

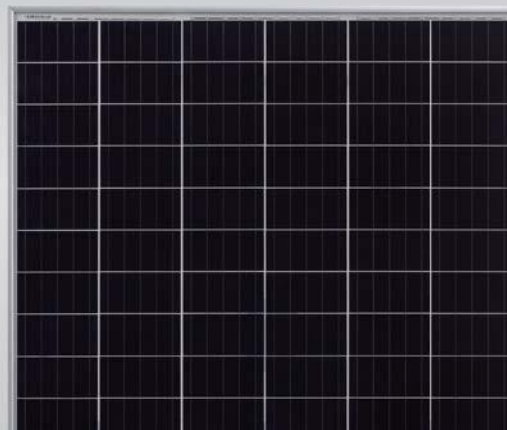
Appendix 2-1:
Solar Panel Data Sheets

Eagle 72HM G2

380-400 Watt

MONO PERC HALF CELL MODULE

Positive power tolerance of 0~+3%



KEY FEATURES



Diamond Cell Technology

Uniquely designed high performance 5 busbar mono PERC half cell



High Voltage

UL and IEC 1500V certified; lowers BOS costs and yields better LCOE



Higher Module Power

Decrease in current loss yields higher module efficiency



Shade Tolerance

More shade tolerance due to twin arrays



PID FREE

Reinforced cell prevents potential induced degradation



Strength and Durability

Certified for high snow (5400 Pa) and wind (2400 Pa) loads

- ISO9001:2008 Quality Standards
- ISO14001:2004 Environmental Standards
- OHSAS18001 Occupational Health & Safety Standards
- IEC61215, IEC61730 certified products
- UL1703 certified products

Nomenclature:

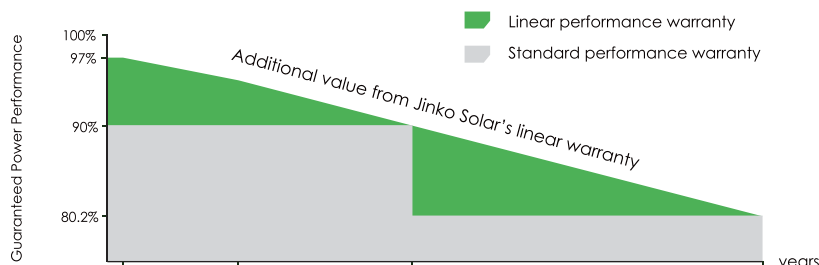
JKM400M-72HL-V

Code	Cell	Code	Cell	Code	Certification
null	Full	null	Normal	null	1000V
H	Half	L	Diamond	V	1500V

