

# All-black CS5A

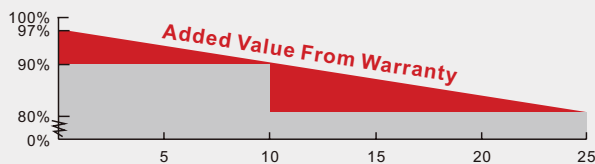
175/180/185/190/195M



All-black CS5A is a robust all purpose solar module with 72 solar cells. These modules can be used for on-grid and off-grid solar applications. The all-black modules use high efficiency mono-crystalline silicon cells, laminated with black back sheet and framed with black anodized aluminum. The all-black modules are the perfect choice of customers who not only are keen on using solar energy, but also look for aesthetic value.

## Key Features

- High module efficiency up to 15.26%
- Positive power tolerance: 0 ~ +5W
- Robust frame to up to 5400 Pa load
- Anti-reflective with self-cleaning surface
- Outstanding performance at low irradiance
- High energy yield at Low NOCT
- **Backed By Our New 10/25 Linear Power Warranty Plus our added 25 year insurance coverage**



- 10 year product warranty on materials and workmanship
- 25 year linear power output warranty

## Best Quality

- 235 quality control points in module production
- EL screening to eliminate product defects
- Current binning to improve system performance

## Best Warranty Insurance

- 25 years worldwide coverage
- 100% warranty term coverage
- Providing third party bankruptcy rights
- Non-cancellable
- Immediate coverage
- Insured by 3 world top insurance companies

## Comprehensive Certificates

- IEC 61215, IEC61730, IEC61701D2, UL1703, JET, MCS, CEC Listed and CE
- ISO9001:2008: Standards for quality management systems
- ISO/TS16949:2009: The automotive quality management system
- ISO14001:2004: Standards for Environmental management systems
- QC080000 HSPM: The Certification for Hazardous Substances Regulations Reach Compliance



# CS5A-175/180/185/190/195M All-black

## Electrical Data

STC	CS5A-175M	CS5A-180M	CS5A-185M	CS5A-190M	CS5A-195M
Nominal Maximum Power (Pmax)	175W	180W	185W	190W	195W
Optimum Operating Voltage (Vmp)	35.8V	36.1V	36.4V	36.6V	37.0V
Optimum Operating Current (Imp)	4.89A	4.99A	5.09A	5.19A	5.27A
Open Circuit Voltage (Voc)	44.4V	44.6V	44.6V	44.8V	45.0V
Short Circuit Current (Isc)	5.23A	5.34A	5.46A	5.52A	5.62A
Module Efficiency	13.70%	14.09%	14.48%	14.87%	15.26%
Operating Temperature	-40°C~+85°C				
Maximum System Voltage	1000V (IEC)/600V (UL)				
Maximum Series Fuse Rating	10A				
Application Classification	Class A				
Power Tolerance	0 ~ +5W				

Under Standard Test Conditions (STC) of irradiance of 1000W/m<sup>2</sup>, spectrum AM 1.5 and cell temperature of 25°C

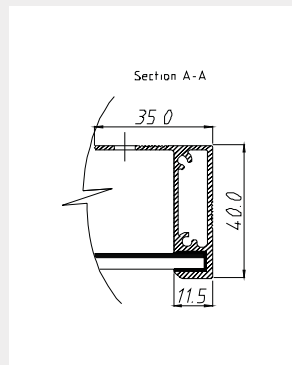
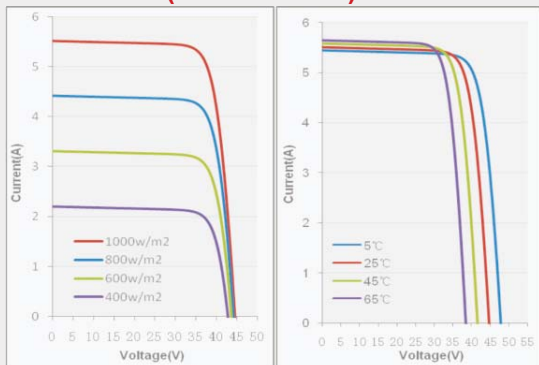
NOCT	CS5A-175M	CS5A-180M	CS5A-185M	CS5A-190M	CS5A-195M
Nominal Maximum Power (Pmax)	126W	130W	134W	137W	141W
Optimum Operating Voltage (Vmp)	32.7V	32.9V	33.2V	33.4V	33.7V
Optimum Operating Current (Imp)	3.87A	3.95A	4.02A	4.11A	4.17A
Open Circuit Voltage (Voc)	40.7V	40.9V	40.9V	41.1V	41.3V
Short Circuit Current (Isc)	4.23A	4.32A	4.42A	4.47A	4.55A

