Mr.
Company: Solar-nu.nl
Address: Zernikestraat 7
Phone: +31 10 522 3593 Fax: +31 83 710 2357 Mobile: +31 653 33 2559
Email: info@solar-nu.nl

Project:

12x300W-GG

dinsdag 24 april 2018 17:50

Rotterdam

Location:

Rotterdam, Netherlands

System data:

Installed power: 3,60 kWp

Max achieved DC power: 3,55 kW

Inverter active power: 3,00 kW

Maximum apparent power: 3,00 kVA

PV Array # 1: PV Array # 1

Tilt	Azimuth	Mounting
38°	180°	Co-planar with roof

Luxor Solar, ECO LINE LX-300M/156-60, 300,00 W

Inverter design

Inverter 1: SE3000H

String 1: PV Array # 1: 12 x P370

Power optimizer extreme operating conditions

P370

	Calculated	Limit	
Max input power	300 W	370 W	✓
Min input voltage	30 V	8 V	✓
Max input voltage	40 V	60 V	✓
Max input current	10 A	11 A	✓
Max output current	9 A	15 A	✓

* Calculated values are the absolute min/max of all arrays using this power optimizer configuration.

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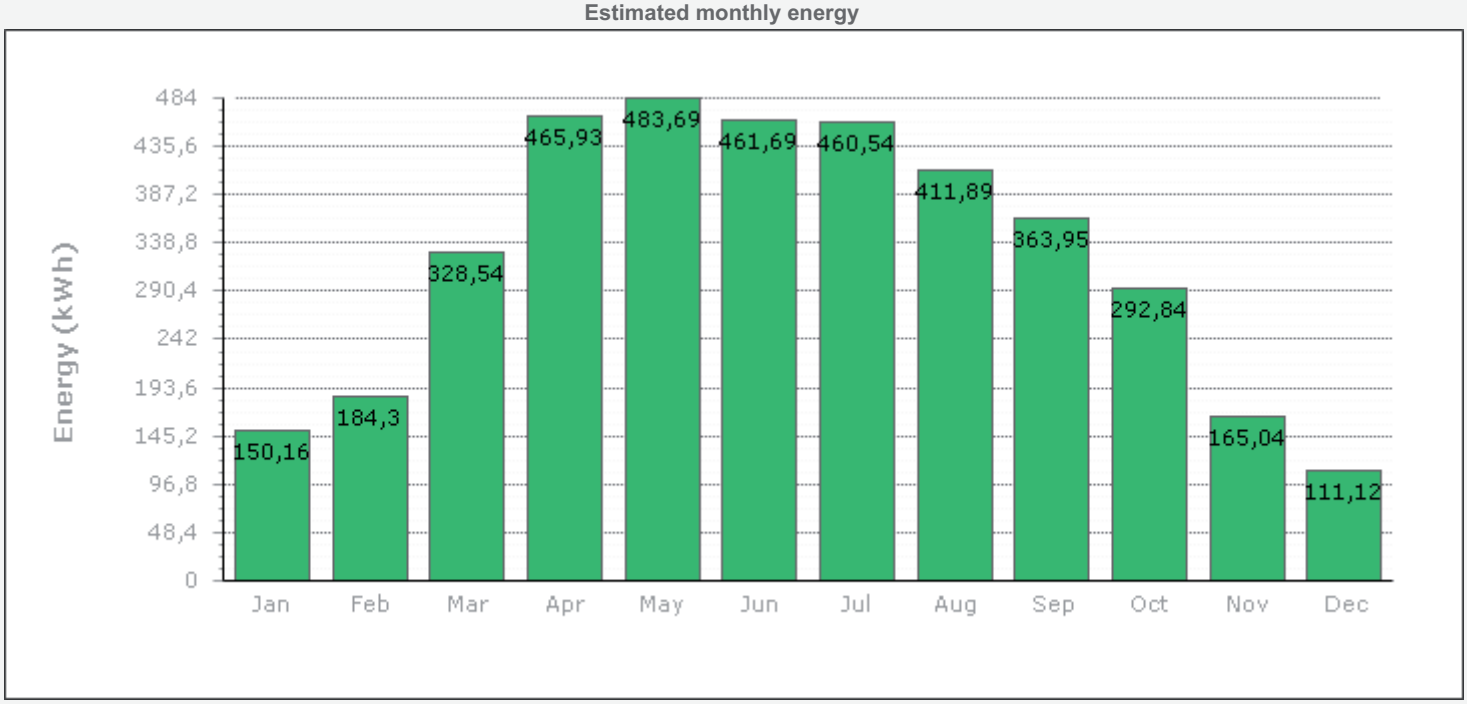
Energy estimation



