

> R60 friline 315 Watt Frameless

158mm 60Cells PV Module

BLACK

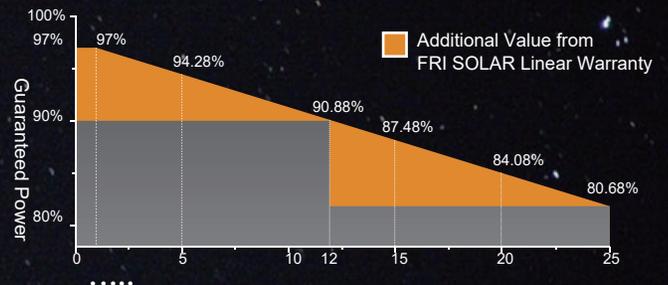
*BLACK FRAME/BLACK BACK-SHEET PRODUCTS ARE AVAILABLE UPON REQUEST



12 Years
Material & Craft
Quality assurance

12 Years
90% Output
Power guarantee

25 Years
80% Output
Power guarantee



- > Extreme load resistance
- > Bifacial cell technology up to +20% more power
- > Glass/glass laminate for BIPV use cases

> PRODUCT FEATURE

- High transmissivity, low-iron tempered glass.
- BIFACIAL: Using high efficiency bifacial solar cells
- Excellent performance in low-light environments
- High quality junction box and connector systems
- 100% inspection, to guarantee the reliability of solar systems
- Anti LID
- Anti PID
- Lower temperature coefficient

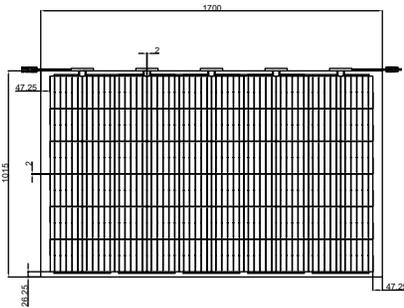
> MANAGEMENT SYSTEM

- ISO 9001**: Quality management system
- ISO 14001**: Standard for environmental management system
- OHSAS 18001**: International standard for occupational health and safety assessment system

> PRODUCT CERTIFICATES



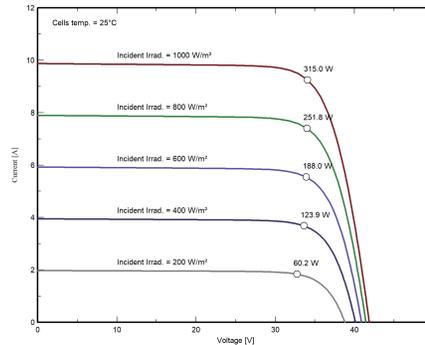
Dimension Drawing



All Dimensions in mm
The above drawing is a graphical representation of the product.
For engineering quality drawings please contact FRI SOLAR.

I-V Graph

Current-Voltage & Power-Voltage Curves (R60 friline)



Electrical Characteristics (STC)

| | |
|---------------------------------|---------------------|
| Module Type | R60 friline |
| | STC |
| Maximum Power- Pmax(W) | 315 |
| Open Circuit Voltage - Voc(V) | 40.8±3% |
| Short- Circuit Current - Isc(A) | 9.87±3% |
| Voltage at Pmax -Vmp(V) | 33.9 |
| Current at Pmax - Imp(A) | 9.29 |
| Module Efficiency -ηm(%) | 17.39 |
| Power Tolerance(W) | (0, +4.99W) |
| Maximum System Voltage(V) | 1500 Vdc (IEC / UL) |
| Maximum Series Fuse Rating (A) | 20A |

STC : Irradiance 1000W/m², Cell Temperature 25°C, Air Mass 1.5

Mechanical Specifications

| | |
|---------------------|---|
| External Dimensions | 1700*1015*11mm |
| Weight | 48.6kg |
| Solar Cells | Mono crystalline 158.75x158.75mm (60pcs) |
| Front Glass | 4mm Ultra white float glass according EN1863 |
| Back Glass | 6mm Plain white float glass according EN1863 |
| Junction Box | IP68 |
| Output Cables | 4.0mm ² , 500mm (+), 500mm (-), length can be customized |
| Connector | MC4 Compatible |

Temperature Characteristics

| | |
|--|-------------|
| Pmax Temperature Coefficient | -0.370%/C |
| Voc Temperature Coefficient | -0.28%/C |
| Isc Temperature Coefficient | +0.048%/C |
| Operating Temperature | -40 ~ +85 C |
| Nominal Operating Cell Temperature(NOCT) | 45±2 C |