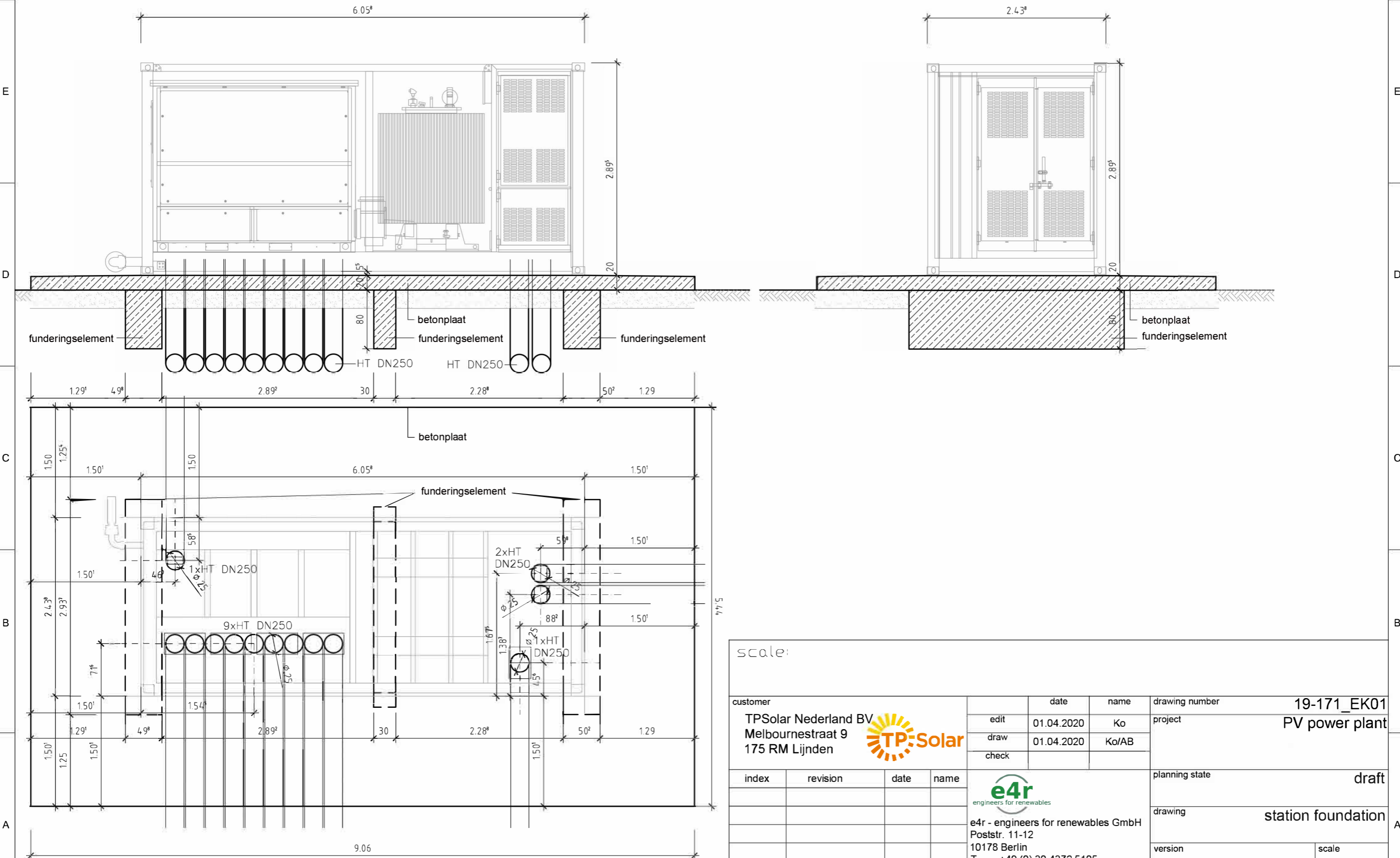



Bijlage 8: BESTEKTEKENINGEN EN INFORMATIE TECHNISCHE INSTALLATIE



scale:

customer	TPSolar Nederland BV Melbournestraat 9 175 RM Lijnden			edit	01.04.2020	name	Ko	drawing number	19-171_EK01
				draw	01.04.2020		Ko/AB	project	PV power plant
				check					
index	revision	date	name	 e4r - engineers for renewables GmbH Poststr. 11-12 10178 Berlin T +49 (0) 30 4372 5105 M contact@e-4-r.de all rights reserved				planning state	draft
								drawing	station foundation
								version	scale
								page 1/1	format
									1:50
									A3

MV POWER STATION

4000-S2 / 4200-S2 / 4400-S2 / 4600-S2



MVPS-4000-S2 / MVPS-4200-S2 / MVPS-4400-S2 / MVPS-4600-S2



Robust

- Station and all individual components type-tested
- UL Listing
- Optimally suited to extreme ambient conditions

Easy to Use

- Plug and play concept
- Completely pre-assembled for easy set-up and commissioning

Cost-Effective

- Easy planning and installation
- Low transport costs due to 20-foot skid

Flexible

- One product for the whole world
- DC-Coupling Ready
- Numerous options

MV POWER STATION 4000-S2 / 4200-S2 / 4400-S2 / 4600-S2

Turnkey Solution for PV Power Plants

With the power of the new robust central inverters, the Sunny Central UP or Sunny Central Storage UP, and with perfectly adapted medium-voltage components, the new MV Power Station offers even more power density and is a turnkey solution available worldwide. The solution is the ideal choice for new generation PV power plants operating at 1500 V_{DC}. Delivered pre-configured on a 20-foot High Cube Container Skid, the solution is easy to transport and quick to assemble and commission. The MVPS and all components are type-tested. The UL Listing for the North American market is available. The MV Power Station combines rigorous plant safety with maximum energy yield and minimized deployment and operating risk. The MV Power Station is prepared for DC-Coupling.

MV POWER STATION

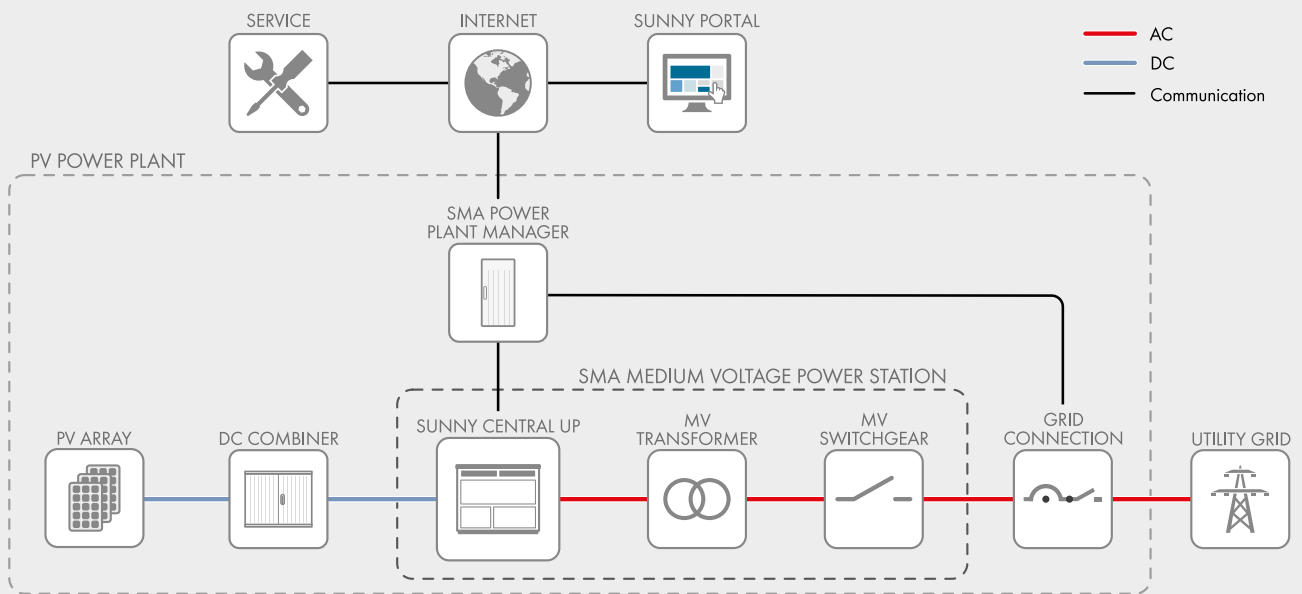
4000-S2 / 4200-S2 / 4400-S2 / 4600-S2

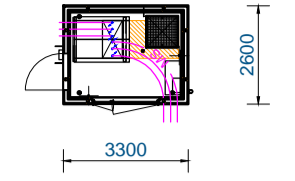
Technical Data	MVPS 4000-S2	MVPS 4200-S2
Input (DC)		
Available inverters	1 x SC 4000 UP (-US) or 1 x SCS 3450 UP (-US)	1 x SC 4200 UP (-US) or 1 x SCS 3600 UP (-US)
Max. input voltage	1500 V	1500 V
Max. input current	4750 A	4750 A
Number of DC inputs	24 double pole fused (32 single pole fused)	
Integrated zone monitoring	○	
Available DC fuse sizes (per input)	200 A, 250 A, 315 A, 350 A, 400 A, 450 A, 500 A	
Output (AC) on the medium-voltage side		
Rated power at 1000 m and cos phi = 1 (at -25°C to +25°C / at 40°C / at 45°C) ¹⁾	4000 kVA / 3400 kVA / 0 kVA	4200 kVA / 3570 kVA / 0 kVA
Optional: rated power at 1000 m and cos phi = 1 (at -25°C to +25°C / at 50°C / at 55°C) ¹⁾	4000 kVA / 3400 kVA / 0 kVA	4200 kVA / 3570 kVA / 0 kVA
Typical nominal AC voltages	11 kV to 35 kV	11 kV to 35 kV
AC power frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
Transformer vector group Dy11 / YNd11 / YNy0	● / ○ / ○	● / ○ / ○
Transformer cooling methods	KNAN ²⁾	KNAN ²⁾
Max. output current at 33 kV	70 A	74 A
Transformer no-load losses Standard / Ecodesign at 33 kV	4.0 kW / 3.1 kW	4.2 kW / 3.1 kW
Transformer short-circuit losses Standard / Ecodesign at 33 kV	40.0 kW / 29.5 kW	41.0 kW / 32.5 kW
Max. total harmonic distortion	< 3%	
Reactive power feed-in (up to 60% of nominal power)	○	
Power factor at rated power / displacement power factor adjustable	1 / 0.8 overexcited to 0.8 underexcited	
Inverter efficiency		
Max. efficiency ³⁾ / European efficiency ³⁾ / CEC weighted efficiency ⁴⁾	98.7% / 98.6% / 98.5%	98.7% / 98.6% / 98.5%
Protective devices		
Input-side disconnection point	DC load-break switch	
Output-side disconnection point	Medium-voltage vacuum circuit breaker	
DC overvoltage protection	Surge arrester type I	
Galvanic isolation	●	
Internal arc classification medium-voltage control room (according to IEC 62271-202)	IAC A 20 kA 1 s	
General Data		
Dimensions equal to 20-foot HC shipping container (W / H / D)	6058 mm / 2896 mm / 2438 mm	
Weight	< 18 t	
Self-consumption (max. / partial load / average) ¹⁾	< 8.1 kW / < 1.8 kW / < 2.0 kW	
Self-consumption (stand-by) ¹⁾	< 370 W	
Degree of protection according to IEC 60529	Control rooms IP23D, inverter electronics IP54	
Environment: standard / harsh	● / ○	
Degree of protection according to IEC 60721-3-4 (4C1, 4S2 / 4C2, 4S4)	● / ○	
Maximum permissible value for relative humidity	95% (for 2 months/year)	
Max. operating altitude above mean sea level 1000 m / 2000 m	● / ○	
Fresh air consumption of inverter	6500 m ³ /h	
Features		
DC terminal	Terminal lug	
AC connection	Outer-cone angle plug	
Tap changer for MV-transformer: without / with	● / ○	
Shield winding for MV-Transformer: without / with	● / ○	
Monitoring package	○	
Station enclosure color	RAL 7004	
Transformer for external loads: without / 10 / 20 / 30 / 40 / 50 / 60 kVA	● / ○ / ○ / ○ / ○ / ○ / ○ / ○	
Medium-voltage switchgear: without / 3 feeders	● / ○	
2 cable feeders with load-break switch, 1 transformer feeder with circuit breaker, internal arc classification IAC A FL 20 kA 1 s according to IEC 62271-200	● / ○	
Short circuit rating medium voltage switchgear (20 kA 1 s / 20 kA 3 s / 25 kA 1 s)	● / ○ / ○	
Accessories for medium-voltage switchgear: without / auxiliary contacts / motor for transformer feeder / cascade control / monitoring	● / ○ / ○ / ○ / ○	
Integrated oil containment: without / with	● / ○	
Industry standards (for other standards see the inverter datasheet)	IEC 60076, IEC 62271-200, IEC 62271-202, EN50588-1 IEEE C37.100.1, IEEE C57.12, UL 1741 listed, CSC Certificate	
● Standard features ○ Optional features – Not available		
Type designation	MVPS-4000-S2 (-US)	MVPS-4200-S2 (-US)

- 1) Data based on inverter
- 2) KNAN = Ester with natural air cooling
- 3) Efficiency measured at inverter without internal power supply
- 4) Efficiency measured at inverter with internal power supply

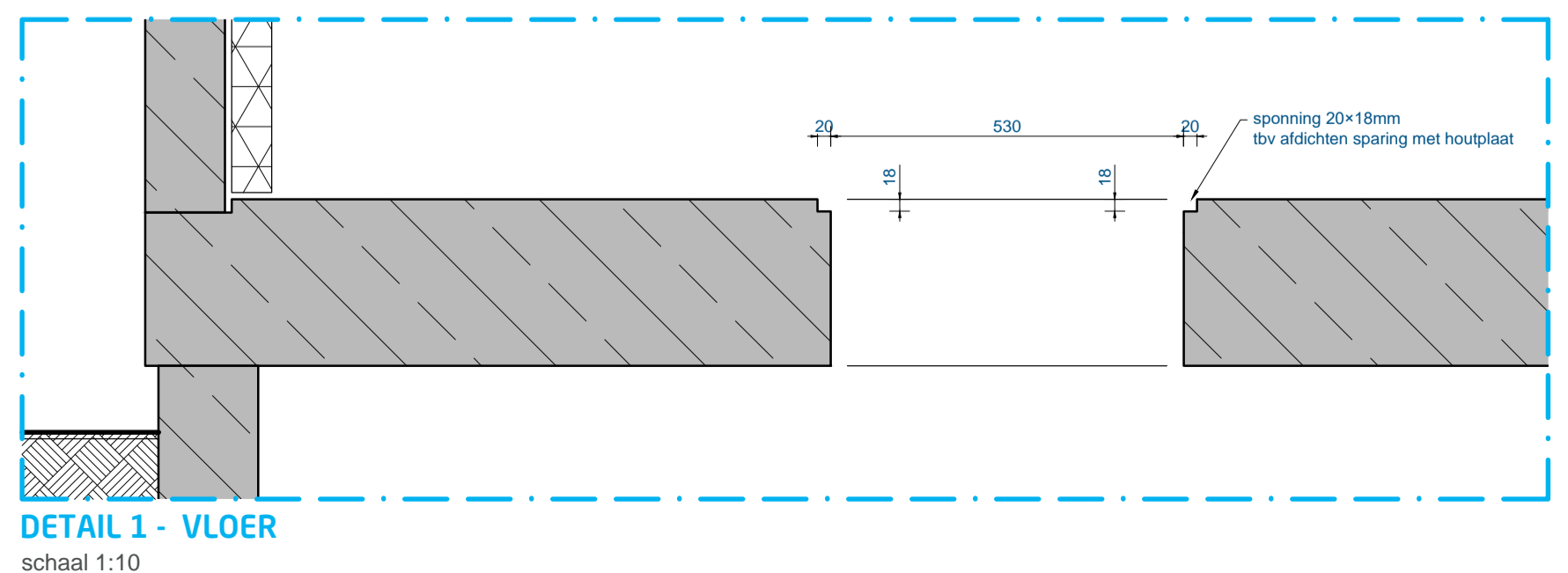
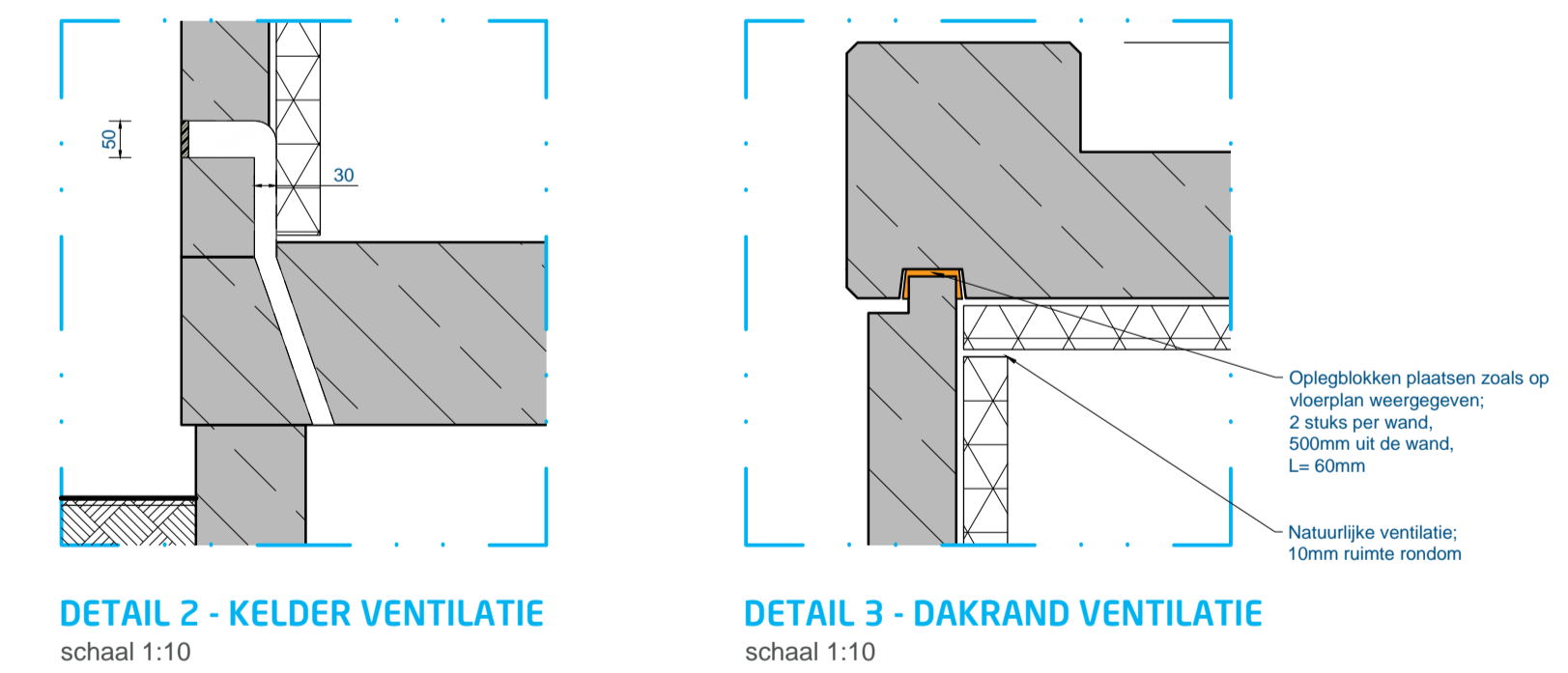
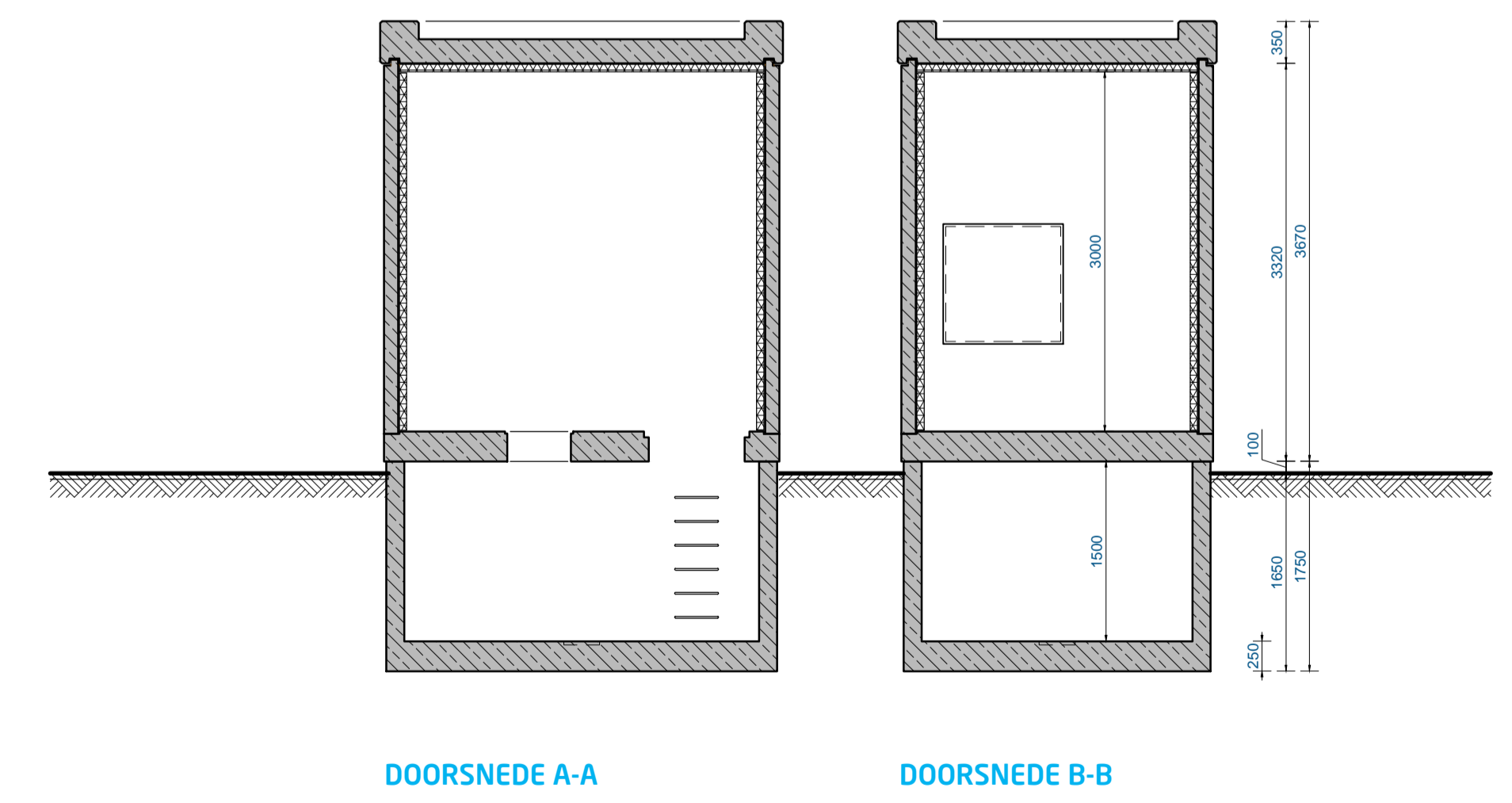
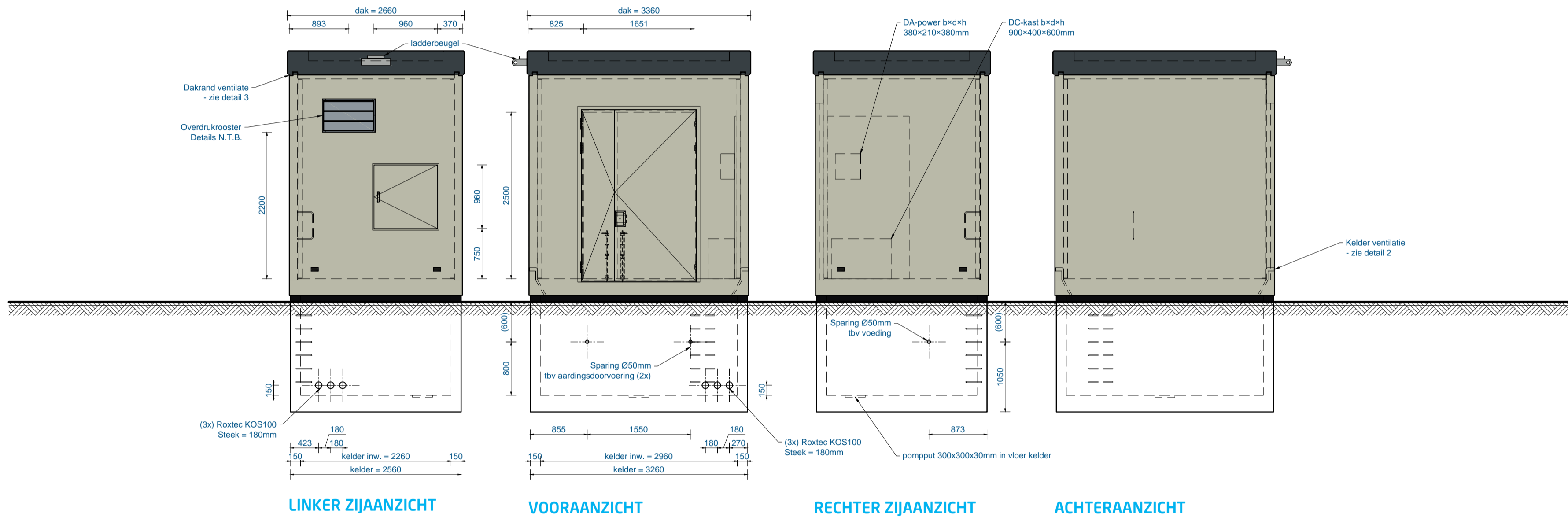
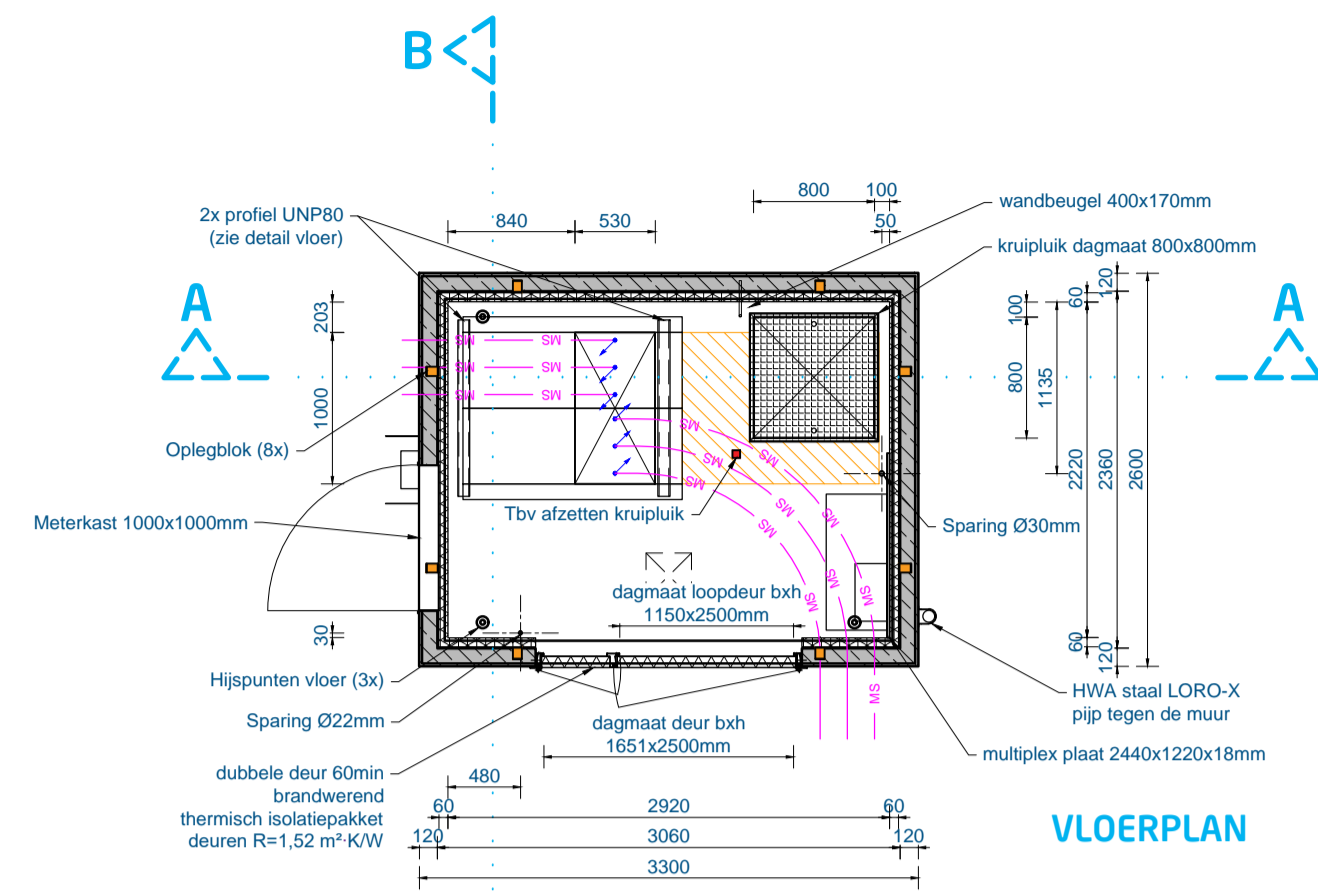
Technical Data	MVPS 4400-S2	MVPS 4600-S2
Input (DC)		
Available inverters	1 x SC 4400 UP (-US) or 1 x SCS 3800 UP (-US)	1 x SC 4600 UP (-US) or 1 x SCS 3950 UP (-US)
Max. input voltage	1500 V	1500 V
Max. input current	4750 A	4750 A
Number of DC inputs	24 double pole fused (32 single pole fused)	
Integrated zone monitoring	○	
Available DC fuse sizes (per input)	200 A, 250 A, 315 A, 350 A, 400 A, 450 A, 500 A	
Output (AC) on the medium-voltage side		
Rated power at 1000 m and cos phi = 1 (at -25°C to +25°C / at 40°C / at 45°C) ¹⁾	4400 kVA / 3740 kVA / 0 kVA	4600 kVA / 3910 kVA / 0 kVA
Optional: rated power at 1000 m and cos phi = 1 (at -25°C to +25°C / at 50°C / at 55°C) ¹⁾	4400 kVA / 3740 kVA / 0 kVA	4600 kVA / 3910 kVA / 0 kVA
Typical nominal AC voltages	11 kV to 35 kV	11 kV to 35 kV
AC power frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
Transformer vector group Dy11 / YNd11 / YNy0	● / ○ / ○	● / ○ / ○
Transformer cooling methods	KNAN ²⁾	KNAN ²⁾
Max. output current at 33 kV	77 A	81 A
Transformer no-load losses Standard / Ecodesign at 33 kV	4.4 kW / 3.1 kW	4.6 kW / 3.1 kW
