

90 Watt Photovoltaic Module – Saturn Technology

BP 790

3012E-2 05/04

The BP 790 forms part of the new high efficiency Saturn 7 Series “real power” range of solar modules. Our industry leading warranty is based on nominal power output, meaning more power for a longer period of time. The BP 790 is ideal for installations where high power is needed in a limited area. It is ideally suited for grid connect applications such as residential systems or installations on commercial roofs, as well as traditional photovoltaic applications such as telecommunications and rural electrification.

Performance

Rated power	90W
Module efficiency	13.9%
Nominal voltage	12V
Warranty	90% power output over 12 years 80% power output over 25 years Free from defects in materials and workmanship for 5 years

Configuration

BP 790S	Clear Universal frame with output cables and polarized Multicontact (MC) connectors
BP 790L	Unframed laminate version of the BP 790S
BP 790H	Clear Universal frame and robust junction box

Qualification Test Parameters

Temperature cycling range	-40°C to +85°C for 200 cycles
Damp heat test	85°C and 85% relative humidity for 1000h
Front & rear static load test (eg: wind)	2400 Pa
Front load test (eg: snow)	5400 Pa
Hailstone impact test	25mm hail at 23m/s from 1m distance

Quality and Safety

- Manufactured in ISO 9001 and ISO 14003 certified factories
- Conforms to European Community Directive 89/33/EEC, 73/23/EEC, 93/68/EEC
- Certified to IEC 61215

Module power measurements calibrated to World Radiometric Reference through ESTI (European Solar Test Installation at Ispra, Italy)

Framed modules certified by TÜV Rheinland as Safety Class II (IEC 60364) equipment for use in systems up to 1000 VDC

Laminates recognised by Underwriter's Laboratories for electrical and fire safety (Class C rating)

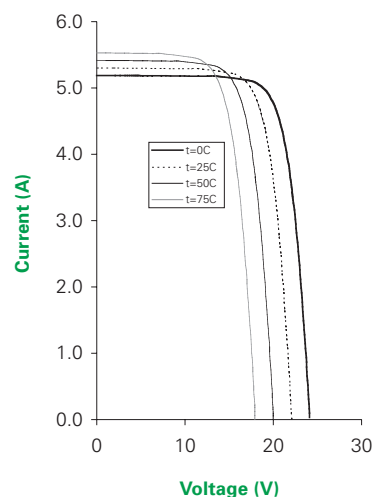


BP 790S scale 1:14

Efficiency (%)

9-11	11-12	12-13	13-14	14-15
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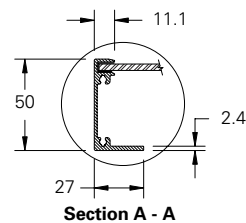
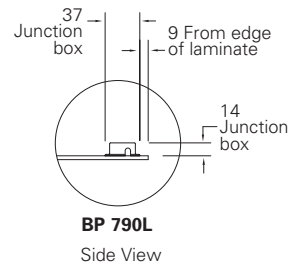
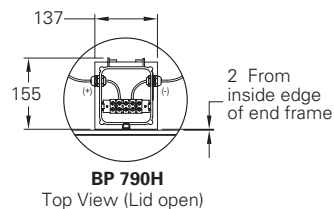
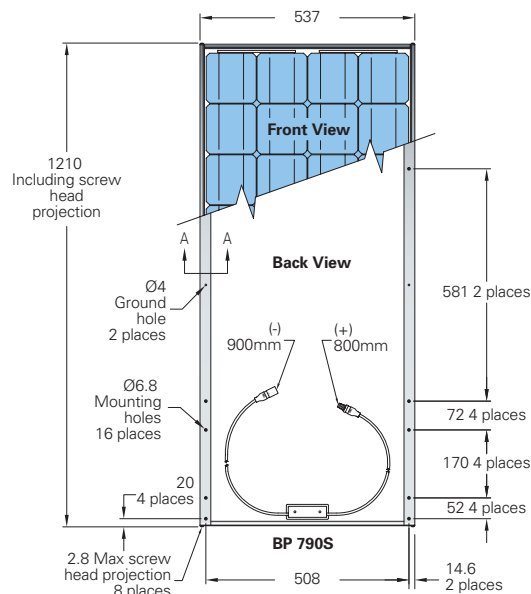
BP 790 I-V Curves



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Module Diagram



Self-tapping grounding screw, instruction sheet and warranty document included with each module.

Typical Electrical Characteristics

BP 790

Warranted minimum power*	90W
Voltage at P_{max} (V_{mp})	18.1V
Current at P_{max} (I_{mp})	5.0A
Short circuit current (I_{sc})	5.4A
Open circuit voltage (V_{oc})	22.4V
Temperature coefficient of I_{sc}	(0.065±0.015)%/K
Temperature coefficient of V_{oc}	-(80±10)mV/K
Temperature coefficient of P_{max}	-(0.5±0.05)%/K
NOCT (Air 20°C; Sun 0.8kW/m ² ; wind speed 1m/s)	47±2°C
Maximum series fuse rating	15A
Maximum system voltage	600V (IEC 61215 rating) 1000V (TÜV Rheinland rating)

*As measured by BP Solar test equipment to the nearest watt.

Standard test conditions - irradiance of 1000W/m² at an AM1.5G solar spectrum and a temperature of 25°C.

Mechanical Characteristics BP 790S / BP 790H

BP 790L

Dimensions (mm) (Overall tolerances +/-3mm)	1210 x 537 x 50	1197 x 530 x 19
Weight (kg)	7.7	6.1
Frame	Clear anodised aluminium alloy type 6063T6. Silver Universal frame.	
Solar cells	36 cells (125mm x 125mm) configured geometrically for a 4 x 9 matrix connected in series.	
Junction box (BP 790H)	IP65 junction box with 6 terminal screw connection block, accepts M20 or cable fittings accepting 7-14mm diameter cable. Terminals accept 2.5-10mm ² (8 to 14 AWG) wire.	
Output cables (BP 790S / BP 790L)	RHW AWG# 12 (3.3mm ²) cable with polarized weatherproof DC rated Multicontact connectors; asymmetrical lengths 900mm (-) and 800mm (+).	
Diodes	Two 9A, 45V Schottky by-pass diodes included.	
Construction	Front: High transmission 3mm tempered glass. Rear: White tedlar; Encapsulant: EVA.	

Your BP Solar Distributor:

