

## Solar Panel Application Requirements for Local Historic Districts

The Local Historic District Commissions support efforts toward environmental sustainability, including the use of solar energy systems. Solar panel installations are reviewed on a case-by-case basis to ensure that the original appearance, character-defining features and historic fabric are retained in accordance with the provisions of Massachusetts General Laws, Chapter 40C, the Historic Districts Act. Appropriate installations will not damage historic roof materials or architectural features and are typically not visible from a public way.

1. Submission materials **MUST** include the following (see attached example). **Incomplete applications will not be accepted.**
  - A. Application for Local Historic District Certificate of Appropriateness, Non-Applicability, or Hardship
  - B. General Permit Application
  - C. Property location on Assessors database map
  - **Photographs**
    - D. Front elevation
    - E. All elevations where panels will be installed
  - **Drawings**
    - F. Roof plan showing panel arrangement and roof features such as dormers, chimneys, etc.
    - G. Building elevations showing panels and location of exterior conduits, disconnects and meters
    - H. Photo mock-ups or 3-D images of elevations showing panels
    - I. Side views of panel installations
  - **Product specifications**
    - J. Panels
    - K. Mounting system
2. Commissions typically require:
  - **Appropriate materials**
    - Panels, mounting systems and skirts that are compatible with the roof material color
    - Matte all black assemblies are often found to be appropriate for sloped roofs
  - **Appropriate installation**
    - Panels installed at the slope of the roof; avoid raised mounting assemblies
    - Panels that are visible should not be closer to the edge of the roof than the wall below; the panels can only be on the roof above the body of the house and not on the overhanging eaves.
    - Arrays should be arranged in panel groupings forming simple shapes; avoid zig-zag edges, holes in arrays or isolated panels to accommodate roof valleys, dormers, chimneys or other roof obstructions
    - Conduits installed in the interior or not visible from a public way
    - Visible conduits should be minimized by matching siding or roofing
    - Disconnects and inverters not visible from a public way or installed next to existing utility meters

Additional information can be found at:

- City of Newton Historic Preservation Design Guidelines – Sustainability p. 3 and Roofing p. 7:  
<http://www.newtonma.gov/civicax/filebank/documents/47025>  
<http://www.newtonma.gov/civicax/filebank/documents/47442>
- Secretary of the Interior's Standards for Rehabilitation:  
<https://www.nps.gov/tps/sustainability/new-technology/solar-on-historic.htm>

A



Setti D. Warren  
Mayor

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James Freas  
Acting Director

APPLICATION FOR LOCAL HISTORIC DISTRICT CERTIFICATE OF  
APPROPRIATENESS, NON-APPLICABILITY, OR HARDSHIP

DATE RECEIVED: \_\_\_\_\_

PROJECT #: \_\_\_\_\_

PROJECT ADDRESS: \_\_\_\_\_

PROJECT INFORMATION

IS THE PROPERTY AND/OR STRUCTURE DESIGNATED (check all that apply):

- LOCAL HISTORIC DISTRICT       LOCAL LANDMARK       NATIONAL REGISTER SITE

(Depending on how a property is designated, different Newton City Ordinances may apply.)

NAME OF LOCAL HISTORIC DISTRICT: \_\_\_\_\_

TYPE OF STRUCTURE(S) AFFECTED (Check all that apply):

- HOUSE       FENCE       GARAGE       NON-RESIDENTIAL BUILDING       SHED  
 SIGN       WALL       OTHER

IF OTHER, PLEASE DESCRIBE: \_\_\_\_\_

WHAT YEAR WAS THE STRUCTURE BUILT: \_\_\_\_\_

TYPE OF PROPOSED WORK (Check all that apply):

- ADDITION       ALTERATION       DEMOLITION       NEW CONSTRUCTION       REPAIR  
 REPLACEMENT       OTHER

IF OTHER, PLEASE DESCRIBE: \_\_\_\_\_

DESCRIBE SCOPE OF WORK:

IF KNOWN, BRIEFLY DESCRIBE THE HISTORY OF THE PROPERTY:

THE APPLICATION SHOULD INCLUDE THE FOLLOWING INFORMATION:

REQUIRED SUBMITTAL CHECKLIST (Check all being submitted)			
Proposed Building / Elevation Plans		Photographs of Existing Façade and Street	Assessor's Map or Site Plan
Building Product / Material Information		Photographs of Neighborhood	Structural Assessment ( <b>For demolitions only</b> )

(All plans **MUST** be dated, drawn to scale, and clearly labeled. An inaccurate or incomplete application will **NOT** be accepted. Please review the reverse of this form for additional information.)