Under Normal Operating Cell Temperature, Irradiance of 800 W/m<sup>2</sup>, spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s

## Mechanical Data

Cell Type	Mono-crystalline 125 x 125mm, 2 Busbars
Cell Arrangement	72 (6 x 12)
Dimensions	1595 x 801 x 40mm (62.8 x 31.5 x 1.57in)
Weight	15.3kg (33.7 lbs)
Front Cover	3.2mm Tempered glass
Frame Material	Anodized aluminium alloy
J-BOX	IP65, 3 diodes
Cable	4mm <sup>2</sup> (IEC)/12AWG(UL), 950mm
Connectors	MC4 or MC4 Comparable
Standard Packaging (Modules per Pallet)	24pcs
Module Pieces per container (40 ft. Container)	672pcs

## I-V Curves (CS5A-190M)



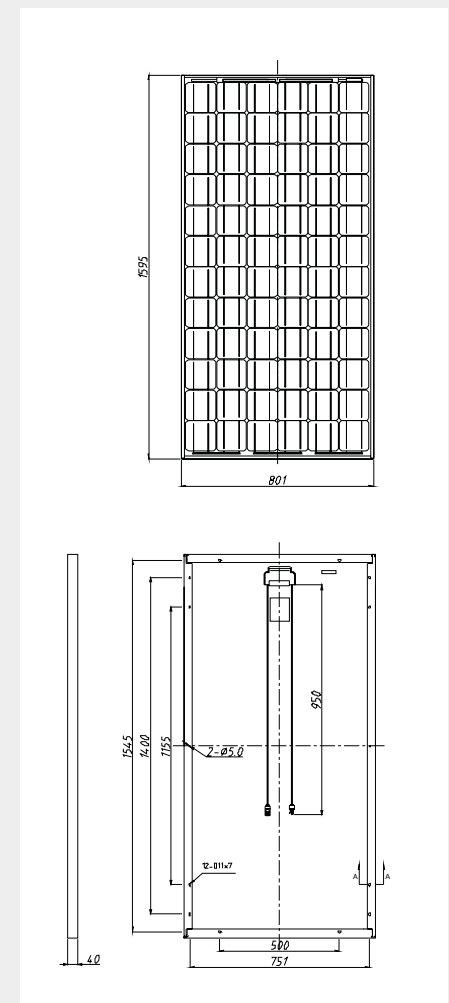
## Temperature Characteristics

Temperature Coefficient	Pmax	-0.45%/°C
	Voc	-0.35 %/°C
	Isc	0.060 %/°C
Normal Operating Cell Temperature	45±2°C	

## Performance at Low Irradiance

Industry leading performance at low irradiation environment, +95.5% module efficiency from an irradiance of 1000w/m<sup>2</sup> to 200w/m<sup>2</sup> (AM 1.5, 25 °C)

## Engineering Drawings



\*Specifications included in this datasheet are subject to change without prior notice.

## About Canadian Solar

Canadian Solar Inc. is one of the world's largest solar companies. As a leading vertically-integrated manufacturer of ingots, wafers, cells, solar modules and solar systems, Canadian Solar delivers solar power products of uncompromising quality to worldwide customers. Canadian Solar's world class team of professionals works closely with our customers to provide them with solutions for all their solar needs.

Canadian Solar was founded in Canada in 2001 and was successfully listed on NASDAQ Exchange (symbol: CSIQ) in November 2006. Canadian Solar has module manufacturing capacity of 2.05GW and cell manufacturing capacity of 1.3GW.

Headquarters | 545 Speedvale Avenue West  
Guelph | Ontario N1K 1E6 | Canada  
Tel: +1 519 837 1881  
Fax: +1 519 837 2550  
inquire.ca@canadiansolar.com  
www.canadiansolar.com