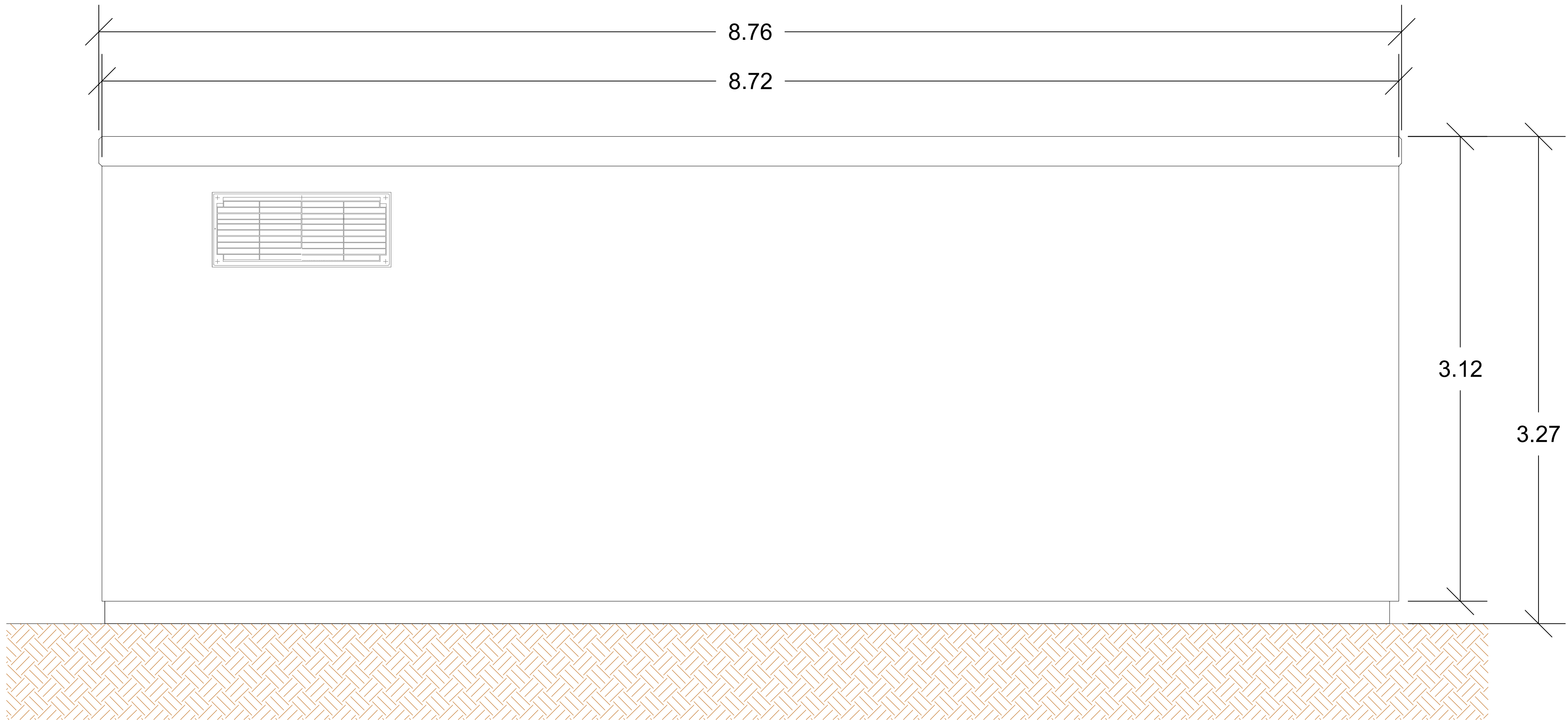
Lato C

Lato A

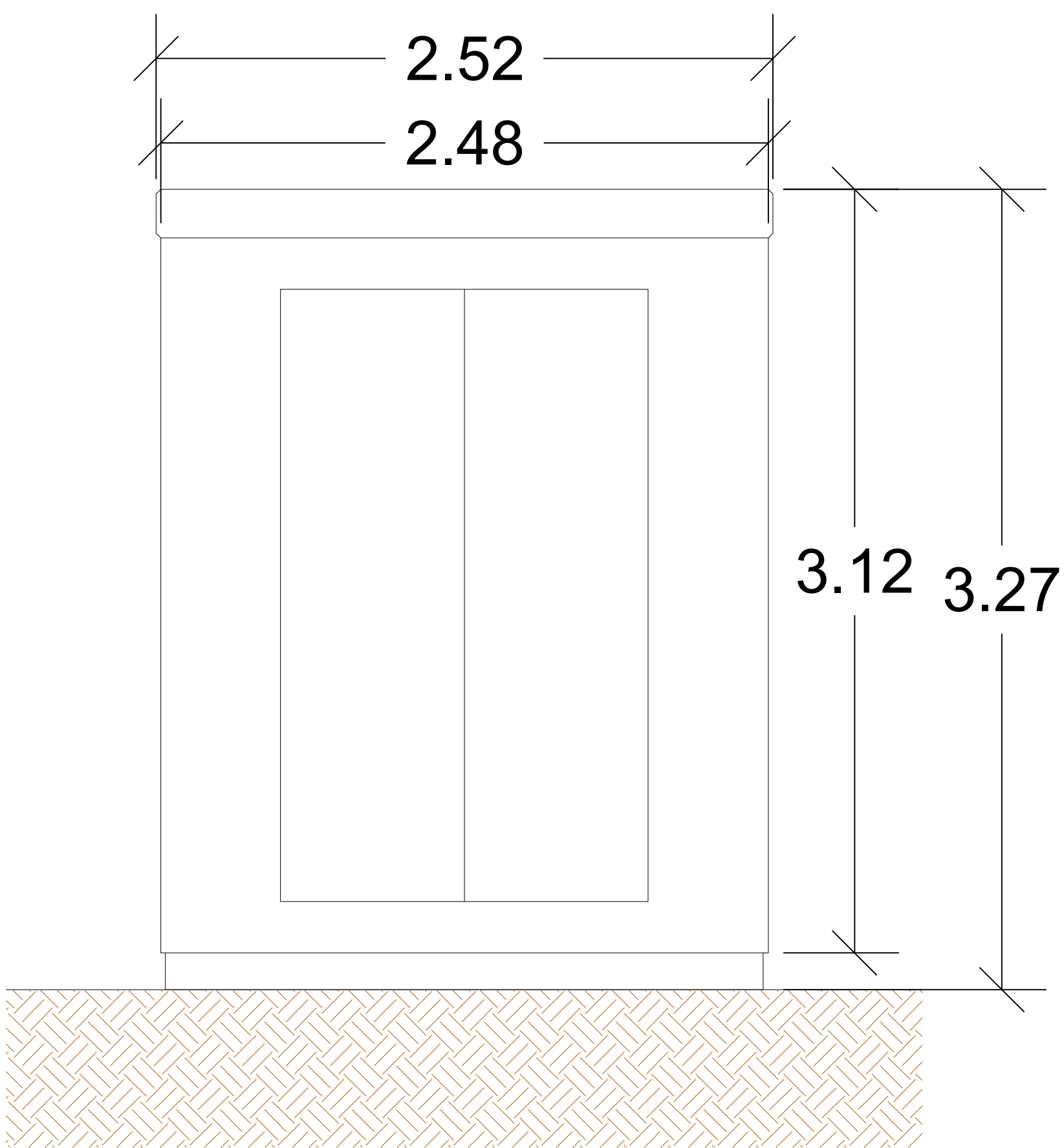
Lato B



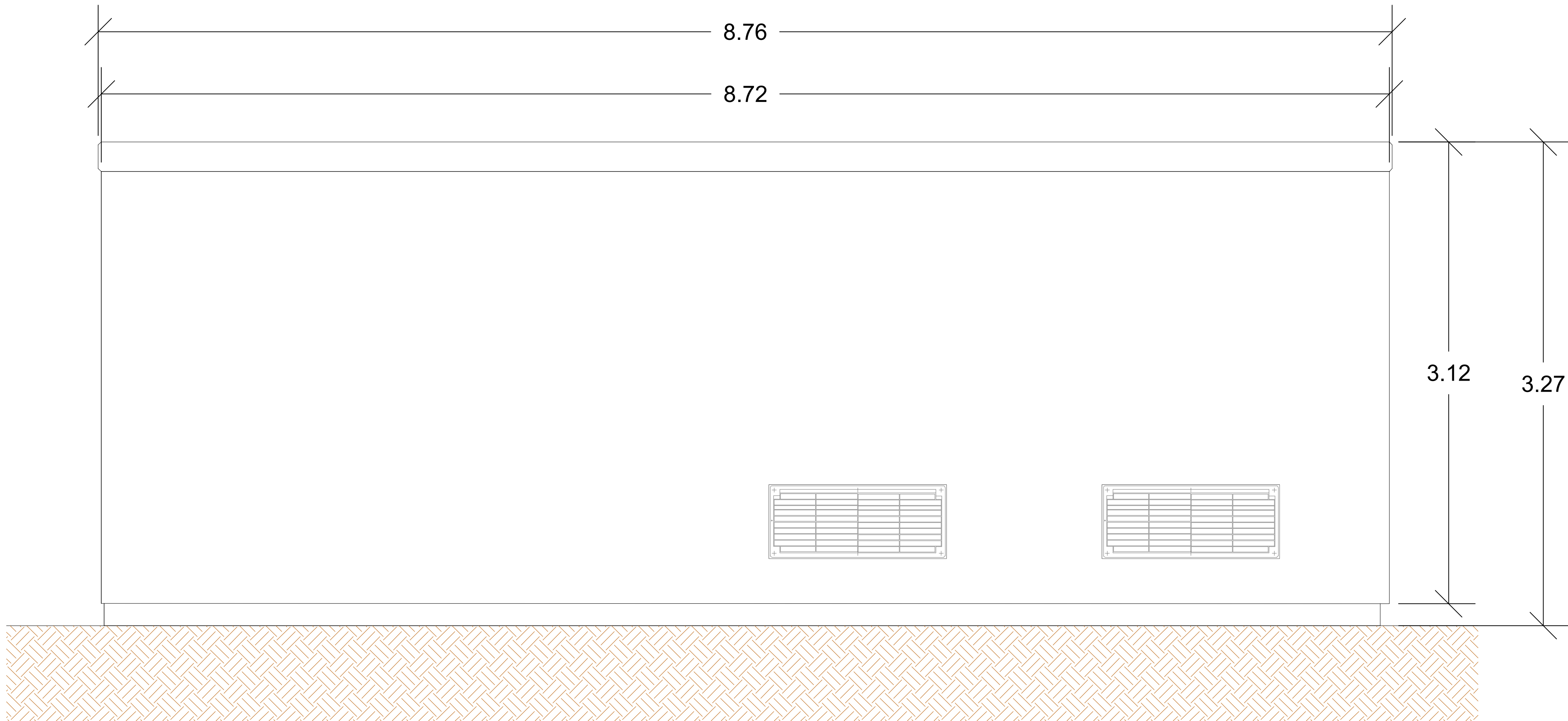
Prospetto lato A



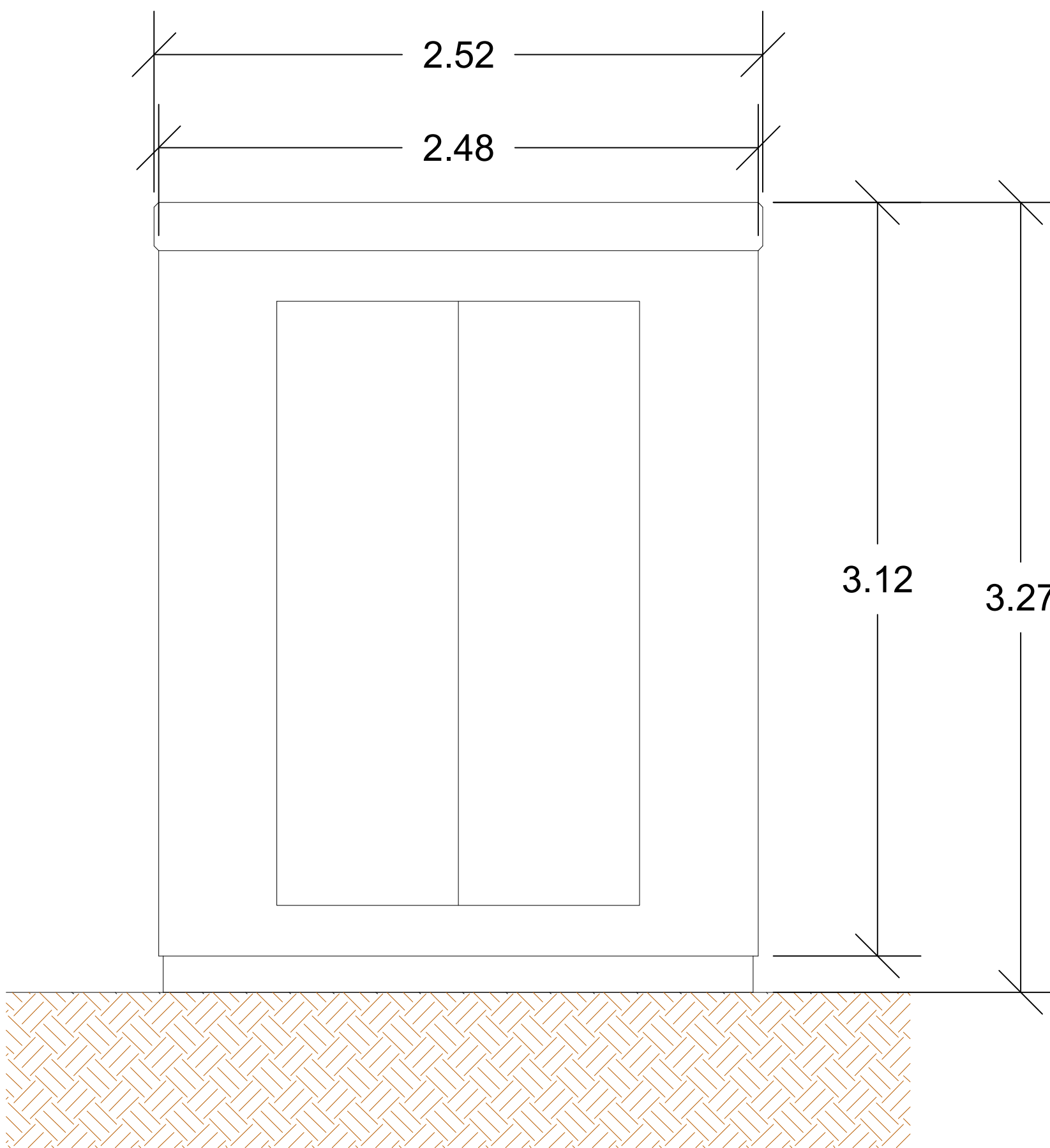
Prospetto lato B



Prospetto lato C



Prospetto lato D



SUN2000-330KTL-H1

Output Characteristics Curve