Transformer short-circuit losses Standard / Ecodesign at 33 kV	42.0 kW / 35.7 kW	43.0 kW / 38.0 kW
Max. total harmonic distortion	< 3%	
Reactive power feed-in (up to 60% of nominal power)	○	
Power factor at rated power / displacement power factor adjustable	1 / 0.8 overexcited to 0.8 underexcited	
Inverter efficiency		
Max. efficiency ³⁾ / European efficiency ³⁾ / CEC weighted efficiency ⁴⁾	98.7% / 98.6% / 98.5%	98.7% / 98.6% / 98.5%
Protective devices		
Input-side disconnection point	DC load-break switch	
Output-side disconnection point	Medium-voltage vacuum circuit breaker	
DC overvoltage protection	Surge arrester type I	
Galvanic isolation	●	
Internal arc classification medium-voltage control room (according to IEC 62271-202)	IAC A 20 kA 1 s	
General Data		
Dimensions equal to 20-foot HC shipping container (W / H / D)	6058 mm / 2896 mm / 2438 mm	
Weight	< 18 t	
Self-consumption (max. / partial load / average) ¹⁾	< 8.1 kW / < 1.8 kW / < 2.0 kW	
Self-consumption (stand-by) ¹⁾	< 370 W	
Degree of protection according to IEC 60529	Control rooms IP23D, inverter electronics IP54	
Environment: standard / harsh	● / ○	
Degree of protection according to IEC 60721-3-4 (4C1, 4S2 / 4C2, 4S4)	● / ○	
Maximum permissible value for relative humidity	95% (for 2 months/year)	
