ANN ARBOR HISTORIC DISTRICT COMMISSION

Staff Report

ADDRESS: 500 S Seventh St, Application Number HDC21-255

DISTRICT: Old West Side Historic District

REPORT DATE: October 14, 2021

REPORT PREPARED BY: Jill Thacher, Historic Preservation Coordinator

REVIEW COMMITTEE DATE: Tuesday, October 12, 2021

	OWNER	**APPLICANT**
Name:	Lara Kramer-Smith	David Friedrichs/Homeland Solar, LLC
Address:	500 S Seventh St Ann Arbor, MI 48103	4975 Miller Road Ann Arbor, MI 48103
Phone:	(317) 696-8099	(734) 790-8997

BACKGROUND: This two-story craftsman features tan/yellow scored brick on the ground floor, a full width front porch, and prominent chimney on the south side. It has a pedimented front porch roof, side-facing gables, and a wide, shallow shed dormers facing the street and rear. The house was first occupied by Walter and Emma Kurtz in 1923. Walter co-owned Weinberg & Kurtz contractors' supply yard, which was located behind the house at the end of Jefferson Court.

In 2018 the HDC approved an application to relocate a rear door opening (HDC18-149).

LOCATION: The property is located on the west side of South Seventh Street, across the street from the western terminus of West Jefferson.

APPLICATION: The applicant seeks HDC approval to install a solar array of black-on-black panels on the east-facing and west-facing roof surfaces of the house.

APPLICABLE REGULATIONS:

From the Secretary of the Interior's Standards for Rehabilitation:

(2) The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

(9) New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

(10) New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

From the Secretary of the Interior's Guidelines for Rehabilitating Historic Buildings:

Roofs

Recommended: Identifying, retaining, and preserving roofs--and their functional and decorative features—that are important in defining the overall historic character of the building.

Not Recommended: Changing the configuration of a roof by adding new features such as dormer windows, vents, or skylights so that the historic character is diminished.

Energy Efficiency

Recommended: Placing a new addition that may be necessary to increase energy efficiency on non-character-defining elevations.

Not Recommended: Designing a new addition which obscures, damages, or destroys character-defining features.

Mechanical Equipment

Recommended: Providing adequate structural support for new mechanical equipment.

Not Recommended: Failing to consider the weight and design of new mechanical equipment so that, as a result, historic structural members or finished surfaces are weakened or cracked.

Installing a new mechanical system so that character-defining structural or interior features are radically changed, damaged, or destroyed.

From the Ann Arbor Historic District Design Guidelines (other Guidelines may apply):

Solar

Appropriate: Mounting solar panels at grade or on ground pole mountings. In the absence of an appropriate ground-based mounting location, panels should be mounted on side or rear facing roof surfaces.

Installing mechanical and service equipment on the roof related to the solar units and their related devices so that they are inconspicuous from the public right-of-way and do not damage or obscure character-defining features.

For sloped roof installations, mounting solar panels parallel to and within 8" of roof surface.

Not Appropriate: Mounting solar panels and their related devices on primary elevations or roofs that face the primary elevation or in planes that are highly visible from the street view. This location has the highest impact on the historic character of the historic building and all other options should be thoroughly explored.

Any other alteration or installation procedure that will cause irreversible changes to historic features or materials.

STAFF FINDINGS:

1. The application proposes to install an array of seventeen solar panels on the west face of the main roof of the house and five panels on the east elevation near the roof ridge, for a total of 22,375 watts. Black modules with black framing are appropriately proposed. The array is 18" below the roof ridge on both sides and about three feet from the edges of the roof. The roof has black/dark gray asphalt shingles. The meter is located on the north (side) elevation near the back of the house and the electrical panel and AC inverter are in the basement.

2. Solar panels on street facing roof surfaces must be approved by the HDC, not staff. The five panels on the east roof surface are very high up on a fairly steeply sloped roof and are roughly aligned with the chimney, at the top of the slightly popped-up shed roof. After visiting the site with the contractor, staff believes the panels will not be a visual distraction from the historic house or nearby properties. They are also easily reversible.