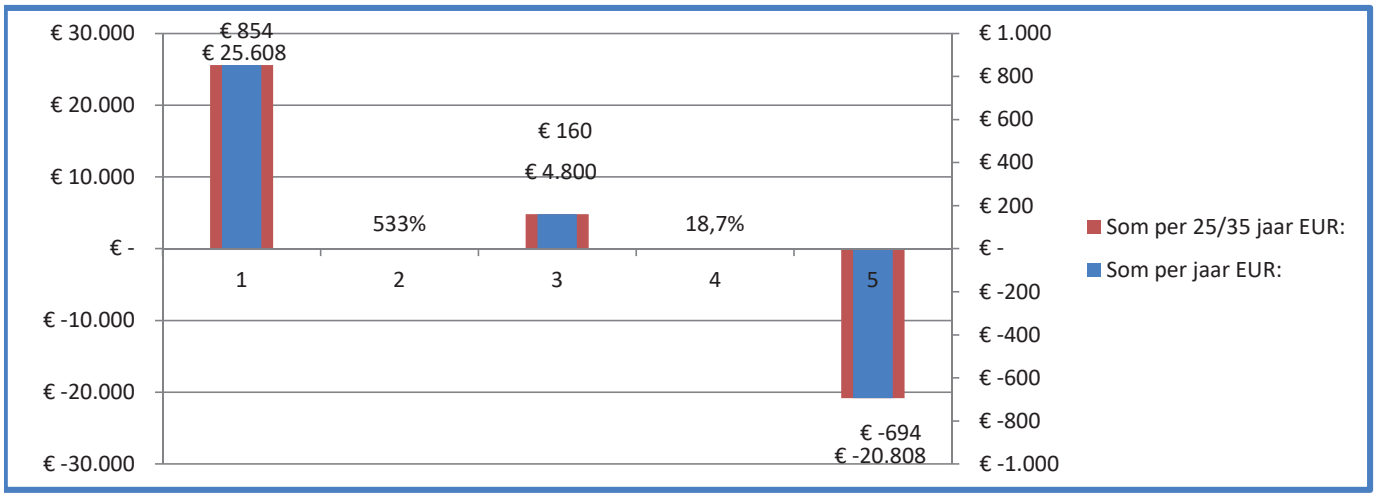
Estimated yearly energy: 3,880 MWh

Energy yields are an approximation; they are not guaranteed by SolarEdge.

