



D Series

DuPont Apollo D Series photovoltaic modules are designed and manufactured using the cutting-edge amorphous / microcrystalline silicon (a-Si/ μ c-Si) thin film technology. With unique product features and capabilities, they are able to provide ideal solution for large scale solar farm projects.

Key Product Advantages:

- **Better Return on Investment, ROI**

High Efficiency

DuPont Apollo D Series thin film modules can generate high energy power resulted from their improved cell conversion efficiency.

Optimized BOS (Balance-of-System) Cost

For large solar array applications, DuPont Apollo D Series modules can reduce the amount of BOS cost considerably by the integration of the module kit and installation system.

High Tolerance in Remote Locations

The glass-to-glass feature of DuPont Apollo D Series modules is suitable for PV applications in remote locations which require high mechanical stability, tolerance for temperature and moisture fluctuation. The modules are designed with high quality tempered glass and dual sealing extra encapsulation to enhance their capabilities.

- **Multiple Mechanical Load Selections**

DuPont Apollo D Series modules has the back-rail mounting kit option to offer and this feature enables greater mechanical support under heavy snow and strong wind conditions.

- **Suitable for Green Building with Aesthetic Design**

The aesthetic design of DuPont Apollo D Series modules is a preferable option for green building design and can blend with the original building appearance.

DuPont Apollo D Series modules provide stable performance under high temperature and weak light conditions (e.g. reflective, indirect and diffusive light) and the shadowing environment. This feature enables greater flexibility for adjusting the mounting angle to meet special rooftop requirement in the system design.

- **Quality and Reliability**

DuPont Apollo D Series modules are manufactured in an ISO 9001 certified facility, and the modules have received the internationally recognized IEC 61646 and IEC 61730 certifications.

- **Green Product Commitment**

DuPont Apollo is committed to environmental responsibility and our hazardous substance process management in product design, development and manufacturing has obtained the internationally recognized IECQ QC 080000 qualification.



General Enquiry : +852 3664 3000 | enquiry.apollo@hkg.dupont.com
Customer Service : +852 3664 3018 | cs@hkg.dupont.com
www.apollo.dupont.com



The miracles of science™



The miracles of science™

DuPont Apollo D Series Thin Film Modules

- ✓ High Energy Yields
- ✓ Stable Power Output
- ✓ Robust Encapsulation
- ✓ Integrated Mounting Solution
- ✓ Low BOS Cost
- ✓ Low Maintenance Cost
- ✓ Low Cable Power Loss

Product Specification

| Model | DA130 | DA133 | DA136 | DA139 | DA142 | DA145 |
|------------|--|-------|-------|-------|-------|-------|
| Technology | Amorphous / Microcrystalline Silicon (Tandem Junction) | | | | | |

| Mechanical characteristics | |
|----------------------------|--|
| Dimensions | L 1400 x W 1100 x T 7.6 mm (T 24.6 mm with junction box) |
| Weight | 30 kg |
| Front Cover | 4.0 mm TCO Glass |
| Encapsulant | EVA |
| Back Cover | 3.2 mm Tempered Glass |
| Frame | Frameless |

| Electrical Characteristics | |
|---|-------------------------------------|
| At Standard Test Conditions (STC) | |
| Nominal power output (Pmpp) | 130W 133W 136W 139W 142W 145W |
| Voltage at Pmpp (Vmpp) | 118V 119V 120V 120V 121V 122V |
| Current at Pm point (Impp) | 1.10A 1.12A 1.14A 1.16A 1.17A 1.19A |
| Open circuit voltage (Voc) | 154V 154V 155V 156V 156V 157V |
| Short circuit current (Isc) | 1.27A 1.31A 1.35A 1.39A 1.43A 1.47A |
| Open circuit voltage, initial (Voc, initial) | 158V 159V 159V 160V 161V 162V |
| Short circuit current, initial (Isc, initial) | 1.30A 1.34A 1.38A 1.42A 1.46A 1.50A |

| At Nominal Operating Cell Temperature (NOCT) | |
|--|-------------------------------------|
| Nominal power output (Pmpp) | 96W 98W 100W 102W 105W 107W |
| Voltage at Pm point (Vmpp) | 108V 108V 109V 109V 110V 111V |
| Current at Pm point (Impp) | 0.89A 0.91A 0.92A 0.94A 0.95A 0.97A |
| Open circuit voltage (Voc) | 143V 143V 144V 144V 145V 146V |
| Short circuit current (Isc) | 1.04A 1.07A 1.10A 1.13A 1.16A 1.19A |

| Temperature Characteristics (1000 W/m ² , AM 1.5) | |
|--|--------------|
| α Temperature coefficient of Isc | + 0.08% / °C |
| β Temperature coefficient of Voc | - 0.33% / °C |
| γ Temperature coefficient of Pmpp | - 0.34% / °C |

| Operating Conditions | |
|--|--|
| Operating temperature | -40 ~ +85 °C |
| Maximum mechanical load (front / back) | 2400 / 2400; 5400 / 2400; 5600 / 5600 N/m ² |
| Maximum system voltage | 1000 V (IEC) |
| Maximum reverse current overload | 2A |
| Connector | MC3 Compatible / MC4 Compatible |
| Cable size | 2.5 mm ² |
| Cable length | 890 ~ 1000 mm |

| Standard Guarantees and Certifications | |
|--|--|
| Product warranty | 5 years |
| Performance warranty | 80% of nominal power for 25 years 90% of nominal power for 10 years |
| Certifications | IEC 61646 / IEC 61730 |

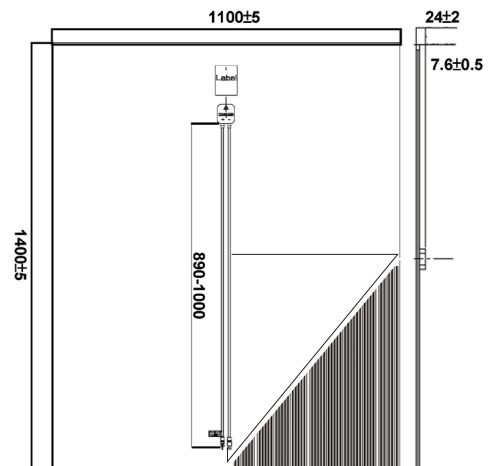
| Packaging Details | |
|-------------------|--|
| Packaging unit | 28 modules per pallet |
| Dimensions | L 1436 x W 1117 x H 1295 mm |
| Storage | 896 modules (32 pallets) in 40' HQ container |

Above electrical data represents stabilized module performance, unless specified otherwise. Tolerance for power and other parameters are subject to ± 5% and ± 10% respectively. Initial Pmpp is approximately 12-16% higher than stabilized Pmpp. STC: 1000 W/m², AM 1.5, cell temperature 25°C. NOCT: 43.4 ± 0.2°C, 800 W/m², AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

All data are subject to change without prior notice. Please consult with your sales representative for the exact product specifications of the actual shipment.

Copyright © 2011 Du Pont Apollo Limited. All Rights Reserved. The DuPont Oval logo and "The miracles of science" are trademarks of E.I. du Pont de Nemours and Company or its affiliates. DuPont Apollo is a wholly-owned subsidiary of DuPont specializing in silicon-based thin film photovoltaic modules.

Module Outline



Add-on back-mount accessory is available for different mechanical loads upon request. Back-mount accessory is excluded from TÜV certificate.



Electrical Characteristics for DA130 at 25°C