NOTE: This Application **MUST** be accompanied by a General Permit Application.



## APPLICATION FOR CERTIFICATE INSTRUCTIONS

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**DEVELOPMENT REVIEW TEAM MEETING:** A Development Review Team (DRT) meeting is suggested for any application where other land use permits or reviews may be necessary. During a DRT, City staff from several departments meet with prospective applicants to evaluate new proposals. Many people find these meetings to be an efficient way to learn about issues they may want to address early on to ensure a successful project. After the DRT meeting, you'll be given a checklist for the next step and handouts further explaining the review and approval process.

**APPLICATION SUBMISSION REQUIREMENTS:** An application for a Certificate of Appropriateness, Non-Applicability, or Hardship will not be accepted by the Department of Planning and Development (Department) until it is determined to be complete. At time of intake, the Department will determine whether a review is necessary. **Inaccurate information or incomplete applications will delay the review of your project.** The items needed for a complete application include:

**FORMS:** A completed General Permit Application form and Certificate of Appropriateness, Non-Applicability, or Hardship application is required. The signature of the Owner of the property or the Owner's legal representative and the Applicant/Agent is mandatory on the General Application. Please provide current contact information on the General Permit Application form to ensure City staff is able to contact the appropriate people regarding the project. On the certificate application, be sure to fill in all possible fields with accurate information.

**FEES:** There is no fee for this application.

**PROJECT DESCRIPTION:** A detailed letter or narrative describing the project should include:

1. The historic and architectural value and significance of the site, building or structure; the general design, arrangement, texture, material and features involved; and the relation of such features to similar features of buildings and structures in the surrounding area.
2. In the case of new construction or additions to existing buildings or structures, information considering the appropriateness of size and shape of the building or structure both in relation to the site and structures in the vicinity shall be provided.
3. Information explaining whether the proposed work is connected to a building, structure or exterior architectural feature damaged or destroyed by fire, storm or other disaster; and
4. Information noting the condition of the building and its possible reuse and restoration.

**SUBMITTALS:** Each application **must** be accompanied by copies of the required project filing materials identified on the front page of this form. Any plans that are submitted as part of an application should be dated, drawn to scale, clearly labeled, and not exceed 11" x 17," except as requested by the Department.

**DOCUMENT FORMAT:** All information submitted as part of an application shall be submitted in the following format:

1. One (1) hard copy of the complete application packet, including completed forms; or
2. Submit the application electronically by emailing the complete application packet to the Preservation Planner. All documents **must** be consolidated into one .pdf. **Applications that are electronically submitted must be received by 5 p.m. on the application deadline date.** It is the responsibility of the petitioner to confirm all electronic submittals have been received.

**APPLICATION REVIEW PROCESS:** The Department, upon receipt of a complete application packet, shall determine whether the application meets the criteria for local historic district commission review. This criteria includes any proposed replacement of historic materials, or the removal of historic materials, that can be seen from a public way. Projects that are exempt from review are those that replace historic fabric in-kind, involve general maintenance of the structure, or are not visible from a public way. There is no fee for this review. At a public hearing, the Commission shall determine whether the petition has complied with the procedural requirements and criteria of r review. The Commission's decision shall be rendered within forty-five (45) days after receipt of the completed application.

**INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED.**



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James Freas  
Acting Director

GENERAL PERMIT APPLICATION

PROJECT #: \_\_\_\_\_ ZONING DISTRICT: \_\_\_\_\_ DATE RECEIVED: \_\_\_\_\_

PROJECT DESCRIPTION:

PROPERTY LOCATION INFORMATION

STREET ADDRESS: \_\_\_\_\_ CITY/ZIP: \_\_\_\_\_

LEGAL DESCRIPTION (SECTION, BLOCK, LOT): \_\_\_\_\_

PROPERTY OWNER INFORMATION

NAME: \_\_\_\_\_ PHONE: \_\_\_\_\_ ALT. PHONE: \_\_\_\_\_

MAILING ADDRESS: \_\_\_\_\_ E-MAIL ADDRESS: \_\_\_\_\_

PROPERTY OWNER CONSENT

I am (we are) the owner(s) of the property subject to this application and I (we) consent as follows:

- 1. This application for a land use permit or administrative approval for development on my (our) property is made with my permission.
- 2. I (we) grant permission for officials and employees of the City of Newton to access my property for the purposes of this application.