Bill of Materials

Inverters:	SE3000H, quantity: 1
Optimizers:	P370-5RM4MRM, quantity: 12

Project:	7-6-2393	Datum:	24-4-2018		Naam:	Vlak=H6x5
Adres:	2651BP			135		
Zonneenergie PV en Rendabiliteit						
Aantal PV panelen	12					
Vermogen W.	300					
Vermogen Installatie W:	3.600					
Berekend Vermogen kWh:	3.880	108%	7,8%			
Investering:				30	Jaar Afschrijftermijn	
Per paneel:	€ 400,00					
Investering totaal:	€ 4.800	ex.21%BTW	€ 3.967	€ 1,333	Per/Watt	
Financieel:	Productie		Kosten	%	Netto Rendement/Voordeel	
Berekend Vermogen kWh:	3.880					
Prijs kWh / cent:	€ 0,22		€ 0,041	18,7%	€ -0,179	-81,3%
Som per maand EUR:	€ 71		€ 13	18,7%	€ -58	-81,3%
Som per jaar EUR:	€ 854	17,8%	€ 160	18,7%	€ -694	-81,3%
Som per 25/35 jaar EUR:	€ 25.608	533%	€ 4.800	18,7%	€ -20.808	-81,3%
Terugbetaal termijn Jaren:				5,6	Jaar/Rente	14,4%
ROI (return on investment) Bruto:	533%	17,8%	ROI Netto:	433,5%	ROI Netto/Jaar:	14,4%
	€ 25.608		""	€ 20.808	""	€ 4.800
Periode	NU			MINDER		NA
Financiële gegevens:	€ 3.967	Excl.21%BTW		€ 1,102	Per/Watt/Netto	
BTW teruggave bij aanschaf21%:	€ -833					
Rente/IkLeenSlim 10 jaar 2,9%	€ 563	Netto	€ 371	-34%		
Levensduur Omvormer/kosten:	€ 360	na garantie periode				
Gemiddelde inflatie per jaar	2%	energie	€ 17	25/35 Jaar:	€ 512	
Inflatiesom:	€ -512					
Som bijkomende kosten/baten:	€ -423	worden tegen elkaar weggestreept! (voordeel)				
Terugbetaling:		21% BTW	Jaarlijks	%		
1E Jaar (21% BTW+1E Jaar)	€ -1.527	€ -833	€ -694	-32%	1E Jaar is grootste teugbetaling !	
2E tot/met 25/35E per jaar	€ -20.114		€ -694	-419,0%		
SOM	€ -21.641		-15,0%	-450,9%		
	Jaar		25/35 Jaar	30		
Milieubijdrage CO2 Reductie / KG:	2.041		61.226			



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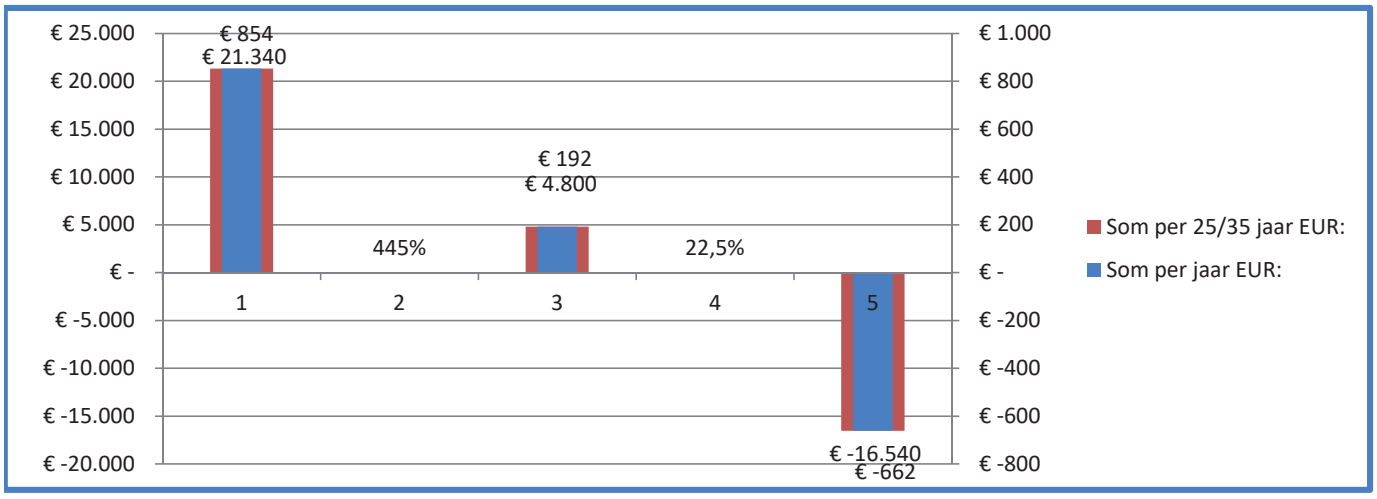
Project:	7-6-2393	Datum:	24-4-2018		Naam:	Vlak=H6x5
Adres:	2651BP			135		
Zonneenergie PV en Rendabiliteit						
Aantal PV panelen	12					
Vermogen W.	300					
Vermogen Installatie W:	3.600					
Berekend Vermogen kWh:	3.880	108%	7,8%			
Investering:				25	Jaar Afschrijftermijn	
Per paneel:	€ 400,00			3		
Investering totaal:	€ 4.800	ex.21%BTW	€ 3.967	€ 1,333	Per/Watt	
Financieel:	Productie		Kosten	%	Netto Rendement/Voordeel	
Berekend Vermogen kWh:	3.880					
Prijs kWh / cent:	€ 0,22		€ 0,049	22,5%	€ -0,171	-77,5%
Som per maand EUR:	€ 71		€ 16	22,5%	€ -55	-77,5%
Som per jaar EUR:	€ 854	17,8%	€ 192	22,5%	€ -662	-77,5%
Som per 25/35 jaar EUR:	€ 21.340	445%	€ 4.800	22,5%	€ -16.540	-77,5%
Terugbetaal termijn Jaren:				5,6	Jaar/Rente	13,8%
ROI (return on investment) Bruto:	445%	17,8%	ROI Netto:	344,6%	ROI Netto/Jaar:	13,8%
	€ 21.340		""	€ 16.540	""	€ 4.800
Periode	NU			MINDER		NA
Financiële gegevens:	€ 3.967	Excl.21%BTW		€ 1,102	Per/Watt/Netto	
BTW teruggave bij aanschaf21%:	€ -833					
Rente/IkLeenSlim 10 jaar 2,9%	€ 563	Netto	€ 371	-34%		
Levensduur Omvormer/kosten:	€ 360	na garantie periode				
Gemiddelde inflatie per jaar	2%	energie	€ 17	25/35 Jaar:	€ 427	
Inflatiesom:	€ -427					
Som bijkomende kosten/baten:	€ -337	worden tegen elkaar weggestreept! (voordeel)				
Terugbetaling:		21% BTW	Jaarlijks	%		
1E Jaar (21% BTW+1E Jaar)	€ -1.495	€ -833	€ -662	-31%	1E Jaar is grootste teugbetaling !	
2E tot/met 25/35E per jaar	€ -15.878		€ -662	-330,8%		
SOM	€ -17.373		-14,5%	-361,9%		
	Jaar		25/35 Jaar	25		
Milieubijdrage CO2 Reductie / KG:	2.041		51.022			



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OMVORMERS

SolarEdge enkelfasige omvormers

SE2200H, SE3000H, SE3500H, SE3680H

Geoptimaliseerd met HD-Wave technologie

- Recordbrekend rendement
- Extreem klein, licht en eenvoudig te installeren
- Hoge betrouwbaarheid, zonder elektrolytische condensatoren
- Voor monitoring op paneelniveau
- Voor binnen- en buitenmontage

Enkelfasige omvormers

SE2200H, SE3000H, SE3500H, SE3680H

	SE2200H	SE3000H	SE3500H	SE3680H	
UITGANG					
AC-vermogen (nominaal)	2200	3000	3500	3680	VA
AC-vermogen (maximaal)	2200	3000	3500	3680	VA
AC-spanning (nominaal)	220 /230				Vac
AC-spanningsbereik	184 - 264,5				Vac
AC-frequentiebereik (nominaal)	50 / 60 ± 5				Hz
AC-stroom (continue)	10	14	16	16	A
Lekstroomdetectie / reststroomstapdetector	300 / 30				mA
Netcontrole, anti-eilandbedrijf, instelbare arbeidsfactor, limieten per land instelbaar	Ja				
INGANG					
DC-vermogen (maximaal)	3400	4650	5425	5700	W
Transformatorloos, niet-geaard	Ja				
DC-spanning (maximaal)	480				Vdc
DC-spanning (nominaal)	380				Vdc
DC-stroom (maximaal)	8,5	11,5	13,5	15	Adc
DC-ompolingsbescherming	Ja				
Lekstroom detectie	600kΩ gevoeligheid				
Maximaal rendement	99,2				%
EU rendement	98,3	98,8			%
Stand-by verbruik	< 2,5				W
EXTRA FUNCTIES					
Ondersteunde communicatie	RS485, Ethernet, ZigBee (optioneel), Wifi (optioneel), Ingebouwde GSM (optioneel)				
NORM EN REGELGEVING[1]					
Veiligheidsnormen	IEC-62109-1/2, AS-3100				
Elektriciteitsnetwerk standaards	AS-4777, VDE-AR-N-4105, VDE 0126-1-1, UTE C15-712, G83/2, G59/3, CEI-021, EN 50438, IEC61727, IEC62116, ÖNORM, TF3.2.1, C10-11, NRS 097-2-1				
EMC	IEC61000-6-2, IEC61000-6-3, IEC61000-3-11, IEC61000-3-12, FCC Part 15 Class B				
INSTALLATIE SPECIFICATIES					
AC-kabel doorvoer	9 -16				mm
AC-kabel diameteraansluitingen	1 - 16				mm^2
DC-aansluiting	1 x MC4				
Afmetingen (HxBxD)	280 x 370 x 142				mm
Gewicht	9,5				kg
Geluidsniveau	< 25				dBA
Koeling	Natuurlijke convectie				
Bedrijfstemperatuur	-20 to +60[2] (-40˚C optioneel)				˚C
Beschermingsklasse	IP65 – Buiten en binnen				