Max. operating altitude above mean sea level 1000 m / 2000 m	● / ○	
Fresh air consumption of inverter	6500 m ³ /h	
Features		
DC terminal	Terminal lug	
AC connection	Outer-cone angle plug	
Tap changer for MV-transformer: without / with	● / ○	
Shield winding for MV-Transformer: without / with	● / ○	
Monitoring package	○	
Station enclosure color	RAL 7004	
Transformer for external loads: without / 10 / 20 / 30 / 40 / 50 / 60 kVA	● / ○ / ○ / ○ / ○ / ○ / ○ / ○	
Medium-voltage switchgear: without / 3 feeders	● / ○	
2 cable feeders with load-break switch, 1 transformer feeder with circuit breaker, internal arc classification IAC A FL 20 kA 1 s according to IEC 62271-200	● / ○	
Short circuit rating medium voltage switchgear (20 kA 1 s / 20 kA 3 s / 25 kA 1 s)	● / ○ / ○	
Accessories for medium-voltage switchgear: without / auxiliary contacts / motor for transformer feeder / cascade control / monitoring	● / ○ / ○ / ○ / ○	
Integrated oil containment: without / with	● / ○	
Industry standards (for other standards see the inverter datasheet)	IEC 60076, IEC 62271-200, IEC 62271-202, EN50588-1 IEEE C37.100.1, IEEE C57.12, UL 1741 listed, CSC Certificate	
● Standard features ○ Optional features – Not available		
Type designation	MVPS-4400-S2 (-US)	MVPS-4600-S2 (-US)