X \_\_\_\_\_ (Property Owner Signature) \_\_\_\_\_ (Date)

X \_\_\_\_\_ (Property Owner Signature) \_\_\_\_\_ (Date)

NOTICE: The City of Newton staff may need access to the subject property during regular business hours and will attempt to contact the applicant/agent prior to any visit. Further, members of a regulatory authority of the city may visit the property as well.

APPLICANT / AGENT INFORMATION

NAME: \_\_\_\_\_ PHONE: \_\_\_\_\_ ALT. PHONE: \_\_\_\_\_

MAILING ADDRESS: \_\_\_\_\_ E-MAIL ADDRESS: \_\_\_\_\_

X \_\_\_\_\_ (Applicant/Agent Signature) \_\_\_\_\_ (Date)

NOTICE: The applicant/agent is the primary contact and may be any individual representing the establishment or property owner. The applicant/agent must also be legally authorized to make decisions on behalf of the Property Owner(s) in regards to the application.

OFFICE USE ONLY BELOW THIS LINE

CHECK APPROPRIATE PERMIT OR REVIEW PROCESS (CHECK ALL BEING SUBMITTED)

<input type="checkbox"/>	Zoning Review Application	<input type="checkbox"/>	Comprehensive Permit
<input type="checkbox"/>	Administrative Site Plan Review	<input type="checkbox"/>	Variance Application
<input type="checkbox"/>	Sign Permit	<input type="checkbox"/>	Historic Preservation Review
<input type="checkbox"/>	Special Permit/Site Plan Approval	<input type="checkbox"/>	Conservation Commission Review
<input type="checkbox"/>	Fence Appeal	<input type="checkbox"/>	Other, describe _____

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PERMIT INTAKE INITIALS  
AND DATE STAMP

NOTE: This form MUST accompany all other Department of Planning and Development applications.

To Be Completed By Applicant



## GENERAL PERMIT APPLICATION INSTRUCTIONS

### LAND USE PERMITTING CHECKLIST (City staff, check all that apply)

In most instances, any development or land disturbance activity within the City of Newton will require some type of review and approval from the Planning Department and one of the City's regulatory authorities. In all cases, this General Permit Application must accompany all land use permitting applications. A checklist of permit forms, by regulatory authority, is provided below:

#### Administrative

- Administrative Site Plan
- Review of Accessory Apartment
- Wireless Facility

#### Conservation Commission

- Request for Determination of Applicability
- Notice of Intent
- Abbreviated Notice of Resource Area Delineation

#### Historic Commission(s)

- Demolition Delay
- Historic District
- Landmark/Preservation Restriction

#### Land Use Committee

- Amendment to Special Permit/Site Plan
- Extension of Nonconforming Use or Building
- Site Plan Only
- Special Permit/Site Plan

#### Urban Design Commission

- Fence Appeal
- Sign Permit

#### Zoning Board of Appeals

- Appeals of the ISD Commissioner
- Comprehensive Permit
- Variance Application

**NOTE:** The Planning Department has many handouts that provide useful information regarding each of the permitting processes above. Petitioners should also be aware that approvals from other City or State agencies may be necessary as well.

### APPLICATION COMPONENTS

For each permit application, the submission of inaccurate information or an incomplete application may delay the review and approval process for said permit. The items needed for a complete application will vary by permitting process, but generally include:

**FORMS:** A completed General Application and the project-specific permit application form. The signature of the Property Owner (or the Owner's legal representative) and the Applicant/Agent are **mandatory** on the General Permit Application.

**FEES:** To process any land use permit application, it must be submitted with the appropriate fee. The permit fee will vary by permitting process. All fees are subject to change, please contact the Department of Planning to verify the current fee.

**SUBMITTALS:** Each permit should also be accompanied by the necessary supporting documentation. The items needed to explain a project may vary, please refer to the permit application for the typical documents submitted for each permit application or contact a city planner. All applications should be submitted in hard and digital formats.

