



PERLIGHT



PLM-290MA-60  
MONO



# Think **Black** series

THE REAL BLACK IN SOLAR  
SLEEK, POWERFUL, STYLISH

HIGH QUALITY BLACK WELDING STRIPS - Prevents over heating of the panel (Patent pending)

LONGER LIFE - Less panel degradation over the life of the panel

ULTRA SMOOTH TEMPERED GLASS - Less dust and grime collecting on the panels

NEW GENERATION ANTI REFLECTIVE GLASS COATING - Increases light transmittance

HIGH QUALITY EVA FILM - Widens light transmittance range



# Think **Black** series

## ELECTRICAL PERFORMANCE

Module type	PLM-290MA-60 Series							
Power output	P <sub>max</sub>	W	250	260	270	280	285	290
Power output tolerances	ΔP <sub>max</sub>	%	0 - 3					
Voltage at Pmax	V <sub>mpp</sub>	V	30.49	31.18	31.73	31.64	31.78	31.98
Current at Pmax	I <sub>mpp</sub>	A	8.2	8.34	8.51	8.85	8.97	9.07
Open-circuit voltage	V <sub>oc</sub>	V	38	38.2	38.42	39.24	39.35	39.58
Short-circuit current	I <sub>sc</sub>	A	8.78	8.92	9.08	9.24	9.36	9.46
STC:1000W/m <sup>2</sup> irradiance, 25°C cell temperature, AM 1.5g spectrum according to EN 60904-3.								

## THERMAL CHARACTERISTICS

Nominal operating cell temperature	NOCT	°C	45±2
Temperature coefficient of Pmax	$\gamma$	%/°C	-0.45
Temperature coefficient of Voc	$\beta_{Voc}$	%/°C	-0.34
Temperature coefficient of Isc	$\alpha_{Isc}$	%/°C	0.06
Temperature coefficient of Vmpp	$\beta_{Vmpp}$	%/°C	-0.40

## OPERATING CONDITIONS

Max. system voltage	1000V <sub>DC</sub>
Limiting reverse current	15A
Operating temperature range	-40°C to 85°C
Max. static load front (e.g., snow)	5400Pa
Max. static load back (e.g., wind)	2400Pa
Max. hailstone impact (diameter / velocity)	25mm / 23m/s

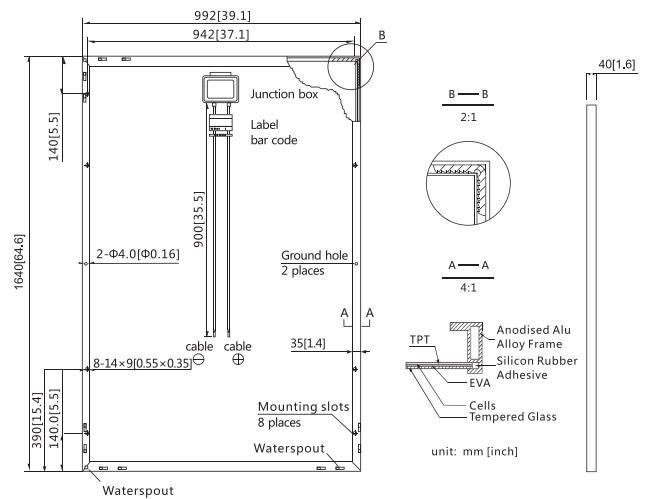
## MECHANICAL CHARACTERISTICS

Front cover (material / thickness)	low-iron tempered glass / 3.2mm
Backsheet (color)	black
Cell (quantity/material/dimensions)	60/monocrystalline silicon/156x156mm
Frame (material / color)	anodized aluminum alloy / black
Junction box (protection degree)	≥IP65
Cables & Plug connectors	900mm/4mm <sup>2</sup> & MC4 compatible/IP67
Module Dimensions (L / W / H)	1640mm x 992mm x 40mm
Module Weight	18.1kg

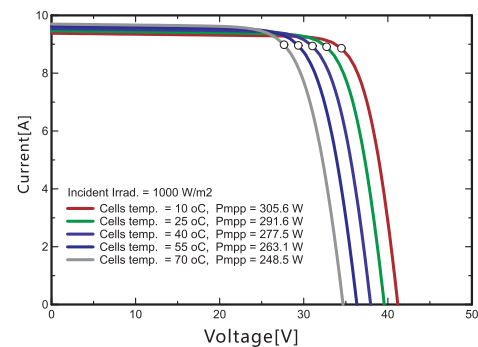
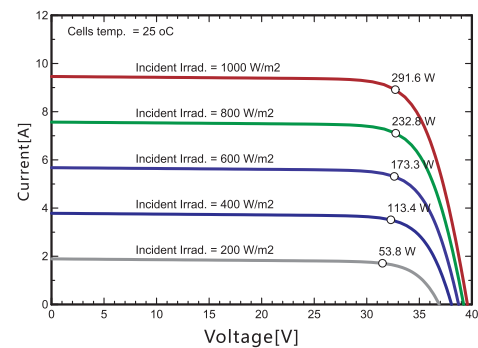
## PACKING DETAILS

Container	20'GP	40'HQ
Pieces per pallet	52	58
Pallets per container	6	14
Pieces per container	312	812

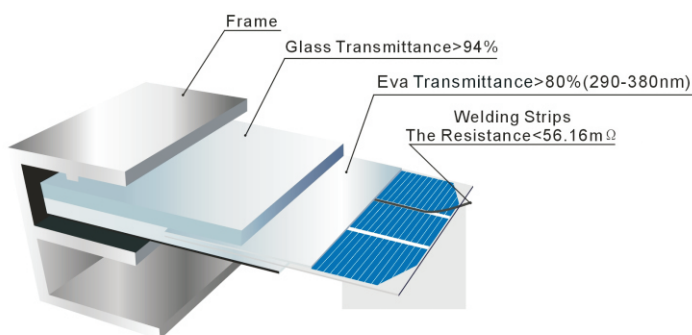
## Module Diagram:



## Electrical Curves:



## ALL BLACK PANELS



## REGULAR BLACK PANELS