[1] Certificering in behandeling
[2] De-rating van 50˚C

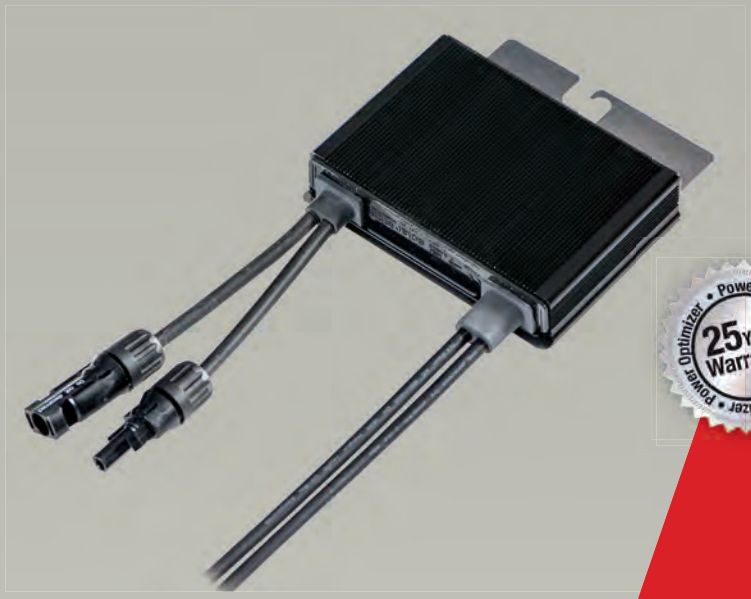
CE SUNSPEC RoHS

SolarEdge Power Optimizer

Module Add-On

P300 / P350 / P370 / P404 / P405 / P500

POWER OPTIMIZER



PV power optimization at the module-level

- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of modules mismatch-loss, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module level monitoring
- Module-level voltage shutdown for installer and firefighter safety

SolarEdge Power Optimizer Module Add-On

P300 / P350 / P370 / P404 / P405 / P500

	P300 (for 60-cell modules)	P350 (for high-power 60-cell and for 72-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P500 (for 96-cell modules)	P404 (for 60-cell and 72-cell, short strings)	P405 (for thin film modules)	
INPUT							
Rated Input DC Power[1]	300	350	370	500	405	405	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48	60		80	80	125	Vdc
MPPT Operating Range	8 - 48	8 - 60		8 - 80	12.5 - 80	12.5 - 105	Vdc
Maximum Continuous Input Current (Isc)	10	11		10.1			Adc
Maximum Efficiency	99.5						%
Weighted Efficiency	98.8						%
Overvoltage Category	II						
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)							
Maximum Output Current	15						Adc
Maximum Output Voltage	60				85		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)							
Safety Output Voltage per Power Optimizer	1						Vdc
STANDARD COMPLIANCE							
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3						
Safety	IEC62109-1 (class II safety), UL1741						
RoHS	Yes						
Fire Safety	VDE-AR-E 2100-712:2013-05						
INSTALLATION SPECIFICATIONS							
Maximum Allowed System Voltage	1000						Vdc
Dimensions (W x L x H)	128 x 152 x 27.5 / 5 x 5.97 x 1.08			128 x 152 x 35 / 5 x 5.97 x 1.37	128 x 152 x 43 / 5 x 5.97 x 1.69	128 x 152 x 50 / 5 x 5.97 x 1.96	mm / in
Weight (including cables)	630 / 1.4	655 / 1.5		750 / 1.7	775 / 1.7	845 / 1.9	gr / lb
Input Connector	MC4[2]					Single or Dual MC4[3]	
Output Connector	MC4						
Output Wire Length	0.95 / 3.0	1.2 / 3.9	0.95 / 3.0	1.2 / 3.9			m / ft
Operating Temperature Range	-40 - +85 / -40 - +185						°C / °F
Protection Rating	IP68 / NEMA6P						
Relative Humidity	0 - 100						%