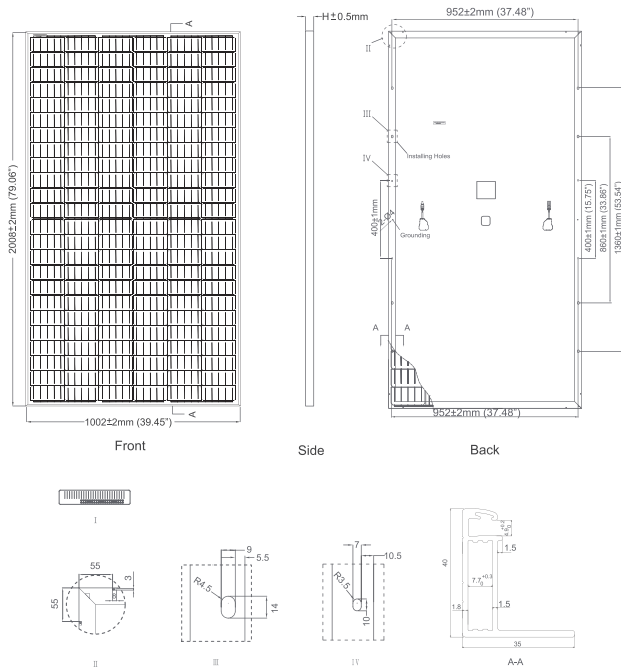


LINEAR PERFORMANCE WARRANTY

10 Year Product Warranty • 25 Year Linear Power Warranty



Engineering Drawings

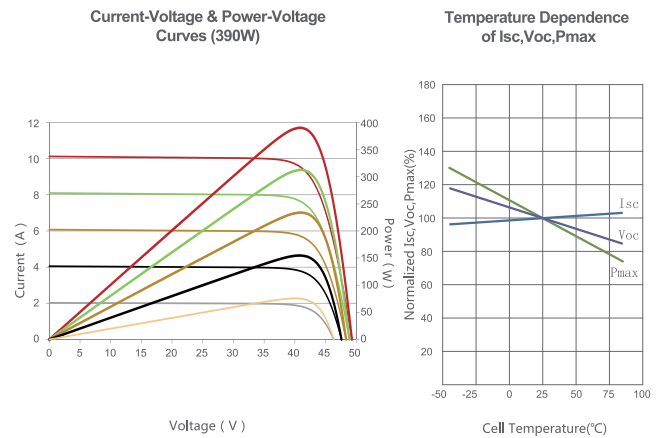


Packaging Configuration

(Two pallets = One stack)

26pcs/pallet, 52pcs/stack, 572pcs/40'HQ Container

Electrical Performance & Temperature Dependence



Mechanical Characteristics

Cell Type Mono PERC Diamond Cell (158.75 x 158.75 mm)

No. of Half-cells 144 (6×24)

Dimensions 2008×1002×40mm (79.06×39.45×1.57 inch)

Weight 22.5 kg (49.6 lbs)

Front Glass 3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass

Frame Anodized Aluminium Alloy

Junction Box IP67 Rated

Output Cables 12AWG, Anode 1400mm(55.12 in), Cathode 1400mm(55.12 in) or Customized Length

Fire Type Type 1

SPECIFICATIONS

Module Type	JKM380M-72HL-V		JKM385M-72HL-V		JKM390M-72HL-V		JKM395M-72HL-V		JKM400M-72HL-V	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	380Wp	286Wp	385Wp	290Wp	390Wp	294Wp	395Wp	298Wp	400Wp	302Wp
Maximum Power Voltage (Vmp)	40.5V	38.6V	40.8V	38.8V	41.1V	39.1V	41.4V	39.3V	41.7V	39.6V
Maximum Power Current (Imp)	9.39A	7.42A	9.44A	7.48A	9.49A	7.54A	9.55A	7.60A	9.60A	7.66A
Open-circuit Voltage (Voc)	48.9V	47.5V	49.1V	47.7V	49.3V	48.0V	49.5V	48.2V	49.8V	48.5V
Short-circuit Current (Isc)	9.75A	7.88A	9.92A	7.95A	10.12A	8.02A	10.23A	8.09A	10.36A	8.16A
Module Efficiency STC (%)	18.89%		19.14%		19.38%		19.63%		19.88%	
Operating Temperature (°C)	-40°C~+85°C									
Maximum System Voltage	1500VDC(UL)/1500VDC(IEC)									
Maximum Series Fuse Rating	20A									
Power Tolerance	0~+3%									
Temperature Coefficients of Pmax	-0.36%/°C									
Temperature Coefficients of Voc	-0.28%/°C									
Temperature Coefficients of Isc	0.048%/°C									
Nominal Operating Cell Temperature (NOCT)	45±2°C									