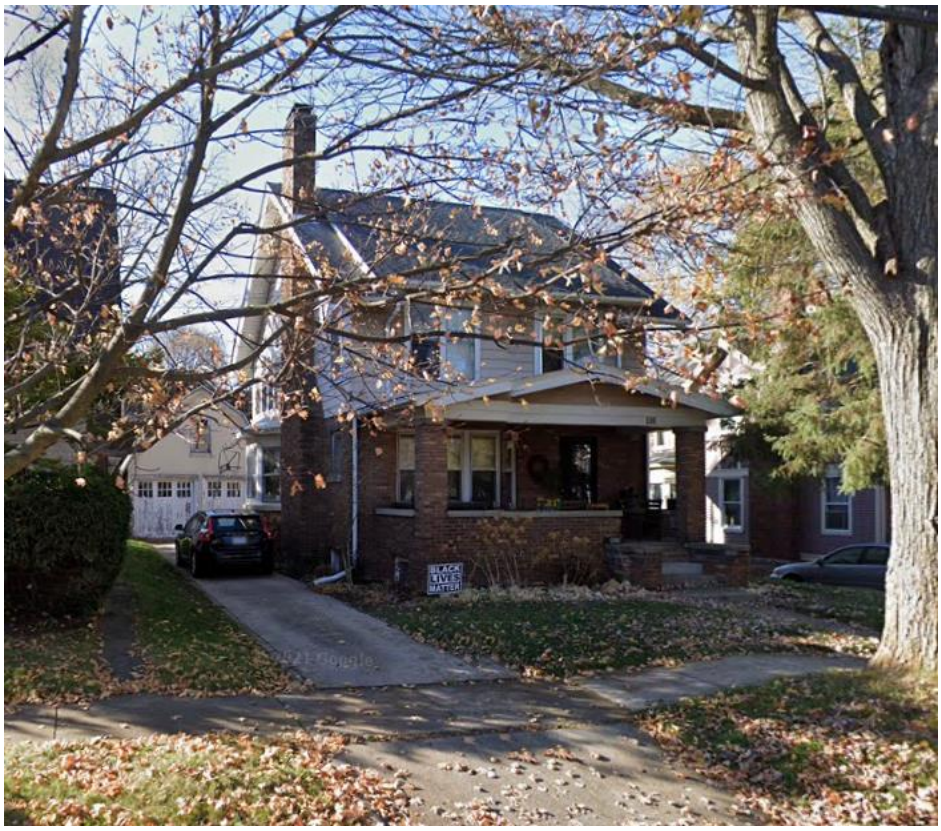
3. Staff believes that the materials and design of the solar panels are compatible with the existing structure, neighboring buildings, and the surrounding historic district, and meet both the Secretary of the Interior's Standards and the *Ann Arbor Historic District Design Guidelines*.

POSSIBLE MOTIONS: (Note that the motion is only a suggestion. The Review Committee, consisting of staff and at least two Commissioners, will meet with the applicant on site and then make a recommendation at the meeting.)

I move that the Commission issue a certificate of appropriateness for the application at 500 South Seventh Street, a contributing property in the Old West Side Historic District, to install a black-on-black solar array, as proposed. The work is compatible in exterior design, arrangement, texture, material and relationship to the rest of the building and the surrounding area and meets *The Secretary of the Interior's Standards for Rehabilitation* and *Guidelines for Rehabilitating Historic Buildings,* in particular standards 2, 9 and 10 and the guidelines for roofs, energy efficiency, and mechanical systems, as well as the *Ann Arbor Historic District Design Guidelines*, particularly as they pertain to solar installations.

ATTACHMENTS: application, drawings, photos and technical information.

500 South Seventh (November 2020, courtesy Google Streetview)



HISTORIC DISTRICT COMMISSION

PLANNING AND DEVELOPMENT SERVICES

City Hall: 301 E. Huron St. Ann Arbor, MI 48104-5120
Mailing: P.O. Box 8647, Ann Arbor, MI 48107-8647
Phone: 734.794.6265 ext. 42608 jthacher@a2gov.org
Fax: 734.994.8460

APPLICATION MUST BE FILLED OUT COMPLETELY

OFFICE USE ONLY	
Permit Number	HDC#
	BLDG#
DATE STAMP	

PROPERTY LOCATION/OWNER INFORMATION

NAME OF PROPERTY OWNER			HISTORIC DISTRICT
Lara Kramer-Smith			
PROPERTY ADDRESS			CITY
500 S. Seventh St.			ANN ARBOR
ZIPCODE	DAYTIME PHONE NUMBER	EMAIL ADDRESS	
48103	(317) 696-8099	LARAKRAMERSMITH@GMAIL.COM	
PROPERTY OWNER'S ADDRESS (IF DIFFERENT FROM ABOVE)		CITY	STATE, ZIP

PROPERTY OWNER'S SIGNATURE

SIGN HERE: Lara Kramer-Smith PRINT NAME: LARA KRAMER-SMITH DATE: 8/25/21

APPLICANT INFORMATION

NAME OF APPLICANT (IF DIFFERENT FROM ABOVE)			
David Friedrichs / Homeland Solar, LLC			
ADDRESS OF APPLICANT			CITY
4975 Miller Rd			Ann Arbor
STATE	ZIPCODE	PHONE / CELL #	FAX No
MI	48103	(734) 790-8997	( )
EMAIL ADDRESS			
LINDA@HOMELANDSOLAR.COM			

APPLICANT'S SIGNATURE *(if different from Property Owner)*

SIGN HERE: David Friedrichs PRINT NAME: x David Friedrichs DATE: 8/25/2021

BUILDING USE – CHECK ALL THAT APPLY

☑ SINGLE FAMILY	☐ DUPLEX	☐ RENTAL	☐ MULTIPLE FAMILY	☐ COMMERCIAL	☐ INSTITUTIONAL

PROPOSED WORK

Describe in detail each proposed exterior alteration, improvement and/or repair (use additional paper, if necessary).

Installation of roof mount solar. 22,375w, black-on-black solar panels on east and west side of roof.
See attached layout

DESCRIBE CONDITIONS THAT JUSTIFY THE PROPOSED CHANGES:

Homeland has completed several similiar solar installations in the Historic District of Ann Arbor, all satisfactory in compliance with stipulations.

For Further Assistance With Required Attachments, please visit www.a2gov.org/hdc

APPLICATION CONTINUED ON OTHER SIDE

HISTORIC DISTRICT COMMISSION APPLICATION

FEE CHART	
DESCRIPTION	
STAFF REVIEW FEES	**FEE**
Application for Staff Approval	$35.00
Work started without approvals	Additional $50.00
HISTORIC DISTRICT COMMISSION FEES	
All other proposed work not listed below	$100.00
Work started without approvals	Additional $250.00
RESIDENTIAL – Single and 2-story Structure	
Addition: single story	$300.00
Addition: taller than single story	$550.00
New Structure - Accessory	$100.00
New Structure – Principal	$850.00
Replacement of single and 2-family window(s)	$100 + $25/window
COMMERCIAL – includes multi-family (3 or more unit) structures	
Additions	$700.00
Replacement of multi-family and commercial window (s)	$100 + $50/window
Replacement of commercial storefront	$250.00
DEMOLITION and RELOCATION	
Demolition of a contributing structure	$1000.0
Demolition of a non-contributing structure	$250.00
Relocation of a contributing structure	$750.00
Relocation of a non-contributing structure	$250.00

FOR COMMISSION REVIEWS:

- Application withdrawals made before public notice is published will qualify for a 50% refund of the application fee.
- Application withdrawals made after public notice is sent but before the public hearing will qualify for a 25% refund of the application fee.

INSTRUCTIONS FOR SUBMITTING APPLICATIONS

All HDC applications must be signed by the property owner and the applicant, if different, with the exception of staff approvals, which may be signed by only the applicant.

All completed HDC applications and their attachments may be submitted to Planning and Development Services by mail, in person (paper or digital), faxed, or via email to building@a2gov.org.

We accept CASH, CHECK, and all major credit cards. Checks should be made payable to "City of Ann Arbor"

HDC applications that are incomplete or not submitted with the required documentation or payment will not be processed or approved.

