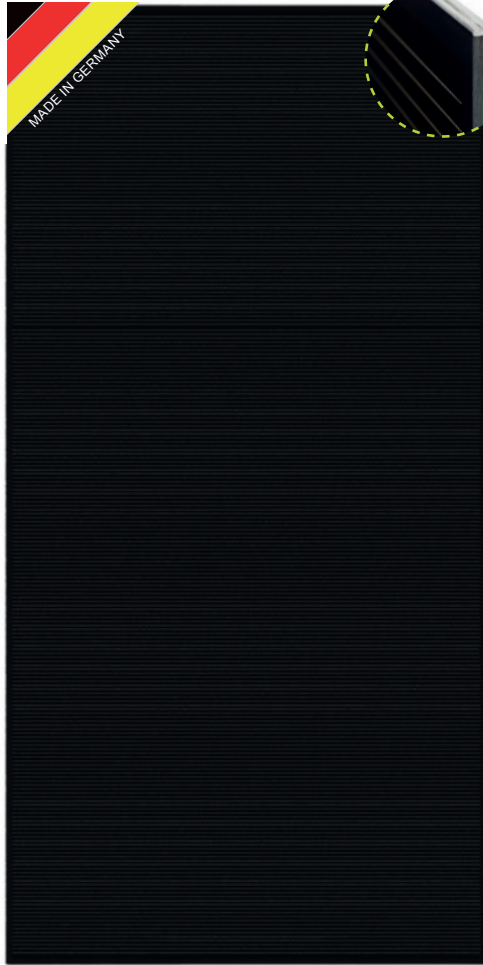


## Benefits TS Solar Thin Film Modules

### CX-SERIES



### HIGH ENERGY YIELD (KWH/KWP)

- better performance than crystalline silicon at low light and high temperatures

### POSITIV OUTPUT TOLERANCE (+2,5/-0 W)

- better field performance
- risk of reduced output is eliminated

### BLACK DESIGN EDGE SEAL

- reliable moisture and vapor barrier
- absolute insulation resistance through precise laser edge ablation
- aesthetic, homogenous appearance through the use of high-grade edge sealing material

### MADE AND DEVELOPED IN GERMANY

- reduced manufacturing costs while at the same time increased product quality
- further development of technology and reliability from renowned institutions

### MODULE FORMAT

- 1200 x 600mm
- light weight 12kg module
- outstanding use of space owing to the small module format
- easy to handle & installation >> one person

### CERTIFIED AND TESTED ACCORDING TO NEWEST STANDARDS

IEC 61215 & IEC 61730  
IEC 61701 Salt mist test  
PID @-600V  
Fire Rating A/B



### CALYXO CO<sub>2</sub> - CARBON FOOTPRINT

- most eco-efficient in the entire solar sector
- clean energy - at the lowest cost - with the least impact on our environment.

### MODULE WARRANTY



**Power Output Warranty**  
on 90% of rated power in the first 10 years  
on 80% over 25 years



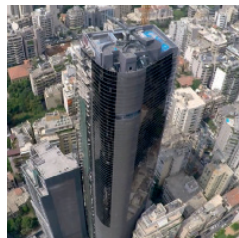
**Product Warranty**  
on material and workmanship



Residential



Roof Top



BIPV



Repowering



Ground Mounted

## MODULE DESCRIPTION

CX-Series	
Cell Type	Cadmium telluride
Length	1200 mm
Width	600 mm
Weight	12.0 kg
Thickness	6.8 mm
Area	0.72 m <sup>2</sup>
Cable diameter	2.5 mm <sup>2</sup>
Plus pole	650 mm
Minus pole	850 mm
Junction box	IP65
Bypass Diode	none
Front Glass	3.2 mm
Back glass	3.0 mm
Encapsulation	none EVA
Frame	none
Laod Rate	2400 Pa
Safety Class	II
Fire Rating	C

## ELECTRICAL CHARACTERISTICS

Performance at Standard Test Conditions (STC: 1000 W/m<sup>2</sup>, 25°C, AM 1.5 SPECTRUM)

POWER CLASS	CX-Series		CX1	CX3	CX3pro /2
Nominal Power [+10% / -5%]	P <sub>MPP</sub>	[W]	70.0 - 80.0	72.5 - 87.5	80.0 - 90.0
Current at max. Power	I <sub>MPP</sub>	[A]	1.17 - 1.23	1,70 - 2.20	1.87 - 1,97
Voltage at max. Power	V <sub>MPP</sub>	[V]	60.5 - 65.1	37.0 - 51.0	43.5 - 46.4
Short Circuit Current	I <sub>SC</sub>	[A]	1.35 - 1.41	1.90 - 2.30	2.13 - 2.19
Open Circuit Voltage	V <sub>OC</sub>	[V]	85.8 - 89.1	53.0 - 64.0	56.7 - 58.6
Maximum System Voltage	V <sub>SYS</sub>	[V]	1000		
Maximum Reverse Current	I <sub>R</sub>	[A]	2.00	4.00	3.50
Connector	I <sub>CF</sub>	[A]	MC3	Y-Sol4	MC4

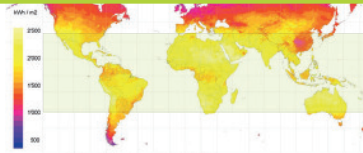
Normal Module Operating Temperature (NMOT: 800 W/m<sup>2</sup>, 45 ±2°C, AM 1.5 Spectrum)

POWER CLASS	CX-Series		CX1	CX3	CX3pro /2
Nominal Power	P <sub>MPP</sub>	[W]	54.0 - 62.0	56.0 - 68.0	62.0 - 70.0
Current at max. Power	I <sub>MPP</sub>	[A]	0.94 - 1.00	1.46 - 1.54	1.50 - 1.60
Voltage at max. Power	V <sub>MPP</sub>	[V]	58.0 - 62.4	39.0 - 44.3	41.7 - 44.5
Short Circuit Current	I <sub>SC</sub>	[A]	1.07 - 1.12	1.72 - 1.75	1.71 - 1.76
Open Circuit Voltage	V <sub>OC</sub>	[V]	82.7 - 86.0	57.0 - 58.5	54.3 - 56.1

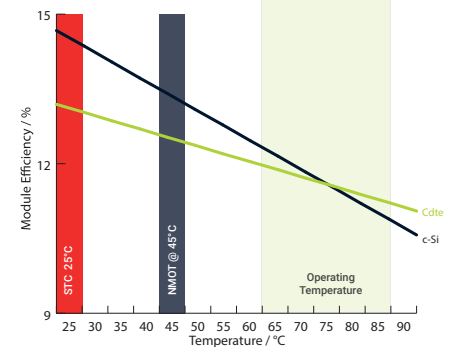
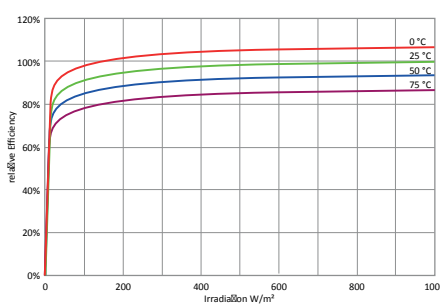
### Temperature coefficients

Temperature I <sub>SC</sub>	α	[%/K]	0.03
Temperature V <sub>OC</sub>	β	[%/K]	-0.21
Temperature P <sub>MPP</sub>	γ	[%/K]	-0.20
NMOT		[°C]	45 +/-2

### Efficiency advantage in hot climate regions



### Performance at low irradiance



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