STC: Irradiance 1000W/m² Cell Temperature 25°C AM=1.5

NOCT: Irradiance 800W/m² Ambient Temperature 20°C AM=1.5 Wind Speed 1m/s

* Power measurement tolerance: ± 3%

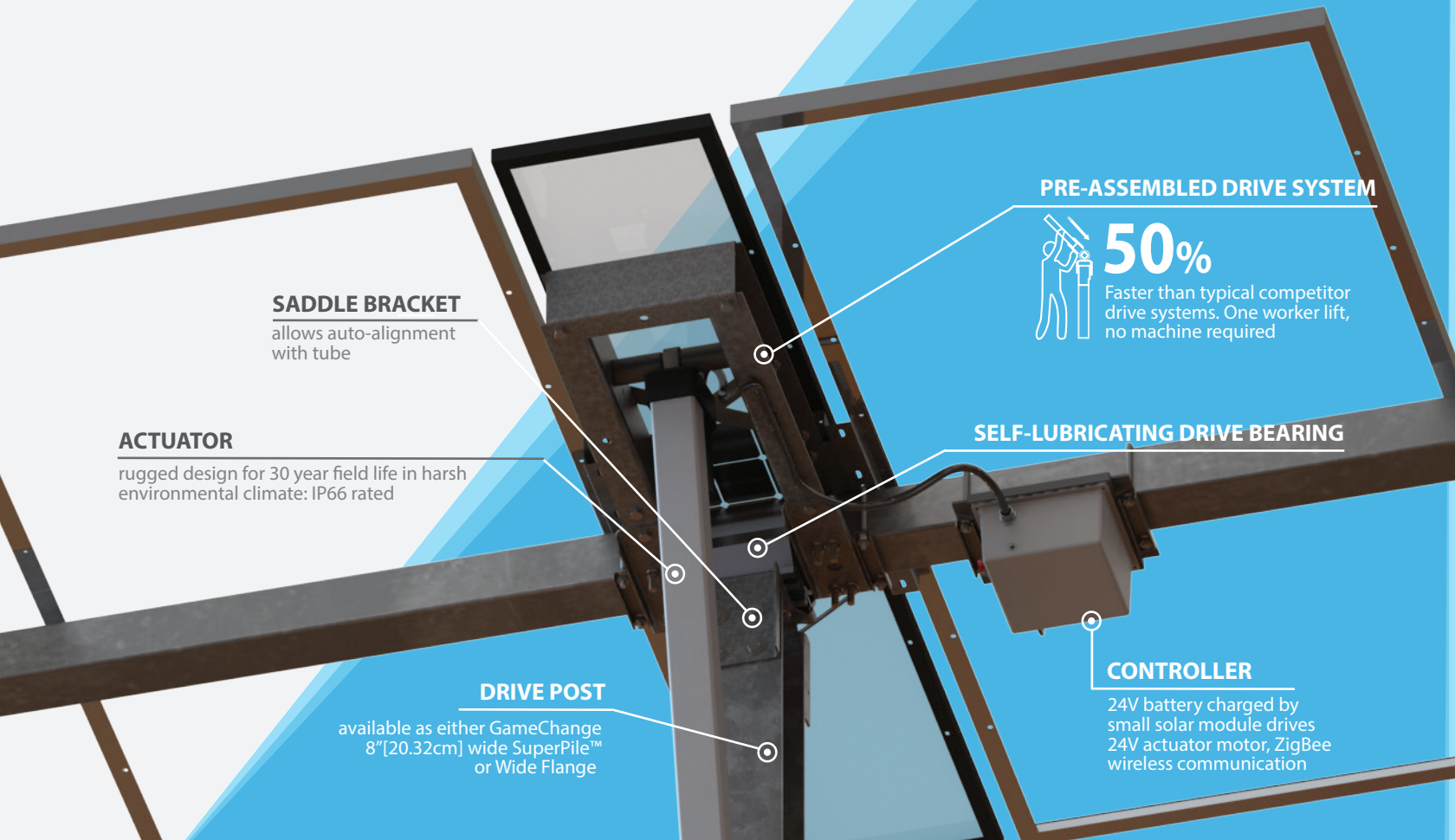
OVER 3.2 GW SOLD
Every System For Your Every Need

GAMECHANGE SOLAR
REPOWERING THE PLANET

GENIUS TRACKER™

WORLD'S HIGHEST POWER PRODUCING
AND FASTEST INSTALLING SOLAR TRACKER

TECHNICAL DATASHEET



OWNERS BENEFITS

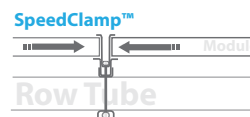
UP TO **6.75%** **MORE POWER PRODUCTION**

RESULTS IN HIGHER KWH OUTPUT & UP TO 40% HIGHER ROE
Varies based on project specifics