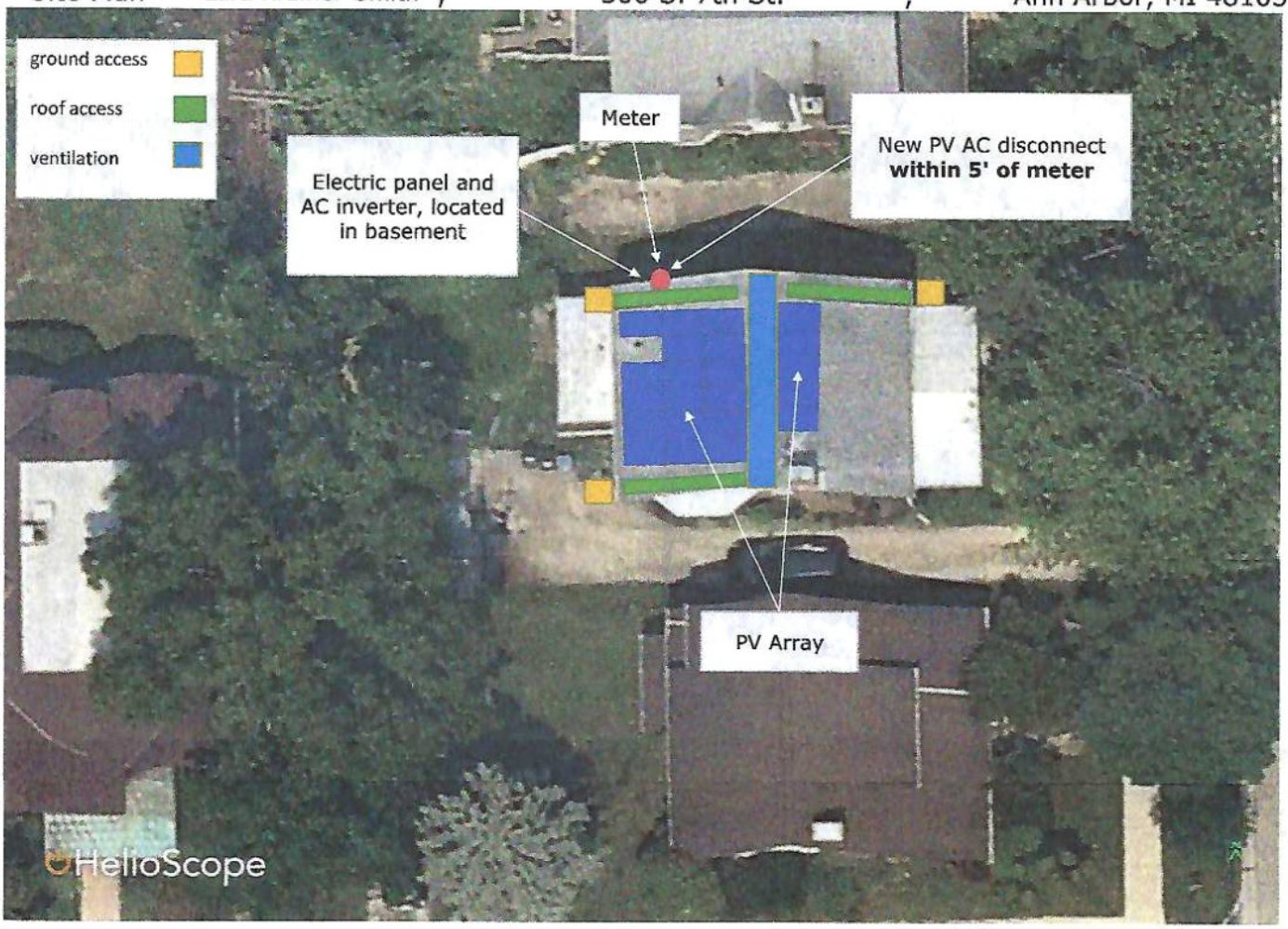
APPLICATION EXPIRATION

HDC applications expire three (3) years after the date of approval.

OFFICE USE ONLY

Date of Hearing:		
Action	☐ HDC COA	☐ HDC Denial
	☐ HDC NTP	☐ Staff COA
Staff Signature		
Comments		
Fee:	$_____	
Payment Type	☐ Check: #_____ ☐ Cash ☐ Credit Card	

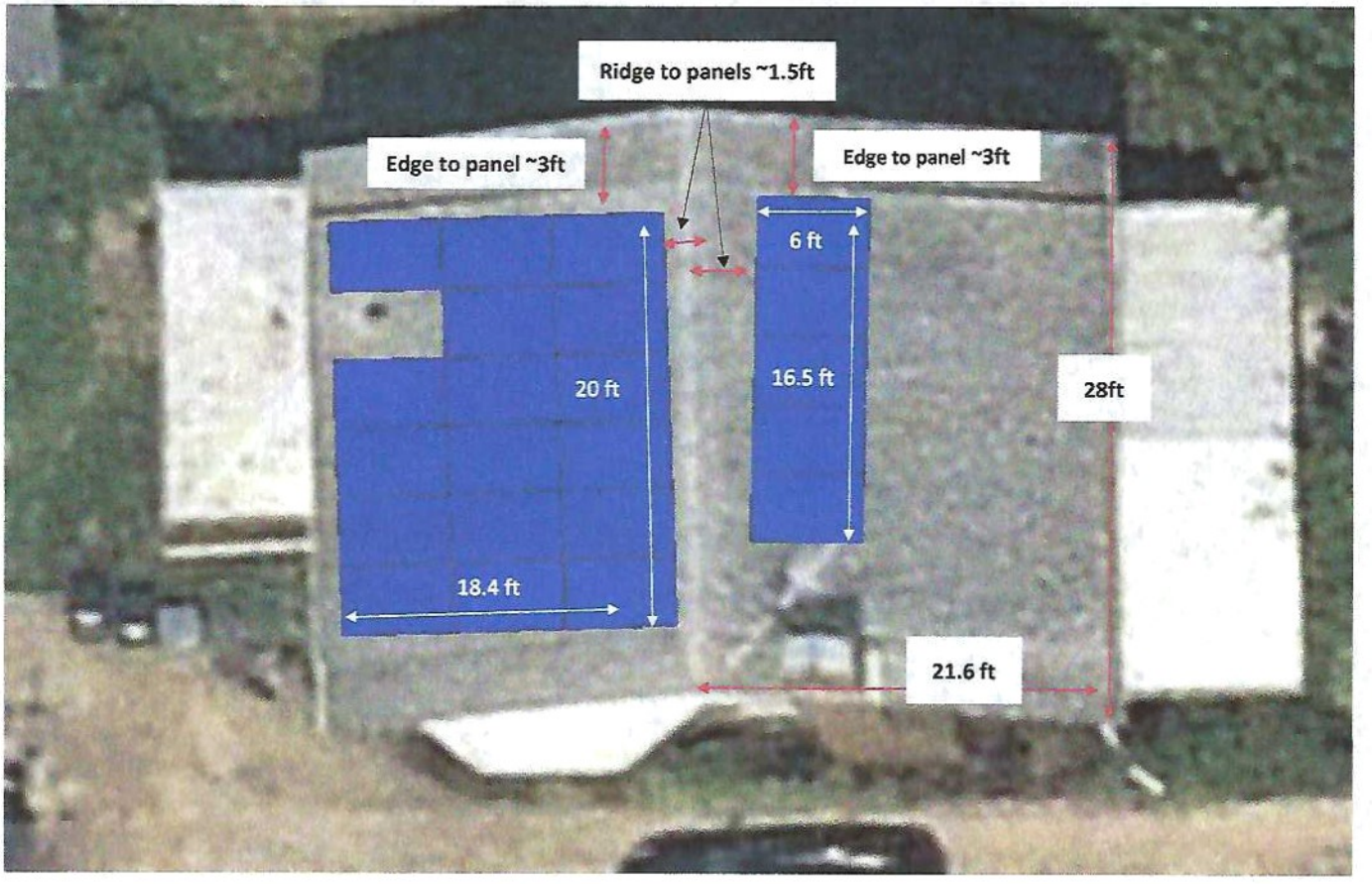
Site Plan Lara Kramer-Smith , 500 S. 7th St. , Ann Arbor, MI 48103



Mark Dorogi
(734)846-8911

HOMELAND SOLAR

8/25/2021


Ridge to panels ~1.5ft
Edge to panel ~3ft
Edge to panel ~3ft
6 ft
20 ft
16.5 ft
28ft
18.4 ft
21.6 ft

EAGLE
MODULES

THE MOST DEPENDABLE SOLAR BRAND

EAGLE 66TR G4

370-390 WATT TILING RIBBON MODULE

Positive power tolerance of 0~+3%

- NYSE-listed since 2010, Bloomberg Tier 1 manufacturer
- Best-selling panel globally for last 4 years
- Top performance in the strictest 3rd party labs
- Premium solar panel factories in USA and Malaysia

KEY FEATURES

TR Technology
Tiling Ribbon eliminates cell gaps to increase module efficiency and power.

9BB Half Cell Technology
Uniquely designed 9 busbar half cut solar cells deliver ultra-high power in a small footprint.

Shade Tolerant
Twin array design allows continued performance even with shading by trees or debris.

Thick and Tough
Engineered with 35mm frame, 3.2mm front side glass, and Type 1 backsheet for added durability.

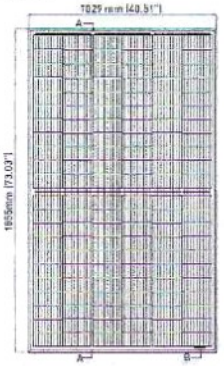
Leading Warranty
12-year product and 25-year linear power warranty; 98% guaranteed first year, max 0.55% annual loss.

BUILDING YOUR TRUST IN SOLAR. JINKOSOLAR.US

Solar JinKO

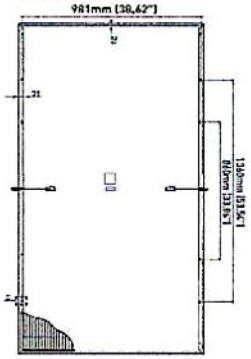
ENGINEERING DRAWINGS

Front



Side

Back



Length: +/- 2mm
Width: +/- 2mm
Height: +/- 1mm
Row Pitch: +/- 2mm

MECHANICAL CHARACTERISTICS

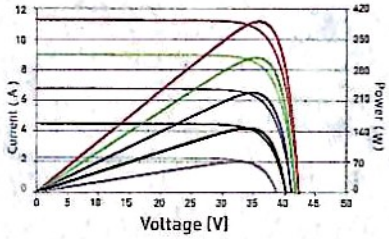
No. of Cells	132 (2x66)
Dimensions	1855x1029x35mm (73.03×40.51×1.37 in)
Weight	21.5 kg (47.40 lbs)
Front Glass	3.2mm, Anti-Reflection Coating High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP67 Rated
Output Cables	12 AWG, 2053mm (80.83in) or Customized Length
Connector	MC4
Fire Type	Type 1
Pressure Rating	5400Pa (Snow) & 2400Pa (Wind)

TEMPERATURE CHARACTERISTICS

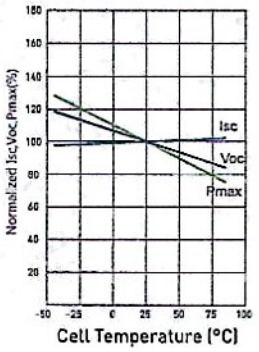
Temperature Coefficients of Pmax	-0.35%/°C
Temperature Coefficients of Voc	-0.28%/°C
Temperature Coefficients of Isc	0.048%/°C
Nominal Operating Cell Temperature (NOCT)	45 ± 2°C

ELECTRICAL PERFORMANCE & TEMPERATURE DEPENDENCE

Current-Voltage & Power-Voltage Curves (390W)



Temperature Dependence of Isc, Voc, Pmax



MAXIMUM RATINGS

Operating Temperature (°C)	-40°C~+85°C
Maximum System Voltage	1000VDC
Maximum Series Fuse Rating	20A

PACKAGING CONFIGURATION

2 pallets = 1 stack; 30pcs/pallets, 60pcs/stack, 720pcs/ 40'HQ Container

- ISO9001:2008 Quality Standards
- ISO14001:2004 Environmental Standards
- IEC61215, IEC61730 certified products
- UL61730 Certification
- ISO45001:2018 Occupational Health & Safety Standards

ELECTRICAL CHARACTERISTICS

Module Type	JKM370M-6RL3-B		JKM375M-6RL3-B		JKM380M-6RL3-B		JKM385M-6RL3-B		JKM390M-6RL3-B	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	370Wp	275Wp	375Wp	279Wp	380Wp	283Wp	385Wp	286Wp	390Wp	290Wp
Maximum Power Voltage (Vmp)	36.71V	33.49V	36.80V	33.57V	36.90V	33.70V	37.02V	33.90V	37.15V	34.02V
Maximum Power Current (Imp)	10.08A	8.22A	10.19A	8.31A	10.30A	8.39A	10.40A	8.45A	10.50A	8.53A
Open-circuit Voltage (Voc)	44.02V	41.55V	44.12V	41.64V	44.22V	41.74V	44.34V	41.85V	44.47V	41.97V
Short-circuit Current (Isc)	10.90A	8.80A	11.01A	8.89A	11.12A	8.98A	11.22A	9.06A	11.32A	9.14A
Module Efficiency STC (%)	19.38%		19.65%		19.91%		20.17%		20.43%	

***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%

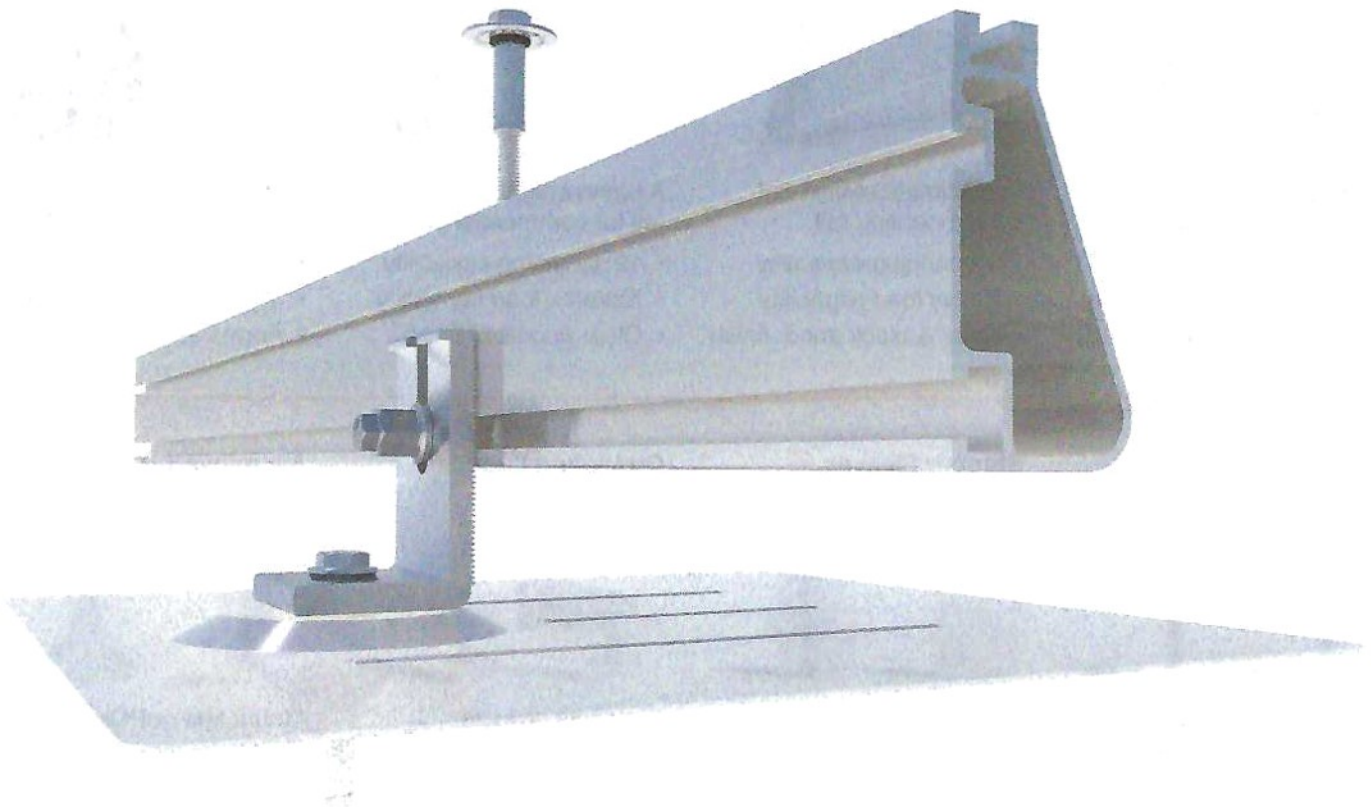
The company reserves the final right for explanation on any of the information presented hereby. JKM370-390M-6RL3-B-A2-US

BUILDING YOUR TRUST IN SOLAR. JINKOSOLAR.US

Datasheet

IRONRIDGE

Flush Mount System



Built for solar's toughest roofs.