[1] Rated STC power of the module. Module of up to +5% power tolerance allowed.
[2] For other connector types please contact SolarEdge.
[3] Dual version for parallel connection of 2 thin film modules; P/N: P405-5RMDMRM.

PV SYSTEM DESIGN USING A SOLAREDGE INVERTER[4]		SINGLE PHASE HD-WAVE	SINGLE PHASE	THREE PHASE	
Minimum String Length (Power Optimizers)	P300,P350,P370,P500	8		16	
	P404,P405	6		13	
Maximum String Length (Power Optimizers)		25		50	
Maximum Power per String		5700	5250	11250	W
Parallel Strings of Different Lengths or Orientations		Yes			

[4] It is not allowed to mix P404/P405 with P300/P350/P370/P500/P600/P700 in one string.

Solar Module Manufacturer Since 2004

Solar-nu.nl

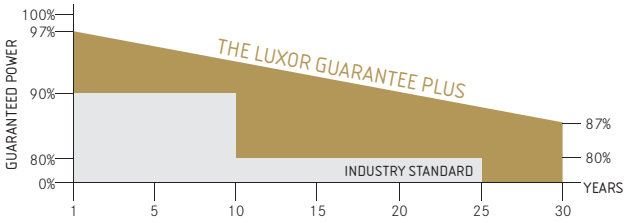
LUXOR
the sunshine people

30 YEARS
product guarantee[1]

30 YEARS
linear performance guarantee[1]

ECO LINE GLASS-GLASS
M60/ 290 - 310 W

Monocrystalline module family, Transparent- / White- / Black Edition



Longlife tested
- Selection of components
- Back glass

Power proofed
- Performance surplus of 0 Wp to 6.49 Wp
- Higher heat dispensing

Safety provided
- 100% PID free cells
- German warrantor

The Eco Line Glass-Glass module combines the typical and unique proven economy of the Eco Line with the longevity and the excellent temperature behaviour of a glass-glass module. Glass sheets on front and back side ensure a high mechanical stability as well as fire safety of the module. With a thickness of only 2 mm, the front glass offers more light transmission. The high-quality solar cells, with the highest efficiency and the best possible low-light performance, ensure optimum energy output with plus tolerances of 0 Wp to 6.49 Wp. Based on the reliability and durability of the Eco Line Glass-Glass module, manufactured to German standards, Luxor Solar guarantees a product and performance warranty of 30 years.

Luxor Solar GmbH | Theodor-Heuss-Straße 30 | 70174 Stuttgart | Germany | T+49.711.88888-999 | info@luxor-solar.com | www.luxor-solar.com

ECO LINE GLASS-GLASS

M60/290 - 310 W | TRANSPARENT- / WHITE- / BLACK EDITION

Monocrystalline module family | Module type LX - XXXM/156-60+ GG | XXX = Rated power Pmpp

Electrical data at STC

Rated power Pmpp [Wp]	290.00	295.00	300.00	305.00	310.00
Pmpp range to	296.49	301.49	306.49	311,49	316.49
Rated current Impp [A]	9.26	9.32	9.38	9,44	9.50
Rated voltage Vmpp [V]	31.37	31.68	32.02	32,33	32.68
Short-circuit current Isc [A]	9.78	9.83	9.88	9,93	9.98
Open-circuit voltage Uoc [V]	38.50	38.70	38.89	39,08	39.28
Efficiency at STC	17.85%	18.15%	18.46%	18,76%	19.09%
Efficiency at 200 W/m²	17.25%	17.51%	17.78%	18,06%	18.34%

