

# The KD series – Large-area photovoltaic modules with new frame

## Advanced technology

Thanks to Kyocera's advanced cell processing technology, intensive research and automated production facilities they are able to produce a highly efficient polycrystalline photovoltaic module.

## High efficiency

The embedded Kyocera high-performance solar cells with the basic measurement 156 x 156 mm achieve an efficiency of over 16 % and guarantee an extremely high annual energy output of the photovoltaic plant.

## Improved aluminium frame

These cells are encapsulated between a tempered glass cover (resistance to impact of hail acc. to IEC 61215 ed. 2 tested by the TÜV – Technical Control Association) and an EVA pottant with back sheet to provide efficient protection from the severest environmental conditions. The entire laminate is installed in an anodized aluminum frame to provide structural strength and

ease of mounting, which now has a height of 46 mm and can tolerate stresses of up to 5400 N/m<sup>2</sup>.

The connecting box on the back is provided with bypass diodes preventing the risk of overheating of individual solar cells (hot spot effect). Several PV modules connected in series can easily be wired up using pre-assembled solar cables and MultiContact plugs.

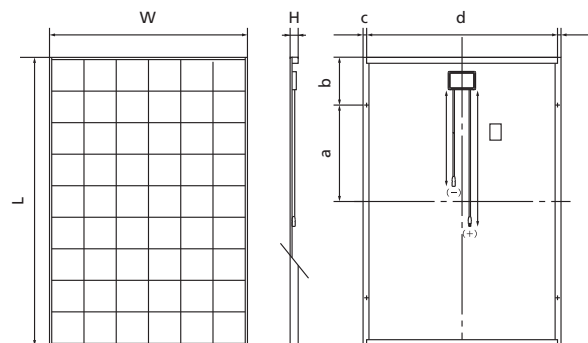
Kyocera manufactures all components in its own manufacturing plants – without the acquisition of semi finished products – for a constantly high quality of its products.

## Range of application

- Private residences
- Industrial and large plants
- Agricultural operations
- Free-standing plants
- Solar energy plants







The new KD series from Kyocera with increased efficiency and performance.



The KD series has new dimensions and thus is incompatible with previous models of the KC series.

## SOLAR MODULES Framed Modules

Art. No.*	0101296	0101297	0101209	0101286
				
Model	KD140GH-2PU	KD190GH-2PU	KD215GH-2PU	KD245GH-2PB
Nominal power	140 W $\pm 5$ %	190 W $\pm 5$ %	215 W +5 %, -3 %	245 W +5 %, -3 %
Max. system voltage	1000 V	1000 V	1000 V	1000 V
Operating voltage	17.70 V	23.60 V	26.60 V	29.80 V
Operating current	7.91 A	8.06 A	8.09 A	8.23 A
Open circuit voltage	22.10 V	29.50 V	33.20 V	36.90 V
Short circuit current	8.68 A	8.82 A	8.78 A	8.91 A
Temp. coefficient open circuit voltage	-79.56 mV/K, -0.36 %/K	-106.2 mV/K, -0.36 %/K	-119.52 mV/K, -0.36 %/K	-132.84 mV/K, -0.36 %/K
Temp. coefficient short circuit current	5.208 mA/K, 0.06 %/K	5.292 mA/K, 0.06 %/K	5.268 mA/K, 0.06 %/K	5.346 mA/K, 0.06 %/K
Temp. coefficient nominal power	-644 mW/K, -0.46 %/K	-874 mW/K, -0.46 %/K	-989 mW/K, -0.46 %/K	-1127 mW/K, -0.46 %/K
Reverse current load	15 A	15 A	15 A	15 A
Max. string protection	15 A	15 A	15 A	15 A
Number of bypass diodes	2 pc.	3 pc.	3 pc.	3 pc.
Cells per module	36 pc.	48 pc.	54 pc.	60 pc.
Cell dimensions (L / W)	156 mm / 156 mm	156 mm / 156 mm	156 mm / 156 mm	156 mm / 156 mm
Cell connection	3 bus bar	3 bus bar	3 bus bar	3 bus bar
Cell technology	Polycrystalline silicon	Polycrystalline silicon	Polycrystalline silicon	Polycrystalline silicon
Connection	MC PV-KBT3 / MC PV-KST3, cables, 840 (-) / 1010 (+) mm	MC PV-KBT3 / MC PV-KST3, cables, 840 (-) / 1030 (+) mm	MC PV-KBT3 / MC PV-KST3, cables, 900 (-) / 1100 (+) mm	MC PV-KBT3 / MC PV-KST3, cables, 960 (-) / 1190 (+) mm
Mounting frame	Black anodized aluminium	Black anodized aluminium	Black anodized aluminium	Black anodized aluminium
Dimensions (L / W / H)	1500 mm / 668 mm / 46 mm	1338 mm / 990 mm / 46 mm	1500 mm / 990 mm / 46 mm	1662 mm / 990 mm / 46 mm
Weight	12.5 kg	16.0 kg	18.0 kg	21.0 kg
Number per container	960 pc.	760 pc.	680 pc.	600 pc.
Max. load	5400 N/m <sup>2</sup>	5400 N/m <sup>2</sup>	5400 N/m <sup>2</sup>	5400 N/m <sup>2</sup>
Performance warranty**	10 / 20 (25) years	10 / 20 (25) years	10 / 20 (25) years	10 / 20 (25) years
Product warranty	10 years	10 years	10 years	10 years
Norms	IEC 61215 ed. 2, IEC 61730, protection class II, TÜVdotCOM-ID: 0000023299, MCS, PV CYCLE	IEC 61215 ed. 2, IEC 61730, protection class II, TÜVdotCOM-ID: 0000023299, MCS, PV CYCLE	IEC 61215 ed. 2, IEC 61730, protection class II, TÜVdotCOM-ID: 0000023299, MCS, PV CYCLE	IEC 61215 ed. 2, IEC 61730, protection class II, TÜVdotCOM-ID: 0000023299, MCS, PV CYCLE

\* - Art. No. 0101296: Minimum order quantity of 1 container

\*\* - Manufacturer's performance warranty: 10 years on 90 % / 20 years on 80 % of the minimal nominal power under standard testing conditions (STC) – SPECIAL PROMOTION: 25 years on 80 % on orders from 15/09/2011

The electrical specifications are under standard test conditions (STC) of irradiance of 1000 W/m<sup>2</sup>, spectrum of 1.5 air mass and cell temperature of 25°C.