IronRidge builds the strongest mounting system for pitched roofs in solar. Every component has been tested to the limit and proven in extreme environments.

Our rigorous approach has led to unique structural features, such as curved rails and reinforced flashings, and is also why our products are fully certified, code compliant and backed by a 20-year warranty.

Strength Tested

All components evaluated for superior structural performance.

PE Certified

Pre-stamped engineering letters available in most states.

Class A Fire Rating

Certified to maintain the fire resistance rating of the existing roof.

Design Assistant

Online software makes it simple to create, share, and price projects.

UL 2703 Listed System

Meets newest effective UL 2703 standard.

20-Year Warranty

Twice the protection offered by competitors.

XR Rails

XR10 Rail

A low-profile mounting rail for regions with light snow.

- 6' spanning capability
- Moderate load capability
- Clear & black anod. finish

XR100 Rail

The ultimate residential solar mounting rail.

- 8' spanning capability
- Heavy load capability
- Clear & black anod. finish

XR1000 Rail

A heavyweight mounting rail for commercial projects.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish

Bonded Splices

All rails use internal splices for seamless connections.

- Self-drilling screws
- Varying versions for rails
- Forms secure bonding

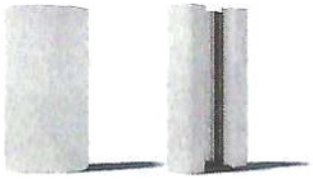
Clamps & Grounding

UFOs

Universal Fastening Objects bond modules to rails.

- Fully assembled & lubed
- Single, universal size
- Clear & black finish

Stopper Sleeves



Snap onto the UFO to turn into a bonded end clamp.

- Bonds modules to rails
- 6 different sizes
- Clear & black anod. finish

Grounding Lugs

Connects array to equipment ground.

- Low profile
- Single tool installation
- Mounts in any direction

Microinverter Kit

Mount MIs or POs to XR Rails.

- Bonds devices to rails
- Kit comes assembled
- Listed to UL 2703

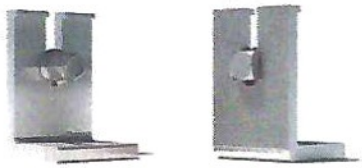
Attachments

FlashFoot

Anchor, flash, and mount with all-in-one attachments.

- Ships with all hardware
- IBC & IRC compliant
- Certified with XR Rails

Bonded L-Feet



Drop-in design for rapid rail attachment.

- Bonding hardware included
- Forms secure rail connection
- Clear & black anod. finish

Standoffs

Raise Flush Mount System to various heights.