INSTALLERS BENEFITS

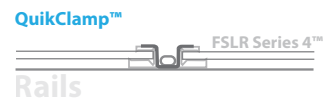
FASTEST INSTALLING SYSTEM

ADVANCED DESIGN INNOVATIONS AND PRE-ASSEMBLED COMPONENTS



No Mounting Hardware
Speeds Module Installation Up To:

40%



FSLR Series 4 Module
Installation Speeds Up To:

30%

OVER 3.2 GW SOLD

Every System For Your Every Need



GENIUS TRACKER™ OWNERS BENEFITS

UP TO 40% HIGHER ROE

Combine to increase owner cash flow of sample project to \$17MM cash flow vs \$13MM & \$15MM for competitors

Higher Module Density - increased row spacing means more time facing the sun and less time running from the shade, adds up to 5% more power production than competitors

WeatherSmart™ - AI technology optimizes tilt angle based on weather data to maximize power production, adds up to 1.25% additional power production

PowerBoost™ - Smart optimization allows table rows to respond individually based on topography to prevent shading, adds up to 0.5% additional power production. Available in Q4 2018

LOWEST O & M COST

Lowest grass cutting & module washing cost

Zero maintenance drive system

INSTALLERS BENEFITS

FASTEST INSTALLING SYSTEM

Advanced design innovations & pre-assembled components

Pre-assembled Drive Arm - can be lifted by one worker, no machine required. 50% faster than typical competitors

SpeedClamp™ - Mounts modules with no mounting hardware, speeds module installation up to 40%

QuikClamp™ - Speeds install for FSLR Series 4 modules up to 30%

GameChange Solar

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Email: info@gamechangesolar.com

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Modules	Supporting Type	Most commercially available, including frameless crystalline and thin film	
Civil	Slope Tolerance (N-S)	7% standard, can go to 15% special order	
	Slope Tolerance (E-W)	15%	Tracker follows slope (V/N) Yes
Structural	Drive Type	Robust linear actuator stainless steel & aluminum	
	Piles per MW	450/MW typical	
	Operating Wind Load	105mph(Std) / 130mph(Premium 1) / 150mph(Premium 2) / 175mph(Premium 3)	
	Snow Load	5psf(Std) / 20psf(Premium 1) / 40psf(Premium 2) / 60 psf(Premium 3)	
	Tracking Range (Std)	45°, 52°	Tracking Range (Premium) 60°
	Pile Sections	G235 galvanized steel (or HDG option) roll formed standard posts, HDG wide flange option also available	
	Pile Size (Interior) & (Exterior)	6" X 6" roll form shape or W6x7 or W6x9 or W6x15 wide flange	
	Motor Foundation	6.5" x 8" roll form hat or W6x15 or larger wide flange	
	Standard Embedment	5 - 7 ft	Flood Plain Allowance Up to 6 feet
Design	Module Configuration	1 up in portrait for crystalline, FSLR Series 6, 2 up landscape for Bifacial, 3 to 4 up landscape FSLR Series 4	
	Modules per Table	Up to 340 ft. (for example 102 72 cell crystalline)	
	Module Attachment	SpeedClamp™ or Bolts available for bottom mount frame modules or clamps for glass on glass modules	
	Ground Coverage Ratio	0.25 to 0.65	
	Rows per Drive	1 drive per tracker(table), distributed drive system	
	Powering System	Onboard solar module with battery or wireline power	
	Compliance	UL 2703 / 3703	
	Ground Clearance To Module	2 ft	
	Min / Max Ground to Top of Pier	51" typical / ground clearance + 51" + 9" adjustment range	
	Backtracking	Yes, although can be turned off as requested (i.e. for FSLR modules)	
	Temperature Range	-20° C + 48° C	
	FCC 3rd party design verified	Compliant with FCC guidelines	
Self Perform	Specialty Tools Required	No	
	Mechanical Installation	Available	
	Max offload for deliveries	As per customer requirement	
Electrical	Tracking Method	Time and location based algorithm	
	String Design	Compatible with any string size	
	Cable Supports	Free hole punching as per customer requirement	
	Linear Actuator Motor	24 volt DC	
	Controller Box	Zigbee® wireless communications, 24v solar panel and battery or wireline power	
	Control System	Master to Node: Zigbee® wireless communications Master to SCADA/DAS: MODBUS communications	
	# of Motors	28 to 52 / MW depending on panel wattage and loading conditions (35 for typical conditions)	
	1000V System or 1500V System	Both	
	Grounding Method	Tracker structure is part of grounding path per UL 2703	
	UL Listed Assembly	UL 2703 / UL3703	
	NEMA Ratings	IP66 stroke tube end / 67 waterproof motor end (NEMA 3x/4 equivalent)	
	# Weather Station	1 per 6 MW typical	
	Monitoring System	Web portal interface available Compatible with all standard third party monitoring vendors	
	Snow & Flood Sensors	Move panels to optimum location for weather events	
	Backup Power	Solar module and battery providing integrated backup - 3 days	
O & M	Warranty	5 year drive & control, 10 year structural standard, 10 / 20 also available	
Shipping	Max load	45,000 lbs. per truckload 5,000 lbs. maximum bundle size 2,900 lbs. or other maximum as requested by customers	
	Shipping Containers or flatbeds	Flat beds for structure, dry vans for hardware	
	# Trucks per MWdc	2.76 typical	
Commissioning	Backfeed required?	No, Generator for power to master as alternative	

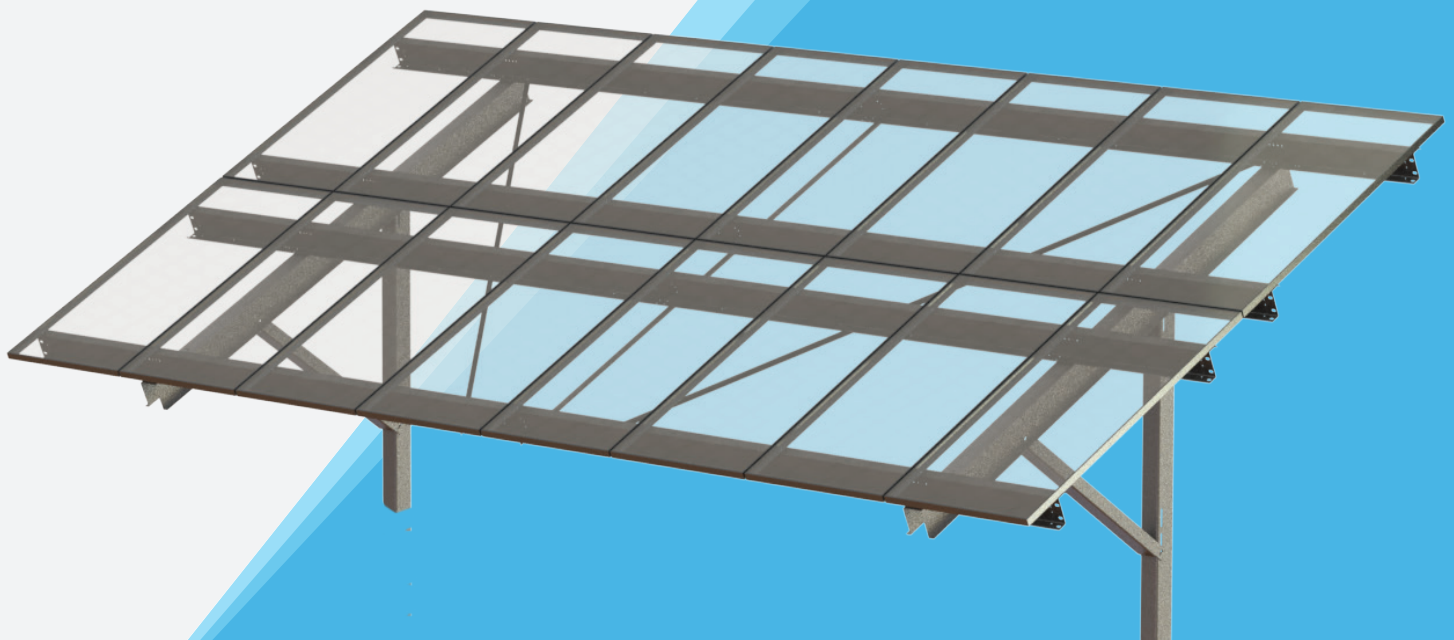
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Every System For Your Every Need



MAXSPAN™ **PILE DRIVEN SYSTEMS**

**BEST QUALITY AND PRICED PILE DRIVEN
FIXED TILT SYSTEMS**

**TECHNICAL
DATASHEET**



FAST INSTALL & HANDLES SLOPING GROUND

Supports all poly, glass and thin film modules

Rugged design enables 175 mph [78m/s] wind
and 90 psf [4kPa] snow loads

Turnkey install, pull test and geotech services available

Galvanized Z purlins have
integrated trays for easy
wire management

5° to 35° tilt with multiple
inter-row spacing options

LESS PILES
UNMATCHED SPAN
UP TO 15%
TERRAIN SLOPES

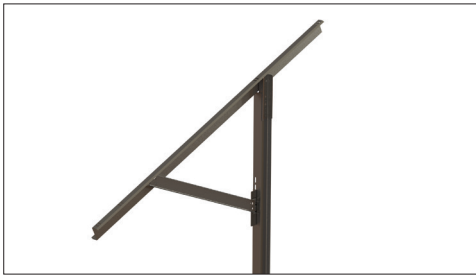


OVER 3.2 GW SOLD

Every System For Your Every Need



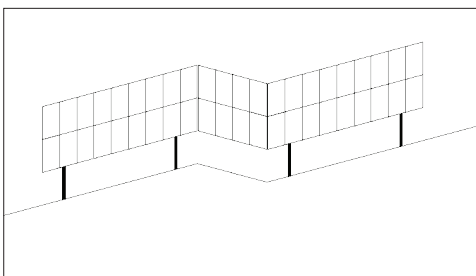
MaxSpan™ FastBuild's rugged beam and brace rapidly attach to pile with just six bolts and nuts - fewest parts in the industry



MaxSpan™ WideFlange's telescoping post bracket with up to 5 inches vertical adjustment for fast top of pile leveling



Patent pending articulating purlin connection to navigate sloping terrain



Articulating purlin connections to navigate up to 15% terrain slopes

Features

Three axes of adjustability demanded by installers for navigating real world site conditions where significant adjustability in the field is required

The unmatched span capability of MaxSpan™ means there are fewer foundations than competing systems, which means less piles and less pile installation cost. As few as 190 piles per MW

Up to 4 ft. [122cm] high ground clearance to allow for snow and vegetation

5° to 35° tilt with multiple inter-row spacing options

Full layout and engineering analysis for every project

Integrated grounding and wire management

MaxSpan™ FastBuild

StickyPile™: G235 galvanized steel (HDG available), purlins, beams & braces: G90 galvanized steel

20 men install 1.55MW per week

Standard system has 6" + 3.5" [15 + 9cm] vertical adjustability

MaxSpan™ Wide Flange

Industry's most flexible racking system handles undulating ground conditions

Telescoping post bracket with over 5" [13cm] vertical adjustment for fast top of pile leveling

Multiple options available with Wide Flange

Test & Certification

- Meet IBC and ASCE standards for structural loading
- ETL / UL 467 GameChange top mount clamps or star washers included
- ETL / UL 2703 tested
- Wind tunnel tested by industry leader CPP
- Independent assessment by Black & Veatch
- Warranty 20 years - Made in USA

Calculations

- 100% code compliant designs for any locality
- Structural PE drawings & calculations for foundation & racking structure
- Available 2 up in portrait and 4 up in landscape poly as well as multiple glass on glass module configurations incl. First Solar Series 4 & 6™
- Design loads according to IBC 6 ASCE

Pull Test, Geotech & Installation Services

- Free pull test on orders over 5 MW
- Vertical and lateral capacity of the post is determined by pull test
- Test data is then analyzed by our in-house engineering team in parallel with geotechnical report to give the most efficient embedment depths, spans and post type
- Turnkey installation of piles, racks and modules available

Material

- Post: G235 galvanized steel (HDG ASTM A123 option also available)
- Galvanized Purlins, NS Beam, Brace: G90 galvanized steel
- Star washer or ETL / UL top mount teathed module clamp: stainless steel

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