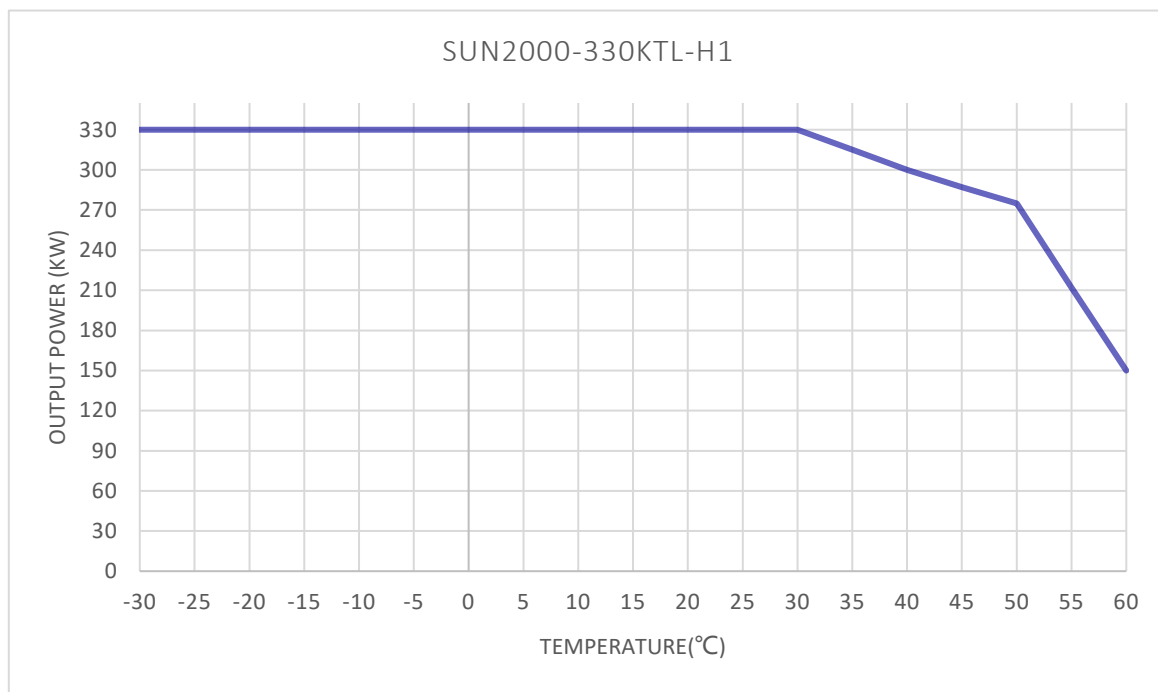


Huawei Technologies Co., Ltd.

Version	Created by	Date	Remarks
01	HUAWEI	22/08/2022	Preliminary
02	HUAWEI	30/09/2022	Add DC voltage Derating Curve

Power De-rating Curve VS. Ambient Temperature

Power De-rating Curve VS. Ambient Temperature of SUN2000-330KTL-H1:

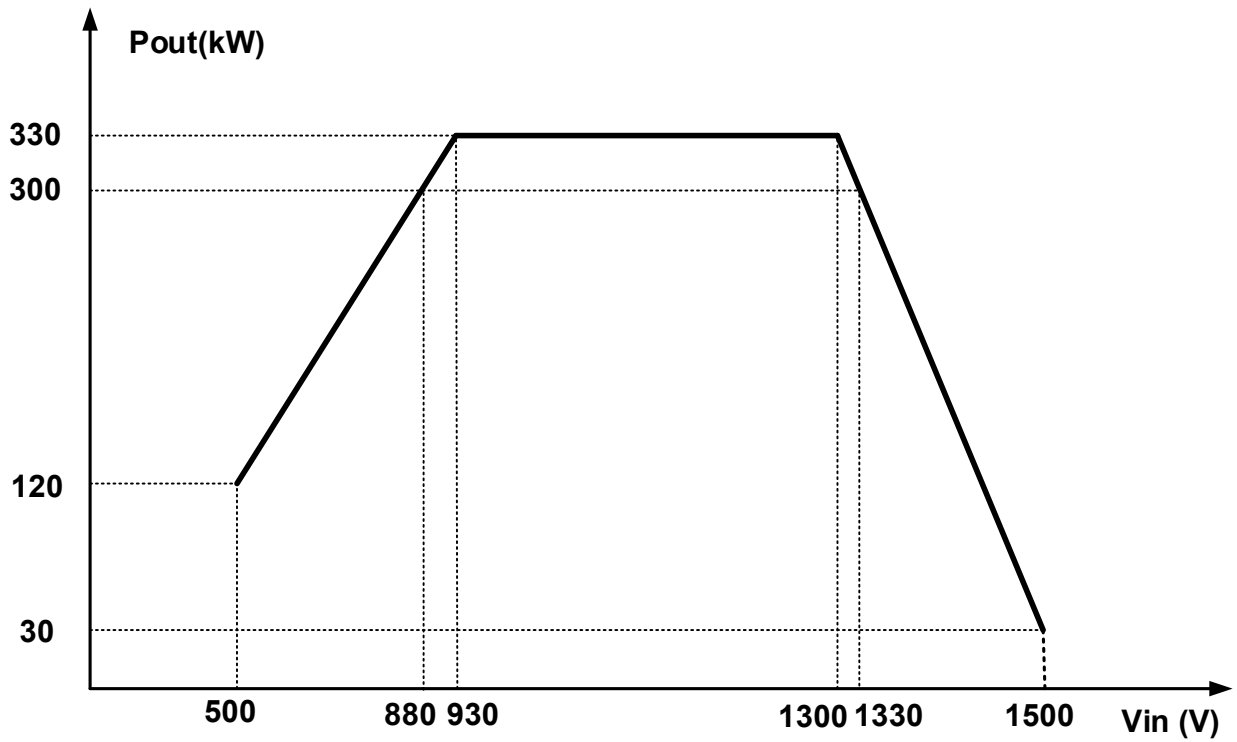


Grid Voltage: 800Vac, PF=1, output power under specific DC working voltage

Model	-30° C	-25° C	-20° C	-15° C	-10° C	-5° C	0° C	5° C	10° C	15° C
SUN2000-330KTL-H1	330 kW	330 kW	330 kW	330 kW	330 kW	330 kW	330 kW	330 kW	330 kW	330 kW
	20° C	25° C	30° C	35° C	40° C	45° C	50° C	55° C	60° C	
	330 kW	330 kW	330 kW	315 kW	300 kW	287 kW	275 kW	212 kW	150 kW	

Power- DC Input Voltage Curve

Power-DC Input Voltage Curve of SUN2000-330KTL-H1

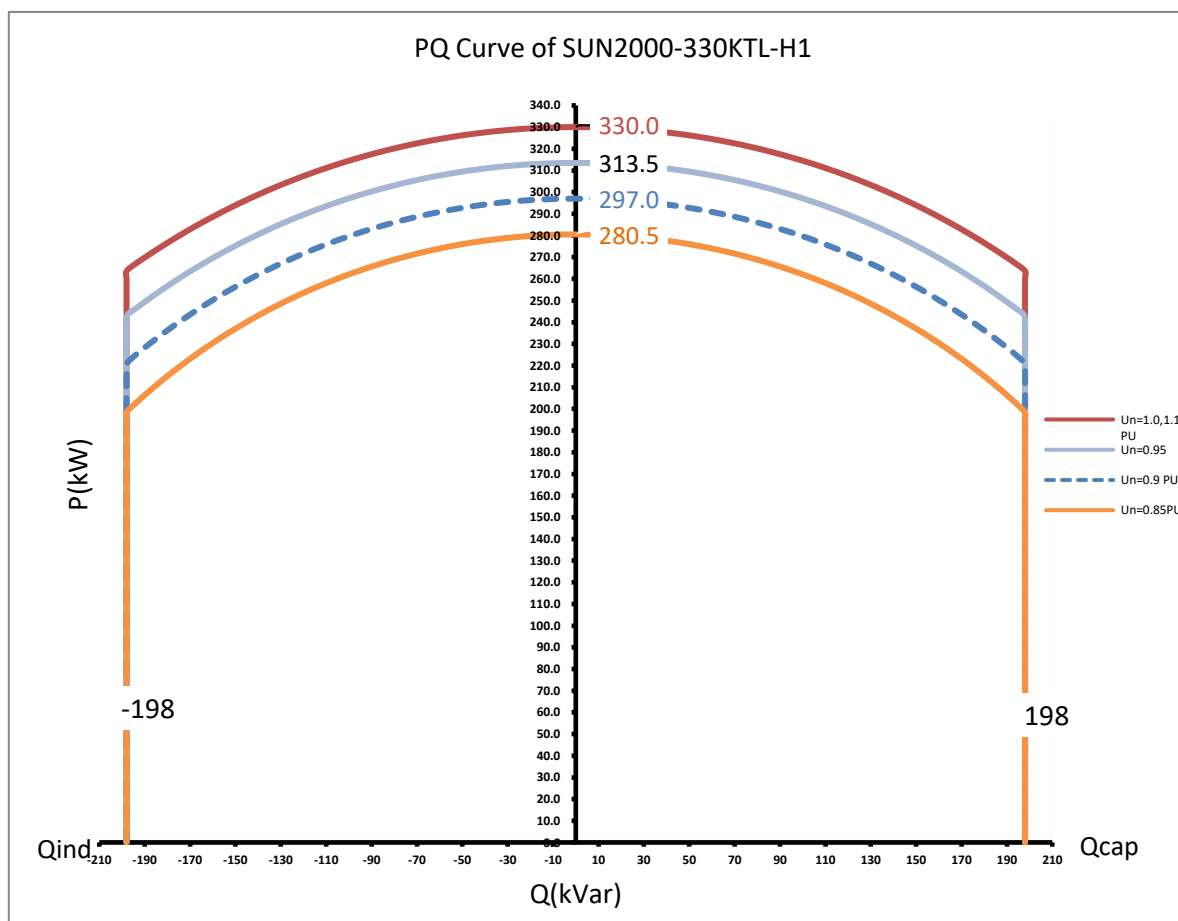


Note:

The power-DC input voltage curve is shaped when PF equals 1.0.

P-Q Curve

P-Q Curve of SUN2000-330KTL-H1



Note:

When SUN2000-330KTL-H1 operates at grid voltage 1.1 p.u./1.0 pu., the output power can reach 330 kW (when PF=1) or 330 kVA.