Electrical data at NOCT

Pmpp [Wp]	214.58	217.95	221.68	225.18	228.89
Rated current Impp [A]	7.38	7.43	7.48	7.53	7.58
Rated voltage Vmpp [V]	29.06	29.33	29.64	29.91	30.21
Short-circuit current Isc [A]	7.80	7.84	7.88	7.92	7.96
Open-circuit voltage Uoc [V]	35.47	35.63	35.76 V	35.92	36.07

Specification as per STC (Standard test conditions): irradiance 1000 W/m2 | module temperature 25°C | AM = 1,5
NOCT (nominal operating cell temperature): irradiance 800 W/m2 | wind speed 1 m/sec | temperature 20°C | @45 +/- 2°C | AM = 1,5

Limiting values

Max. system voltage [V]	1000 V
Max. return current [I]	15 A
Operating Temperature	-40 to 85°C
Snow-load zone[2]	approval up to SLZ 3 (according to DIN 1055)
Max. pressure load (static) [Pa]	5400
Max. dynamic load [Pa]	2400

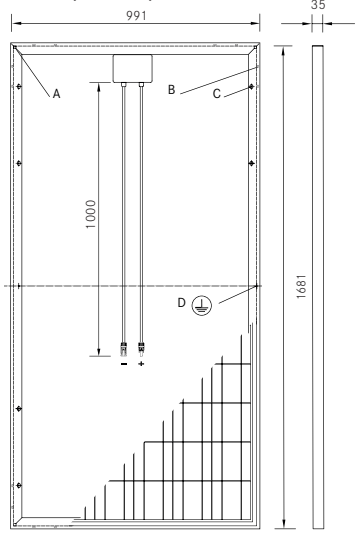
Temperature coefficient

Temperature coefficient [V] | [I] | [P]	-0.30% /°C | 0.06% /°C | -0.40% /°C

Specifications

Number of cells (matrix)	6 x 10, three strings in a row I 156 mm x 156 mm
Module dimensions (L x W x H)[3] | Weight	1681 mm x 991 mm x 35 mm | 21.5 kg
Front-side glass	2 mm hardened solar glass with low iron content
Back-side glass	2 mm hardened solar glass
Frame	stable, anodised aluminium frame in a hollow-section design
Junction Box	At least IP65
Cabel	4 mm² solar cable, cable length 1.0 m
Diodes	3 Schottky Diodes 15A/45V
Connectors	MC4 or equivalent (IP67)
Hail test (max. hailstorm)	Ø 45 mm | impact velocity 23 m/s

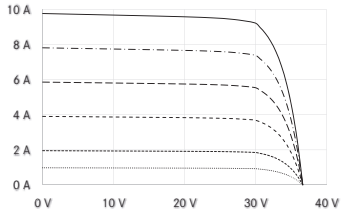
Back - / Front -/ Side view[3]



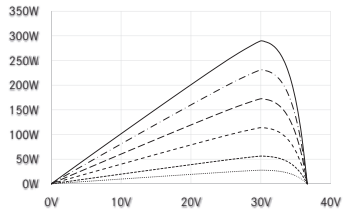
A: 4 x drainage 10*10 mm
B: 8 x ventilation aperture 3*7 mm
C: 8 x mounting hole[4] d = 7 mm
D: 2 x earthing d = 2 mm

Electrical characteristics

UI-diagramm e.g. LX-290M/156-60+ GG



UP-diagramm e.g. LX-290M/156-60+ GG



100 W/m²
200W/m²
400 W/m²
600 W/m²
800 W/m²
1000 W/m²

The specifications and average values can vary slightly. What is important is the corresponding data of the individual measurement. Specifications are subject to change without notice. Measurement tolerance: rated power +/- 3%, other values +/- 10%, all information in this data sheet corresponds to DIN 50380. A potential light-induced degradation of the power after commissioning is not considered here, other information can be found in the installation guidelines.

1 The specific warranty conditions are given under www.luxor-solar.com/download.htm
2 For standing installation
3 Tolerance L/W = +/- 3 mm, H = the dimensions given in the order confirmation will be decisive
4 Location on request

Luxor, your specialised company

Solar-nu.nl

Guidelines: 2006/95/EG-2006/95/EC,89/336/EWG-89/336/EEC,93/68/EWG-93/68/EEC

IEC 61215
IEC 61730

The validity of the certificates/listings for a specific country has to be examined under: www.luxor-solar.com/download.htm