- Works with vent flashing
- Ships assembled
- 4" and 7" Lengths

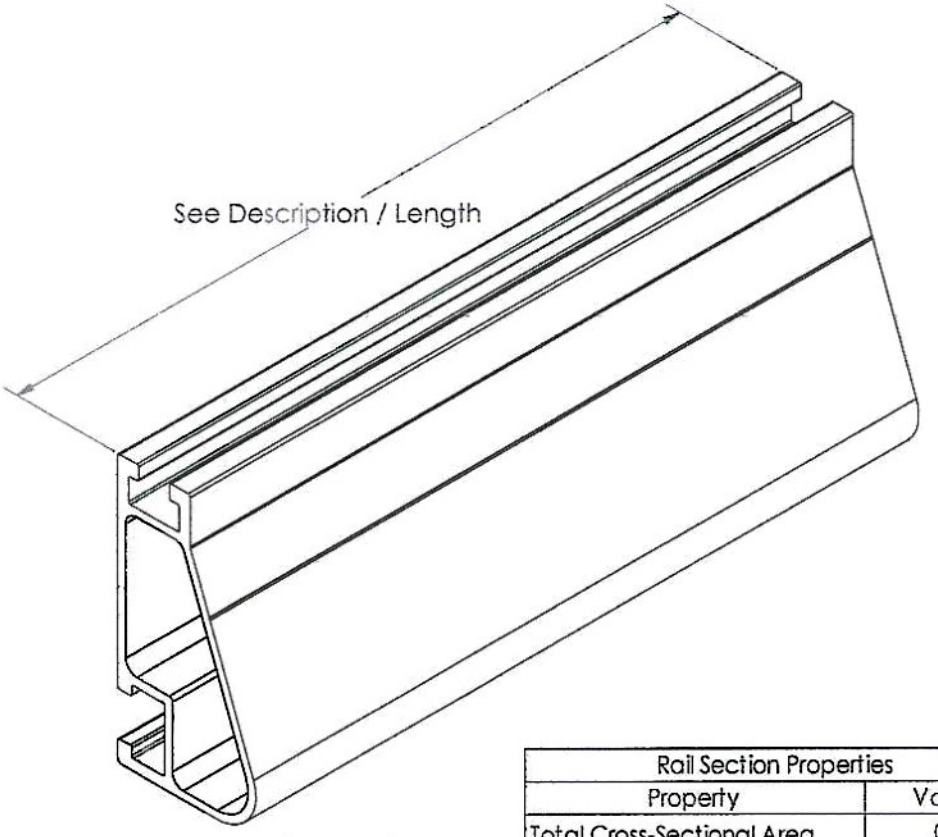
Resources

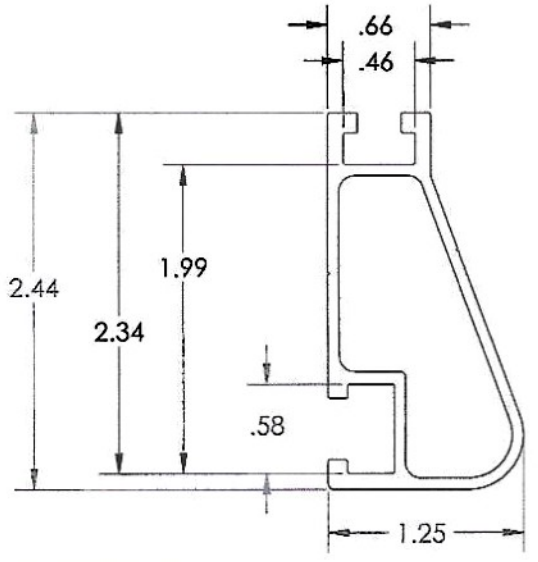
Design Assistant
Go from rough layout to fully engineered system. For free.
Go to IronRidge.com/design

NABCEP Certified Training
Earn free continuing education credits, while learning more about our systems.
Go to IronRidge.com/training

IRONRIDGE

XR100 Rail





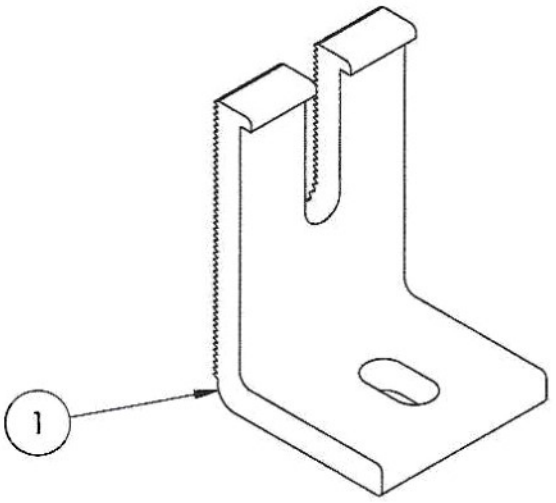
Rail Section Properties	
Property	Value
Total Cross-Sectional Area	0.582 in^2
Section Modulus (X-axis)	0.297 in^3
Moment of Inertia (X-axis)	0.390 in^4
Moment of Inertia (Y-axis)	0.085 in^4
Torsional Constant	0.214 in^3
Polar Moment of Inertia	0.126 in^4

APPROVED MATERIALS:
6005-T6, 6005A-T61, 6105-T5, 6N01-T6
(34,000 PSI YIELD STRENGTH MINIMUM)

Clear Part Number	Black Part Number	Description / Length	Material	Weight
XR-100-132A	XR-100-132B	XR100, Rail 132" (11 Feet)	6000-Series Aluminum	7.50 lbs.
XR-100-168A	XR-100-168B	XR100, Rail 168" (14 Feet)		9.55 lbs.
XR-100-204A	XR-100-204B	XR100, Rail 204" (17 Feet)		11.60 lbs.

IRONRIDGE

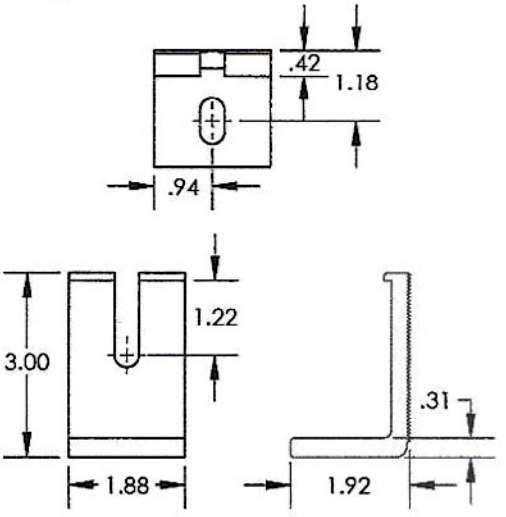
L-Foot



Item Number	Component
1	FOOT, EXTRUDED L - SLOTTED

Part Number	Description
LFT-03-M1	SLOTTED L-FOOT, MILL
LFT-03-B1	SLOTTED L-FOOT, BLACK

1) Foot, Extruded L - Slotted



Property	Value
Material	Aluminum
Finish	Mill / Black


Clinton
Kaine