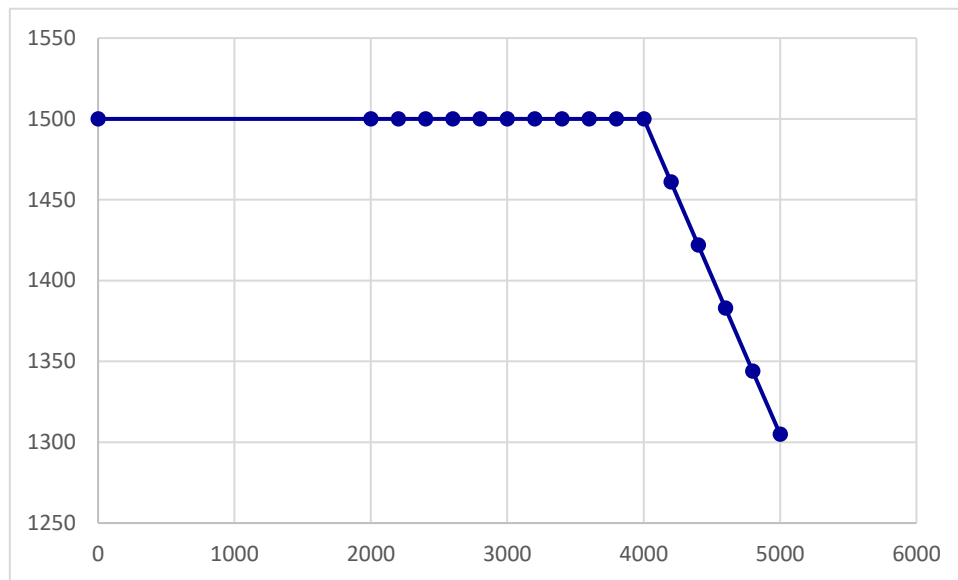
When SUN2000-330KTL-H1 operates at grid voltage 0.95 p.u., the output power can reach 313.5 kW (when PF=1) or 313.5 kVA.

When SUN2000-330KTL-H1 operates at grid voltage 0.9 p.u., the output power can reach 297 kW (when PF=1) or 297 kVA.

When SUN2000-330KTL-H1 operates at grid voltage 0.85 p.u., the output power can reach 280.5 kW (when PF=1) or 280.5 kVA.

DC Voltage Curve VS. Altitude

DC Voltage Curve of SUN2000-330KTL-H1:



Note:

The power of SUN2000-330KTL-H1 inverter doesn't derate when altitude ≤ 4000 m.

When altitude > 4000 m, DC voltage derating should be taken into consideration and DC voltage derates in accordance with 20 V/100 m.

The rated AC voltage (800 V) of the SUN2000 inverter doesn't derate when altitude ≤ 5000 m.



TWMND-72HD560-590W

N-type Half-cell Bifacial Module (72)

PRODUCT FEATURES



High Power Output
Low LCOE



Maximum Power
590W+



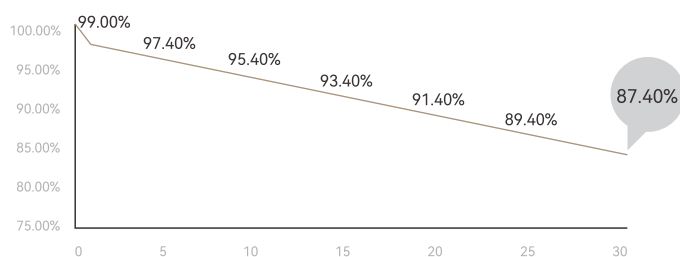
High
Reliability



Low
LID

POWER WARRANTY

1st year <1%, 0.4% power degradation per year from 2 to 30 years



12-year Warranty for Materials



30-year Warranty for Linear Power Output

MANAGEMENT SYSTEM AND PRODUCT CERTIFICATION

ISO9001: 2015/Quality Management System

ISO14001: 2015/Environment Management System

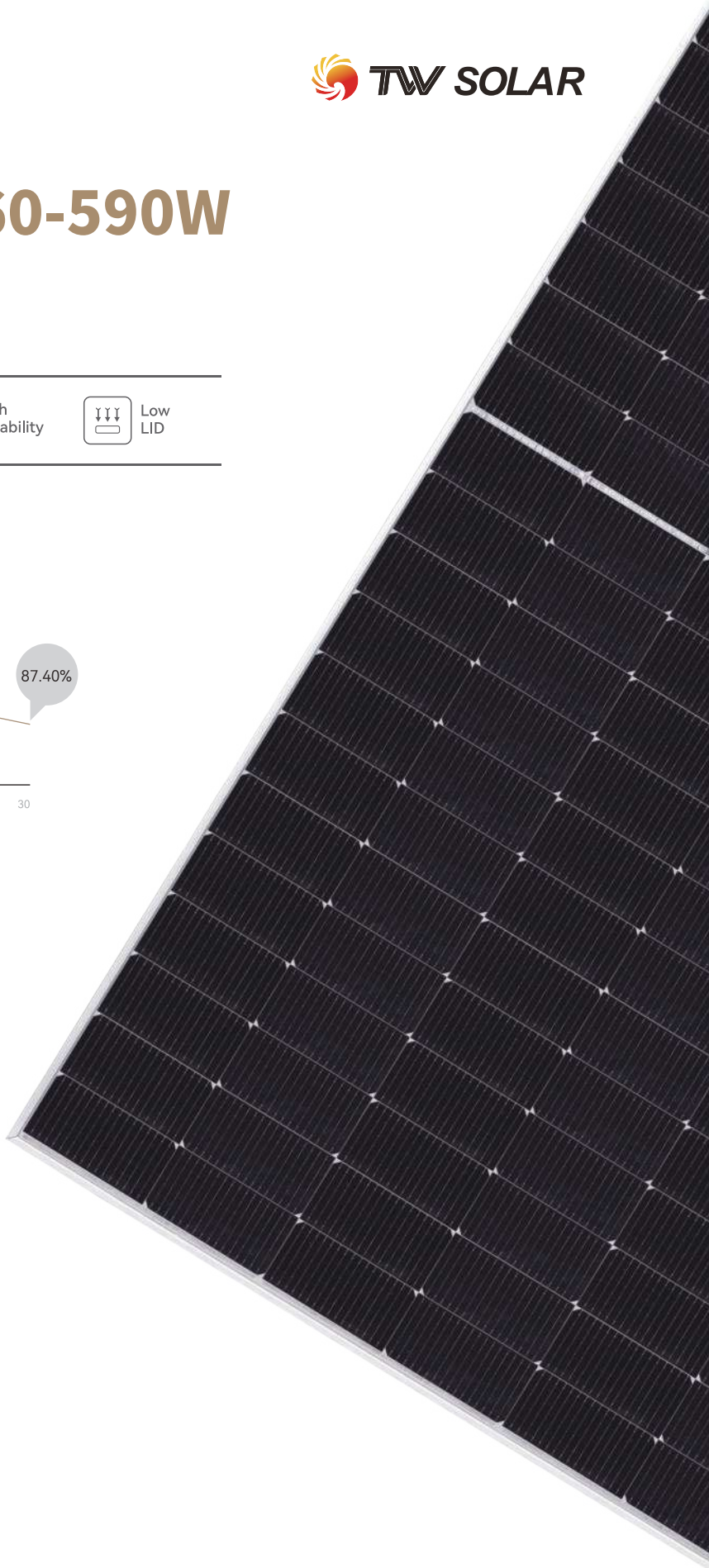
ISO45001: 2018/Occupational Health and Safety Management System