System diagram with Sunny Central UP





SITUATIE STATION
aan te vullen door klant
schaal 1:200



AFMETINGEN	Huis uitwendig: 3300 x 2600 mm inwendig: 2920 x 2220 mm Kelder uitwendig: 3260 x 2560 mm	STANDAARD AFWERKING UITWENDIG	Wanden huis: kunstharsemulsië met gebroken steentjes Dak: kleur = RAL 7032 elastische waterdichte epoxycoating randkleur RAL 7016 (antisluitgrijs)
HOOGTE	Huis uitwendig: 3670 mm inwendig: 3000 mm Kelder uitwendig: 1750 mm inwendig: 1500 mm	STANDAARD AFWERKING INWENDIG	Wanden huis en dak: grijze veegvaste verf, wit en antraciet gesprenkeld Vloer: geen Kelder: geen
BEBOUW OPPERVLAK	8,95m²	OVERIGE AFMETINGEN	Dagmaat deur: ca. 1450 x 2600 mm
GEWICHTEN	Bouwwerk met dak: 20 ton Kelder: 11 ton Inrichting: - ton	GEWAPEND BETON	Betonstaal: netten: B500A staven: B500B (NEN-EN 10080:2008)
VOORZIENINGEN	Gewichten volgens Eurocode NEN-EN 1991-1-1+C1 Gevoelingsklasse volgens NEN-EN 1990: CC1 Permanente belasting: - kN Veranderlijke belasting: - kN Totale belasting: - kN Bij funderen op staal grondspanning (max.) - kN/m²	VOORZIENINGEN	Huis + dak: beton sterkte C35/45 milieuklassen wanden en dak: XC4 en XF1 milieuklasse vloer: XC1 beton sterkte C35/45 milieuklasse wanden, dak en vloer: XC1 Kelder: beton sterkte C35/45 milieuklassen wanden: XC4 en XF1 milieuklassen vloer: XC2 en XF1 beton sterkte C35/45 milieuklassen wanden en vloer: XC1 alle sterkten en klassen volgens NEN-EN 206-1

Betreedbaar station BSK330.26

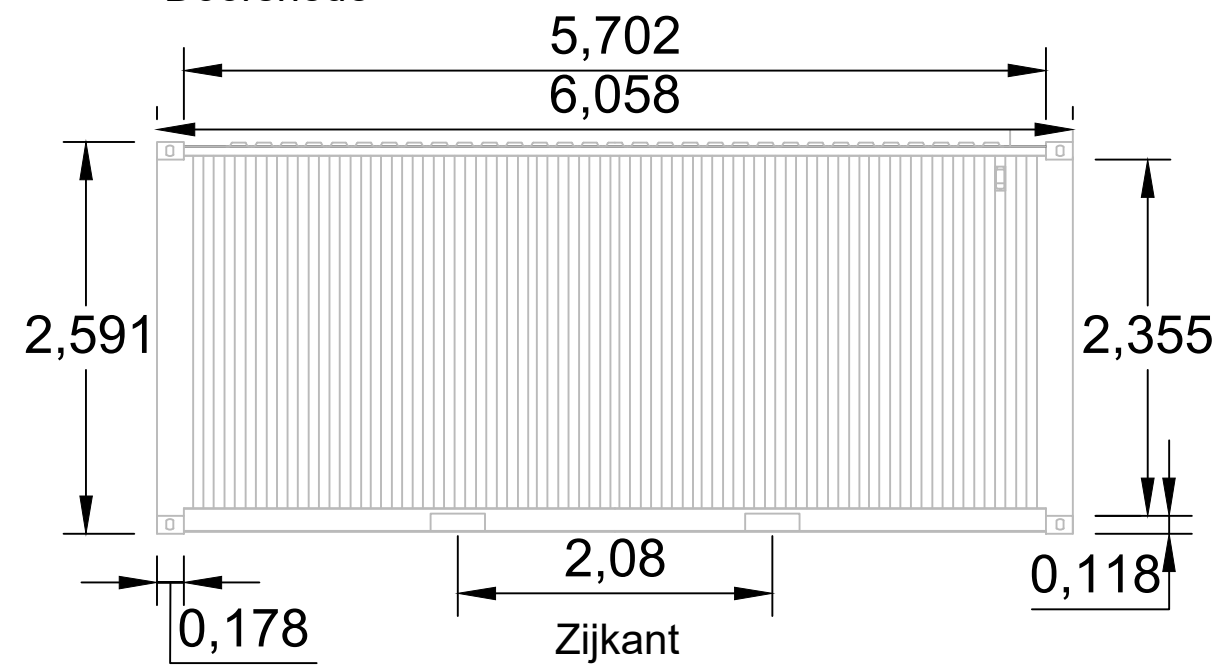
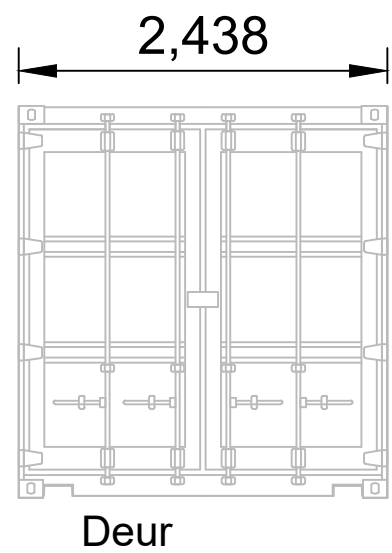
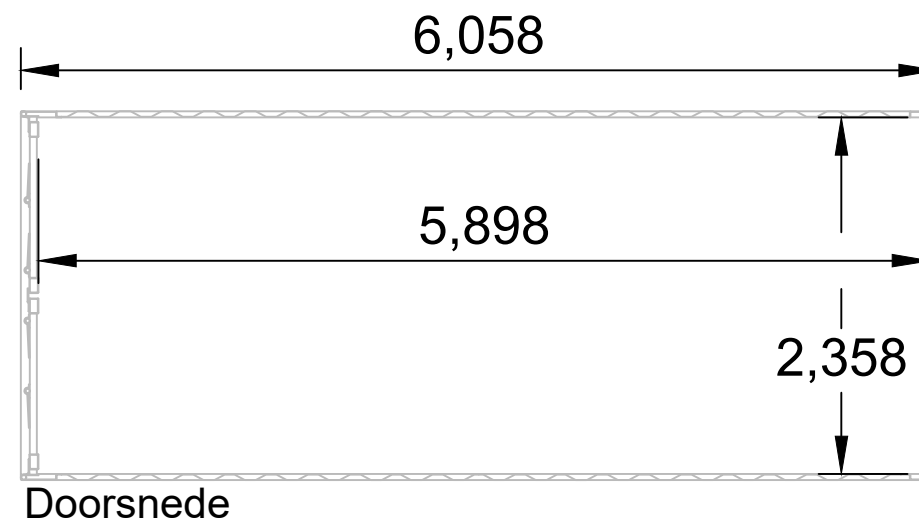
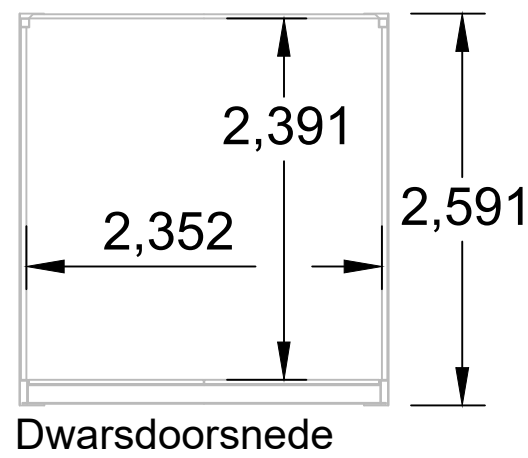
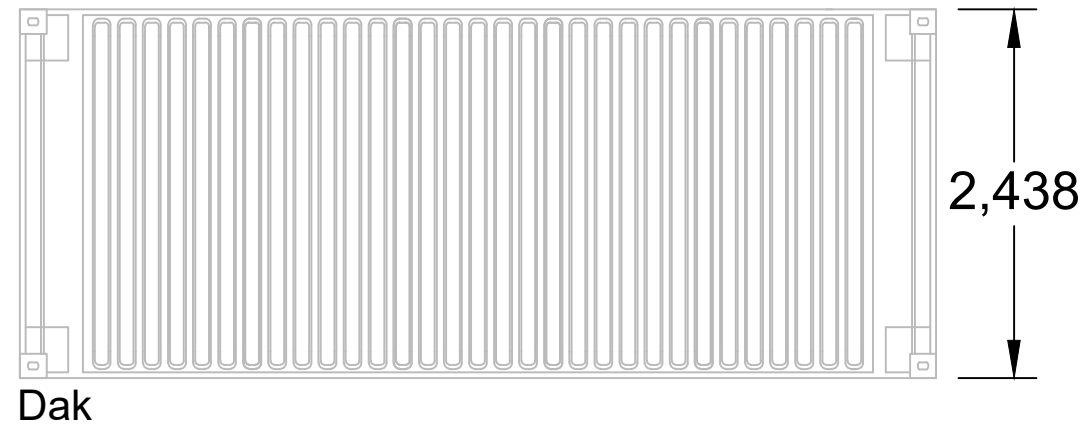
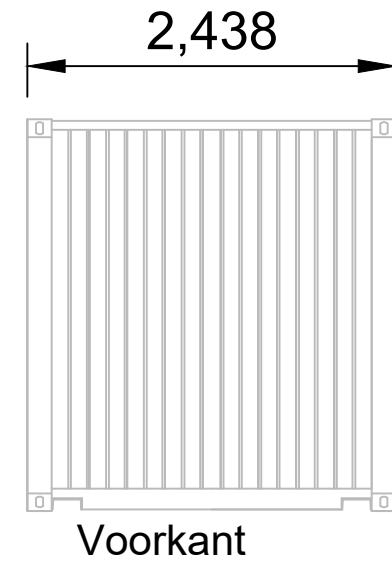
Inkoopstation Enexis - 2 velds FMX - Standaard

