

# Technical Description



## Photovoltaic Module NP190GKg

Product Code: 13189



**54 polycrystalline Si solar cells**

**Main application: grid PV systems**

### Module Electrical Performance under Standard Test Conditions

*Refers to standard test conditions of 1000 Wm<sup>-2</sup> solar irradiance, 25°C cell temperature, Air Mass 1.5.*

*Note: Maximum power point is subject to +5W/-0W variation. All other values are typical and for guidance only.*

Maximum Power Point: 190 Watts, 7.33 Amps at 25.9 Volts.

Short Circuit: 8.02 Amps. Open circuit: 33.1 Volts.

### Dimensions and Weight

*all dimensions +/- 2mm, weight approximately +/-0.3kg*

Length: 1475mm. Width: 986mm. Thickness at edge: 35mm. Weight: 19.5kg

### Construction

Top cover material: low iron tempered glass 4mm

Rear cover material: PVDF-PET-PVDF

Encapsulant (lamination material): EVA

Frame: anodised aluminium

3 factory-fitted bypass diodes

1 junction box type S1410-2

2 x 1m cables 4 sq mm

### Integral mounting holes

Along length: 790mm centre to centre, 342.5mm centre to module edge.

4 holes, size 7mm.

Across width: 943mm centre to centre, 21.5mm centre to module edge.

### Cell circuit

Cell dimensions: Length (tab direction) 156mm. Width: 156mm.

Electrical circuit: 54 cells in series

Cell layout: 6 rows, each row is 9 cells long.

### Normal Operating Cell Temperature (NOCT)

46°C

*error in measurement around +/- 2°C*

*Cell temperature at 800Wm<sup>-2</sup> solar irradiance, 20°C ambient temperature, wind speed <=1ms<sup>-1</sup>, free air access to rear.*

### Efficiencies based on Standard Test Conditions Rating

Module: 13.1%

Laminated area: 13.2%

Cells alone: 14.5%

*Note: Standard Test Conditions efficiency figures should only be used to compare one module with another. These efficiency figures do not apply to actual field performance, for which a careful analysis of operating conditions is necessary to determine the effects of module temperature and other factors.*

*Specifications may change due to Naps policy of continuous product improvement.*

*Please check current specification before purchasing.*

*Information last updated: 14-Sep-09*

**Naps Systems Oy, Pakkalankuja 7A, FIN-01510 Vantaa, Finland**

**Tel +358 20 7545 666, Fax +358 20 7545 660, [www.napssystems.com](http://www.napssystems.com)**