Front



Side



Electrical Characteristics (STC)

Module Type: TWMND-72HDXXX							
Maximum Power: Pmax [W]	560	565	570	575	580	585	590
Open Circuit Voltage: Voc [V]	50.84	51.04	51.24	51.44	51.64	51.84	52.04
Short Circuit Current: Isc [A]	14.13	14.17	14.21	14.25	14.29	14.33	14.37
Voltage at Maximum Power: Vmp [V]	42.48	42.68	42.88	43.08	43.28	43.48	43.68
Current at Maximum Power: Imp [A]	13.18	13.24	13.29	13.35	13.40	13.46	13.51
Module Efficiency: η [%]	21.7	21.9	22.1	22.3	22.5	22.6	22.8
STC: Irradiance 1000W/m ² , Cell Temperature 25°C, Air Mass1.5, Measuring Tolerance: $\pm 3\%$							

Electrical Characteristics (NMOT)

Maximum Power: Pmax [W]	421.1	424.8	428.6	432.4	436.1	439.9	443.7
Open Circuit Voltage: Voc [V]	48.29	48.48	48.67	48.86	49.05	49.24	49.43
Short Circuit Current: Isc [A]	11.42	11.47	11.52	11.56	11.60	11.63	11.66
Voltage at Maximum Power: Vmp [V]	39.84	39.89	39.95	40.00	40.19	40.37	40.56
Current at Maximum Power: Imp [A]	10.56	10.63	10.70	10.78	10.85	10.90	10.94
NMOT: Irradiance 800W/m ² , Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s							

Electrical characteristics with different rear side power gain

5%	Maximum Power: Pmax[W]	588.0	593.3	598.5	603.8	609.0	614.3	619.5
	Module Efficiency: η [%]	22.8	23.0	23.2	23.4	23.6	23.8	24.0
15%	Maximum Power: Pmax[W]	644.0	649.8	655.5	661.3	667.0	672.8	678.5
	Module Efficiency: η [%]	24.9	25.2	25.4	25.6	25.8	26.0	26.3
25%	Maximum Power: Pmax[W]	700.0	706.3	712.5	718.8	725.0	731.3	737.5
	Module Efficiency: η [%]	27.1	27.3	27.6	27.8	28.1	28.3	28.5

Temperature Ratings

Temperature Coefficient (Pmax)	-0.30%/°C
Temperature Coefficient (Voc)	-0.25%/°C
Temperature Coefficient (Isc)	0.046%/°C
NMOT	45 \pm 2°C

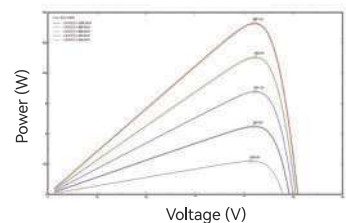
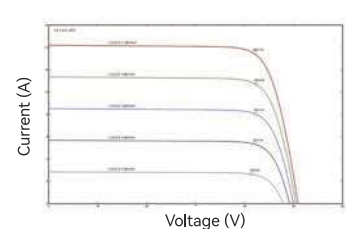
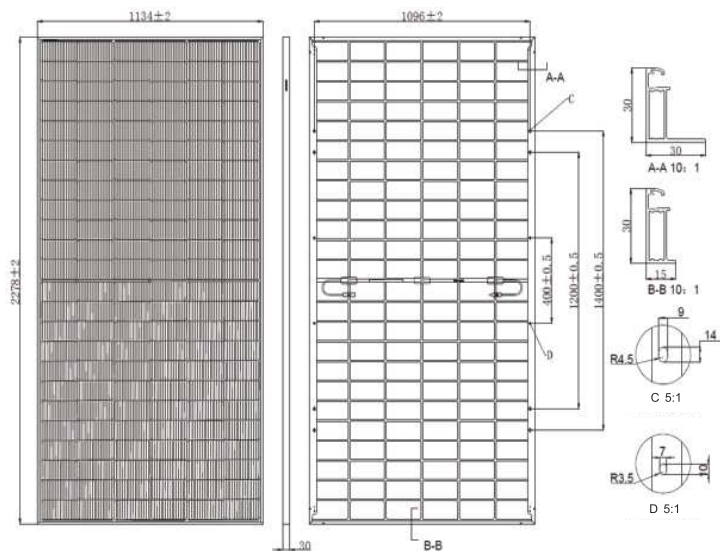
Mechanical Parameters

Cells	TNC
Cell Orientation	144[6X24]
Dimension	2278 \pm 2 X1134 \pm 2X30mm
Weight	32.7kg
Front Glass	2.0mm high transmittance, AR coated tempered glass
Rear Glass	2.0mm high transmittance, coated tempered glass
Frame	Anodized aluminum alloy frame
Junction Box	IP68, 3 diodes
Output Cable	4.0mm ²
Cable Length	+400mm, -200mm, length can be customized
Wind/Snow Load	2400Pa/5400Pa
Packaging	36pcs per pallet, 720pcs per 40'HC

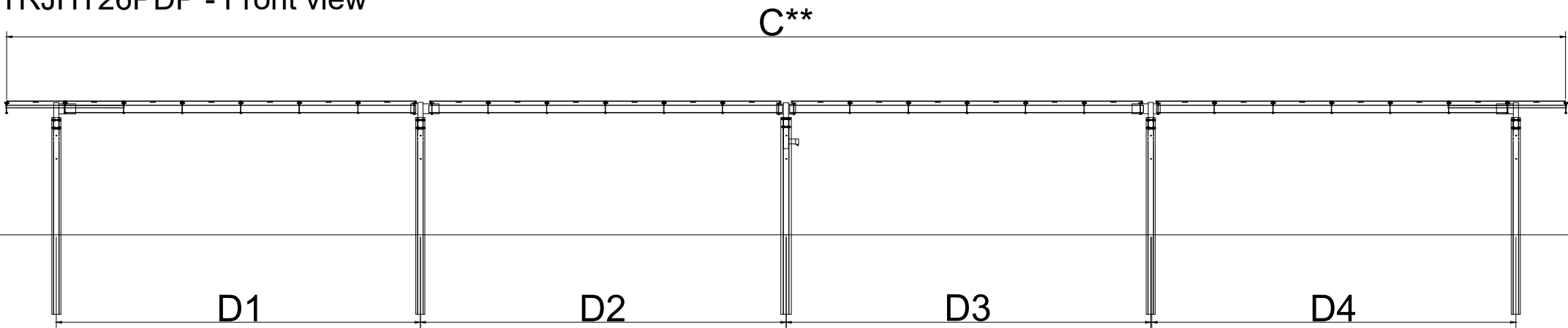
Operating Parameters

Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	30A
Power Output Tolerance	0~+5W
Maximum Bifaciality	80 \pm 5%

