

## SG125HV

String Inverter for 1500 Vdc System



### High Yield

- Patent five-level topology, max. efficiency 98.9 %, European efficiency 98.7 %, CEC efficiency 98.5 %
- Full power operation without derating at 50 °C



### Easy O&M

- Virtual central solution, easy for O&M
- Compact design and light weight for easy installation



### Saved Investment

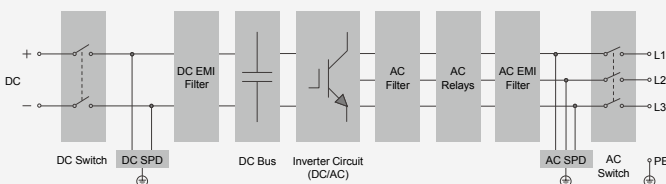
- DC 1500 V, AC 600 V, low system initial investment
- 1 to 5 MW power block design for lower MV transformer and labor cost
- Max. DC/AC ratio up to 1.5



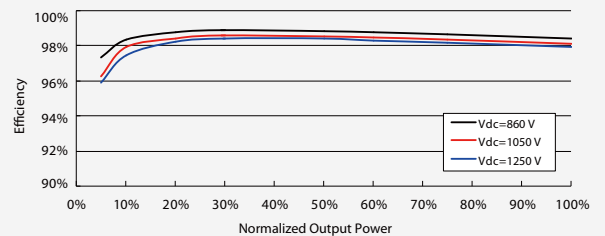
### Grid Support

- Compliance with both IEC and UL safety, EMC and grid support regulations
- Low/High voltage ride through (L/HVRT)
- Active & reactive power control and power ramp rate control

### Circuit Diagram



### Efficiency Curve



**Input (DC)**
**SG125HV**

Max. PV input voltage	1500 V
Min. PV input voltage / Startup input voltage	860 V / 920 V
Nominal input voltage	1050 V
MPP voltage range	860 – 1450 V
MPP voltage range for nominal power	860 – 1250 V
No. of independent MPP inputs	1
No. of DC inputs	1
Max. PV input current	148 A
Max. DC short-circuit current	240 A

**Output (AC)**

AC output power	125000 VA @ 50 °C
Max. AC output current	120 A
Nominal AC voltage	3 / PE, 600 V
AC voltage range	480 – 690 V
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz
THD	< 3 % (at nominal power)
DC current injection	< 0.5 % I <sub>n</sub>
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging
Feed-in phases / Connection phases	3 / 3

**Efficiency**

Max. efficiency / Euro. efficiency / CEC efficiency	98.9 % / 98.7 % / 98.5 %
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**Protection**

DC reverse connection protection	Yes
AC short-circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
DC switch / AC switch	Yes / Yes
Overvoltage protection	DC Type II / AC Type II

**General Data**

Dimensions (W*H*D)	670*902*296 mm <b>26.4"*35.5"*11.7"</b>
Weight	76 kg <b>167.5 lb</b>
Isolation method	Transformerless
Degree of protection	IP 65 <b>NEMA 4X</b>
Night power consumption	< 4 W
Operating ambient temperature range	-25 to 60 °C (> 50 °C derating) <b>-13 to 140 °F (&gt; 122 °F derating)</b>
Allowable relative humidity range (non-condensing)	0 – 100 %
Cooling method	Smart forced air cooling
Max. operating altitude	4000 m (> 3000 m derating) <b>13123 ft (&gt; 9843 ft derating)</b>
Display / Communication	LED, Bluetooth+APP / RS485
DC connection type	OT or DT terminal (Max. 185 mm <sup>2</sup> <b>350 Kcmil</b> )
AC connection type	OT or DT terminal (Max. 185 mm <sup>2</sup> <b>350 Kcmil</b> )
Compliance	CE, IEC 62109-1/-2, IEC 61000-6-2/-4, IEC 61727, IEC 62116, IEC 61000-3-11/-12, UL 1741, UL 1741 SA, IEEE 1547, IEEE 1547.1, CSA C22.2 107.1-01 and California Rule 21
Grid support	LVRT, HVRT, active & reactive power control and power ramp rate control
Type designation	SG125HV-10



powered by

**Q.ANTUM DUO**

# Q.PEAK DUO L-G8.2 415-430

ENDURING HIGH  
PERFORMANCE



### Q.ANTUM TECHNOLOGY: LOW LEVELISED COST OF ELECTRICITY

Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 20.3%.



### INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.



### ENDURING HIGH PERFORMANCE

Long-term yield security with Anti LID Technology, Anti PID Technology<sup>1</sup>, Hot-Spot Protect and Traceable Quality Tra.Q™.



### EXTREME WEATHER RATING

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (2400 Pa).



### A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance warranty<sup>2</sup>.



### STATE OF THE ART MODULE TECHNOLOGY

Q.ANTUM DUO combines cutting edge cell separation and innovative 12-busbar design with Q.ANTUM Technology.

<sup>1</sup> APT test conditions according to IEC/TS 62804-1:2015, method B (-1500 V, 168h)

<sup>2</sup> See data sheet on rear for further information.

### THE IDEAL SOLUTION FOR:



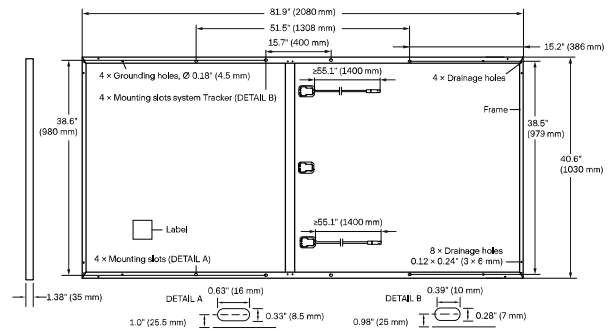
Rooftop arrays on commercial/industrial buildings



Ground-mounted solar power plants

## MECHANICAL SPECIFICATION

Format	81.9 in × 40.6 in × 1.38 in (including frame) (2080 mm × 1030 mm × 35 mm)
Weight	55.1 lbs (25.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Anodized aluminum
Cell	6 × 24 monocrystalline Q.ANTUM solar half cells
Junction Box	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
Cable	4 mm <sup>2</sup> Solar cable; (+) ≥ 55.1 in (1400 mm), (-) ≥ 55.1 in (1400 mm)
Connector	Stäubli MC4-Evo2, Hanwha Q CELLS HQC4, Amphenol UTX, Renhe 05-8, JMTHY JM601A; Tongling Cable01S-F, IP68 or Friends PV2e; IP67

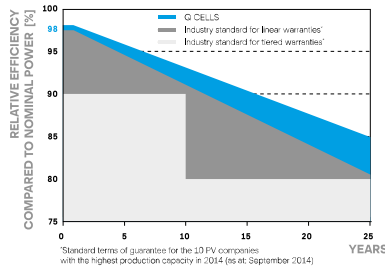


## ELECTRICAL CHARACTERISTICS

POWER CLASS		415	420	425	430	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC <sup>1</sup> (POWER TOLERANCE +5 W / -0 W)						
Minimum	Power at MPP <sup>1</sup>	$P_{MPP}$ [W]	415	420	425	430
	Short Circuit Current <sup>1</sup>	$I_{SC}$ [A]	10.69	10.74	10.78	10.83
	Open Circuit Voltage <sup>1</sup>	$V_{OC}$ [V]	48.59	48.84	49.09	49.33
	Current at MPP	$I_{MPP}$ [A]	10.18	10.22	10.27	10.31
	Voltage at MPP	$V_{MPP}$ [V]	40.77	41.08	41.39	41.70
	Efficiency <sup>1</sup>	$\eta$ [%]	≥ 19.4	≥ 19.6	≥ 19.8	≥ 20.1
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT <sup>2</sup>						
Minimum	Power at MPP	$P_{MPP}$ [W]	310.8	314.5	318.3	322.0
	Short Circuit Current	$I_{SC}$ [A]	8.61	8.65	8.69	8.72
	Open Circuit Voltage	$V_{OC}$ [V]	45.82	46.05	46.29	46.52
	Current at MPP	$I_{MPP}$ [A]	8.01	8.05	8.08	8.12
	Voltage at MPP	$V_{MPP}$ [V]	38.79	39.09	39.38	39.67

<sup>1</sup>Measurement tolerances  $P_{MPP} \pm 3\%$ ;  $I_{SC}$ ;  $V_{OC} \pm 5\%$  at STC: 1000 W/m<sup>2</sup>, 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • 2800 W/m<sup>2</sup>, NMOT, spectrum AM 1.5

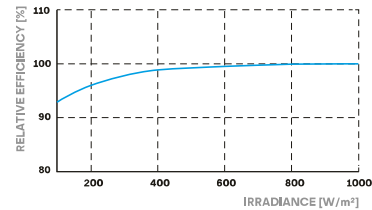
### Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.54% degradation per year. At least 93.1% of nominal power up to 10 years. At least 85% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

### PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m<sup>2</sup>)

### TEMPERATURE COEFFICIENTS

Temperature Coefficient of $I_{SC}$	$\alpha$ [%/K]	+0.04	Temperature Coefficient of $V_{OC}$	$\beta$ [%/K]	-0.27
Temperature Coefficient of $P_{MPP}$	$\gamma$ [%/K]	-0.35	Normal Module Operating Temperature	NMOT [°F]	109 ± 5.4 (43 ± 3 °C)

## PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage $V_{SYS}$	[V]	1500 (IEC)/1500 (UL)	Safety Class	II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI / UL 1703	C (IEC) / TYPE 1 (UL)
Max. Design Load, Push / Pull <sup>3</sup>	[lbs / ft <sup>2</sup> ]	75 (3600 Pa) / 33 (1600 Pa)	Permitted Module Temperature on Continuous Duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Max. Test Load, Push / Pull <sup>3</sup>	[lbs / ft <sup>2</sup> ]	113 (5400 Pa) / 50 (2400 Pa)		

<sup>3</sup>See Installation Manual

## QUALIFICATIONS AND CERTIFICATES

UL 1703, CE-compliant, IEC 61215:2016, IEC 61730:2016, Application Class II, U.S. Patent No. 9,893,215 (solar cells)



## PACKAGING INFORMATION

Number of Modules per Pallet	29
Number of Pallets per 53' Trailer	26
Number of Pallets per 40' HC-Container	22
Pallet Dimensions (L × W × H)	84.6 × 45.3 × 48.0 in (2150 × 1150 × 1220 mm)
Pallet Weight	1717 lbs (779 kg)

**Note:** Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

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