ALFEN
POWER TO ADAPT

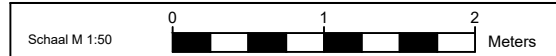
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offertenummer	status tekening	getekend door	11-06-20	tekeningnummer	PROJECTS-A3	rev.	-
OFFERTE					VMS7701A020-1		

WED. J. VAN DIJK, architect, 2015-2016, project: station complex, wijk: P. Rijk. Dit document is auteursrechtelijk beschermd. Het kopiëren van dit document is strafbaar.

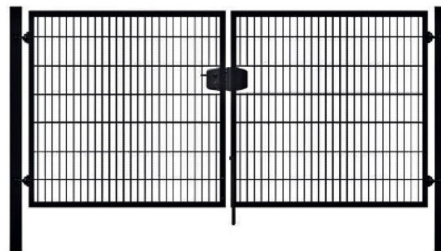
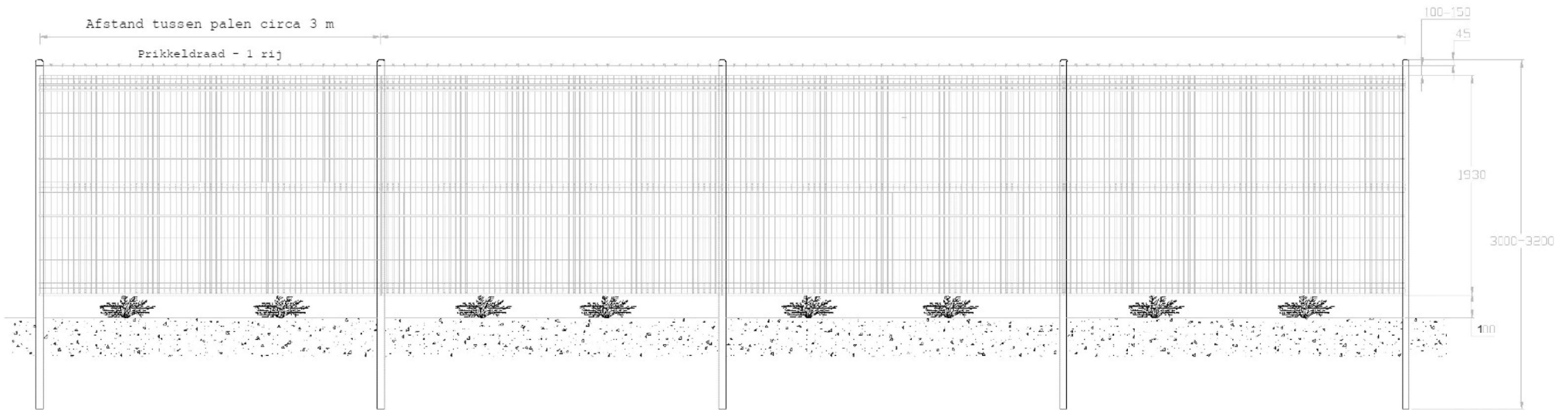
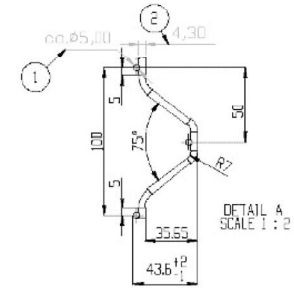
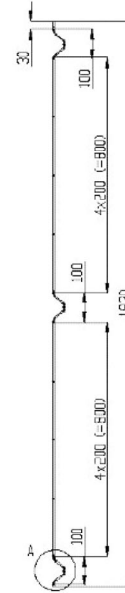
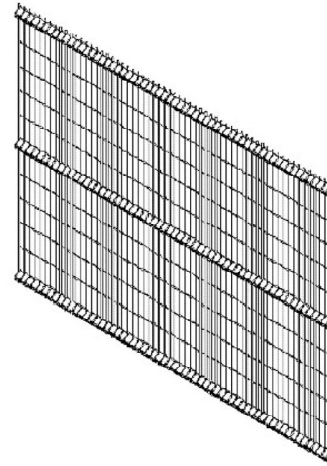
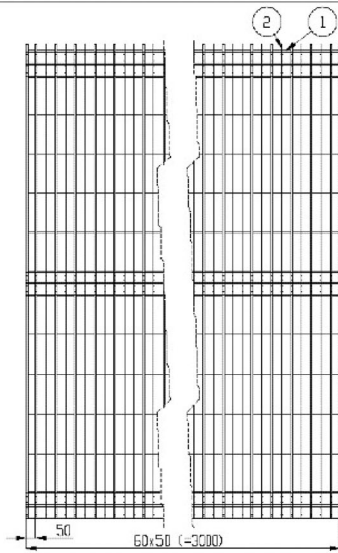
Opslag Container