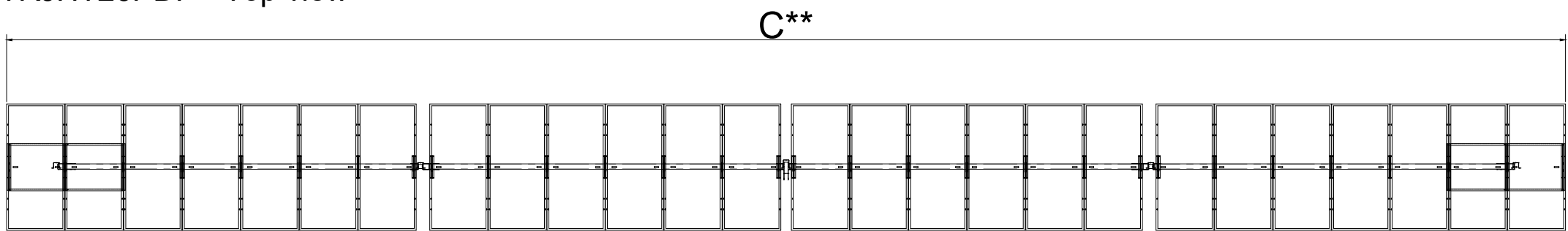
Drawings (Unit: mm)