Kleur : Ral 7004



Klant		Tekeningsnummer		TPS-SP21_007_TD-B2.0	
Begin	24.03.2022	Datum	Naam	Project	
Bewerkt	M.H			Zonnepark Laarakkerdijk	
Controle				Reusel-de Mierden	
Index	Revisie	Datum	Naam	Projectnaam	
				Opslag container	
				Tekening	
TP:Solar Nederland B.V. Melbournstraat 9 1175 RM Lijnden				20 FT Container	
T 023-7410144 M info@tp:solar.nl W www.tp:solar.nl				Versie	Schaal
				B 2.0	1:50
				Page	Formaat
				1/1	A3
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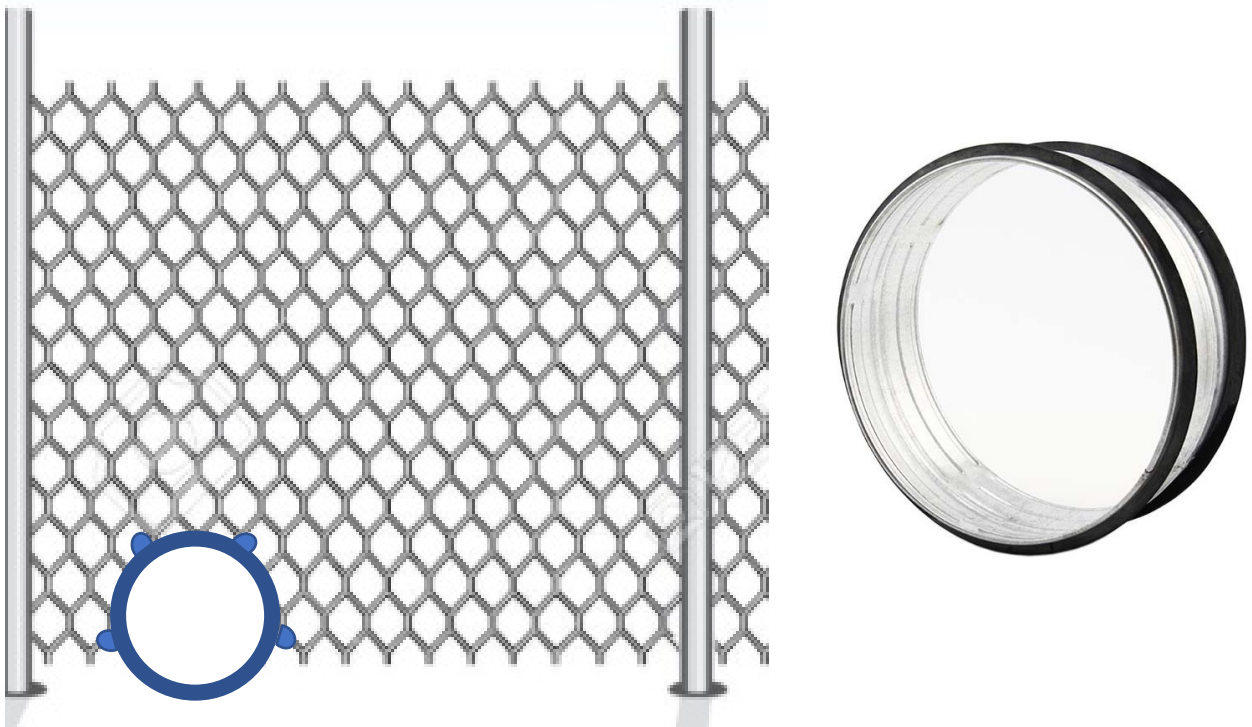


ITEM	QTY.	Description	Dimension	Material
1	17	Horizontal wire	ø 4,30 mm	Wire S05
2	61	Vertical wire	ø 4,30 mm	Wire S05
Rev	Date	Changed By	Material	Wire S05
1			2998	Spec
2				15-05-0
PANEL Wey-Triton XL 3000x2930MM T 193-L				
Status		Approved	Designer	03
Drawn by		Date		01.05.2007
Free from any		FIN	43	
restriction		Scale	1:20	PANEL Wey-Triton XL 3000x2930MM

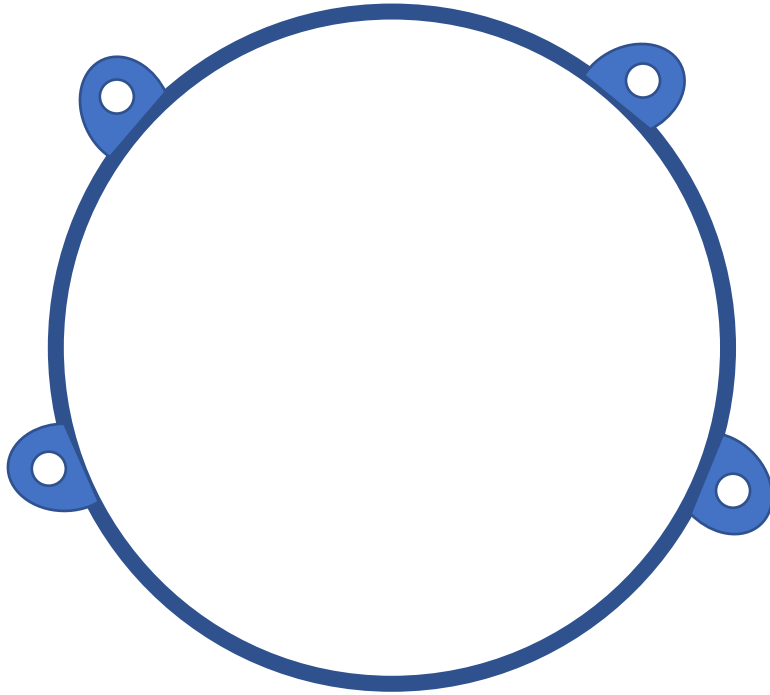
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Hekwerkdoorgangen voor dassen en ander kleinwild

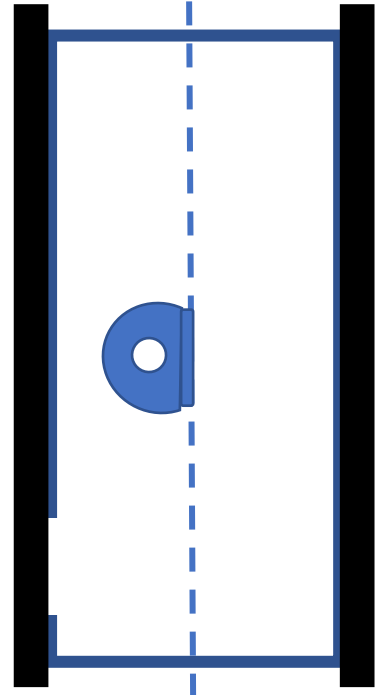
Er zijn diersoorten die zich niet laten stoppen door een gaashekwerk, zij graven er gewoon onderdoor. Soorten zoals dassen, kleine marterachtigen en egels doen dat niet. Zij leven echter wel van wat ze op het land vinden en zouden dus gehinderd worden als ze het zonnepark niet op en af kunnen doordat er hekwerk omheen staat. Voor deze soorten willen de initiatiefnemers regelmatig (elke 100-150 meter) een doorgang in het hekwerk maken. Ter plaatse zal de buis(diameter van 30 cm) voor het hekwerk op de grond op ca. 20 cm van een paal gemonteerd worden. Dit zorgt ervoor dat het zonnepark Laarakkerdijk toegankelijk zal zijn voor verschillende diersoorten.



Figuur 1: Faunapassage in hekwerk



Figuur 2: Vooraanzicht



Figuur 3: Zij-aanzicht