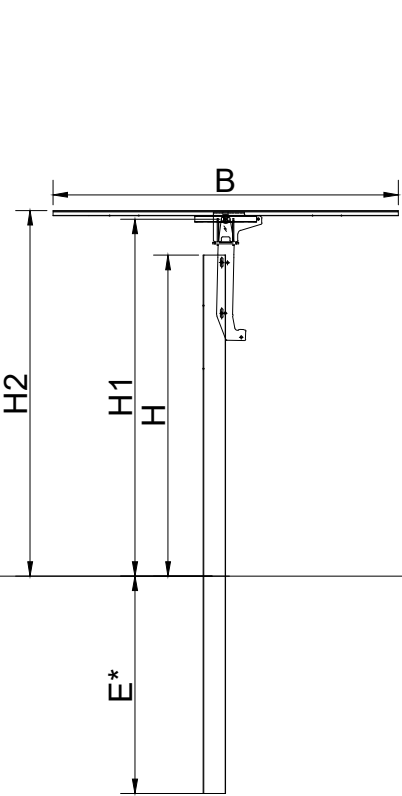
TRJHT26PDP - Front view



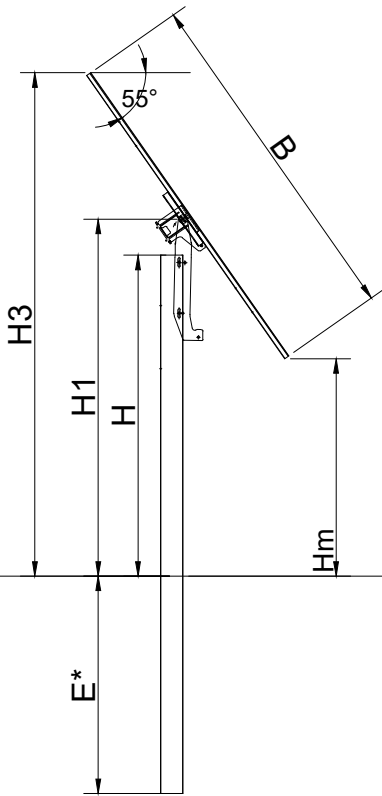
TRJHT26PDP - Top view



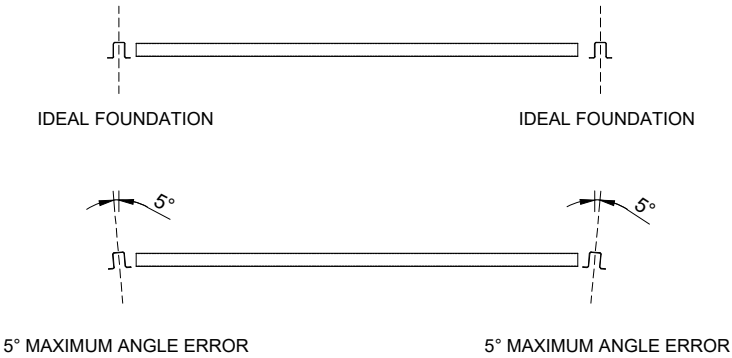
TRJHT26PDP
SIDE VIEW @ 0°



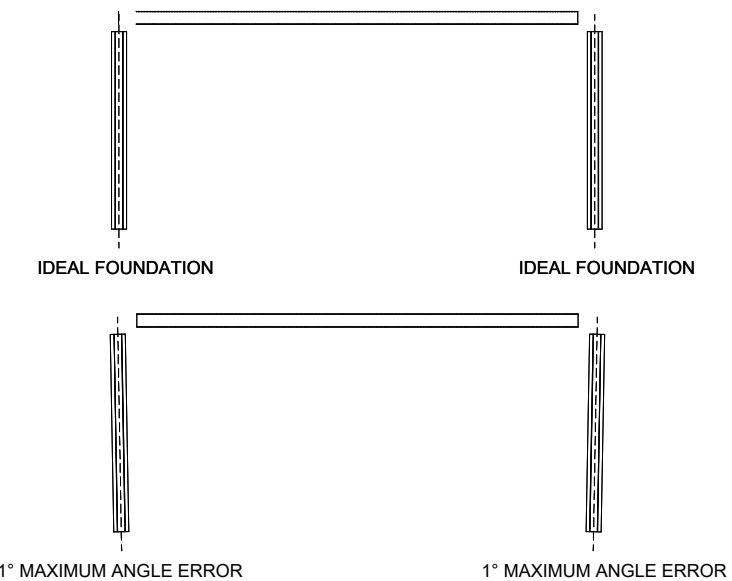
TRJHT26PDP
SIDE VIEW @ 55°



FOUNDATION TWIST ERROR RECOVERY

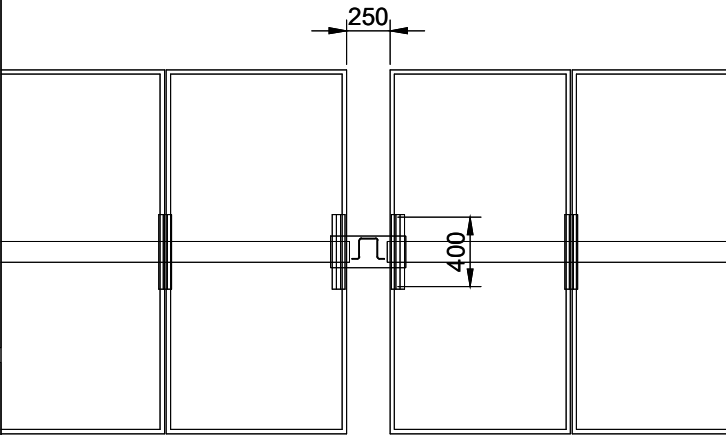


FOUNDATION ANGLE ERROR RECOVERY



PRELIMINARY PV TABLES SPACING

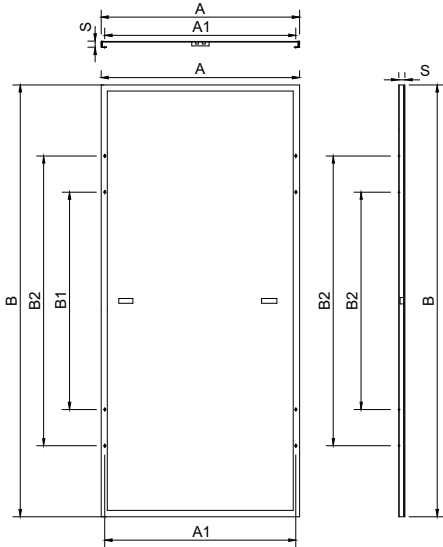
NOMINAL VALUE - IT MAY CHANGE DUE TO MOUNTING TOLERANCES



MATERIAL CHARACTERISTICS

- STEEL**
Structural steel - at least S235JR - yield strength and thickness in accordance with structural calculations.
- SPHERICAL BEARINGS**
Bronze / Stainless steel.
- SPACERS**
Stainless Steel.
- SCREWS, NUTS and WASHERS**
All steel parts will be galvanized according to environmental conditions of the site to have a design lifetime of 25 years
- GALVANIZATION**
Basic Option:
All steel parts will be galvanized according to environmental conditions of the site to have a design lifetime of 25 years

PHOTOVOLTAIC MODULE



APPROXIMATE DIMENSIONS [mm]

A	1134	E*	1500
A1	1096	H	2901
A2	-	H1	3101
B	2278	H2	3166
B1	400	H3	4000
B2	1200	Hm	2100
B3	1400	C1	-
S	30	D1	8150
C**	32500	D2	7200
D3	7200	D4	8150
-	-	-	-
-	-	-	-

*Check with POT and Geotechnical Report
**total length includes installation tolerances

VALMONT

PROJECT DESCRIPTION

TRJHT26PDP

CLIENT

STATE PROJECT

Preliminary Drawing

REPRESENTATION

Annex 1
TRJHT26PDP General Assembly Drawing

REFERENCE DRAWING

NUMBER PROJECT	DATE EMISSION	FORMAT DRAWING
	SCALE:	SCALE DWT:

REL.	DATE	DESCRIPTION	DESIGNED	CHECKED	APPROVED
------	------	-------------	----------	---------	----------

DESIGN



SUN2000-330KTL-H1

Smart String Inverter



Max. Efficiency
≥99.0%



Smart Self Clean Fan



Smart DC Connector
Temperature Detect



Smart String Level
Disconnection



28 High Accuracy String
Current Detect



Support IV diagnosis

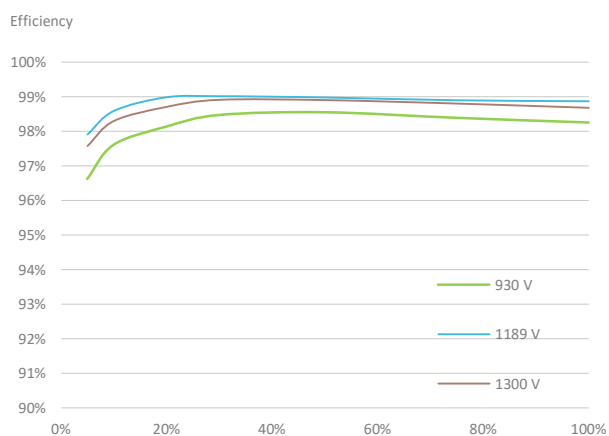


IP 66 protection

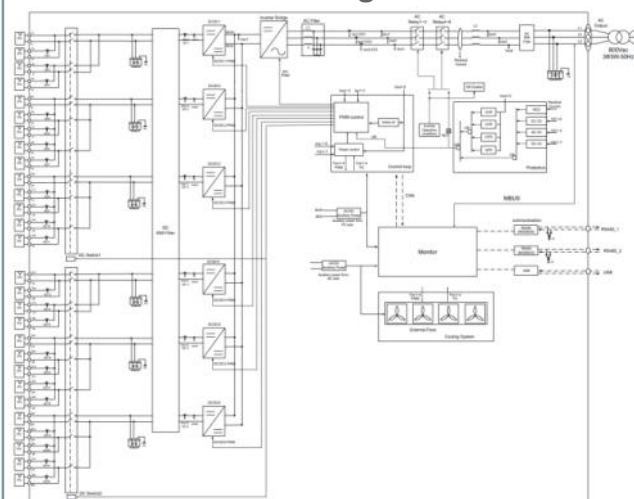


Surge Arresters for
DC & AC

Efficiency Curve



Circuit Diagram



Technical Specifications

Efficiency	
Max. Efficiency	≥99.0%
European Efficiency	≥98.8%
Input	
Max. Input Voltage	1,500 V
Number of MPP Trackers	6
Max. Current per MPPT	65 A
Max. Short Circuit Current per MPPT	115 A
Max. PV Inputs per MPPT	4/5/5/4/5/5
Start Voltage	550 V
MPPT Operating Voltage Range	500 V ~ 1,500 V
Nominal Input Voltage	1,080 V
Output	
Nominal AC Active Power	300,000 W
Max. AC Apparent Power	330,000 VA
Max. AC Active Power (cosφ=1)	330,000 W
Nominal Output Voltage	800 V, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	216.6 A
Max. Output Current	238.2 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Total Harmonic Distortion	< 1%
Protection	
Smart String-Level Disconnect(SSLD)	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
AC Grounding Fault Protection	Yes
Residual Current Monitoring Unit	Yes
Communication	
Display	LED Indicators, WLAN + APP
USB	Yes
MBUS	Yes
RS485	Yes
General	
Dimensions (W x H x D)	1,048 x 732 x 395 mm
Weight (with mounting plate)	≤112 kg
Operating Temperature Range	-25 °C ~ 60 °C
Cooling Method	Smart Air Cooling
Max. Operating Altitude without Derating	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP 66
Topology	Transformerless