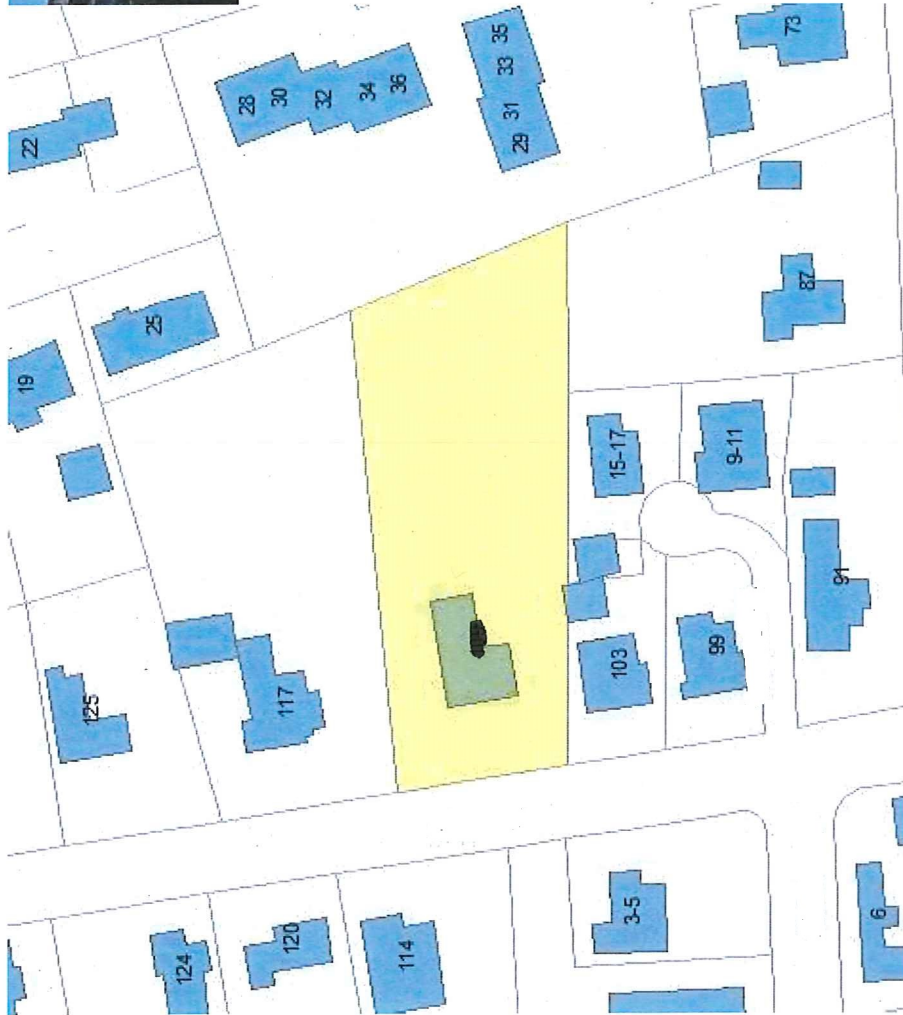
### SUBMITTING THE APPLICATION

Bring the complete application to the Planning Department (at Inspectional Services customer service counter), on the second floor of City Hall at 1000 Commonwealth Avenue. A planner will review the application, answer any questions you may have and explain the next step of the permitting process.

If you have questions about an application or application process, please call the Department of Planning at (617) 796-1120 or visit the Planning Department, Monday-Friday: 8:30 a.m. to 5:00 p.m., and Tuesday 8:30 a.m. to 8:00 p.m.

**INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED.**





[Start New Search](#)



1.22 mi

Scale 1" = 100.72 ft

[Print Property Record Card](#) | [View Sketch](#)

**Property SBL**

**Address**

**Owner**

**Basic Information**

**Property SBL**

**Address**

**Tax Bill Number**

**Land Use \***



D

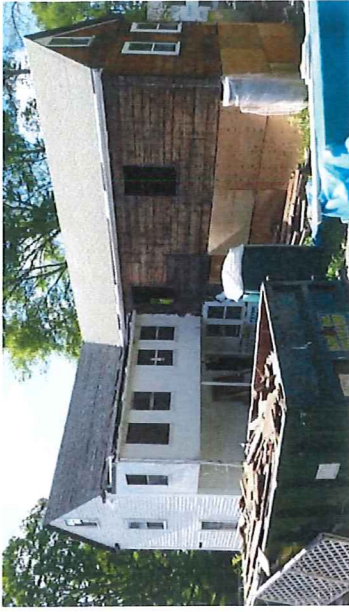


3



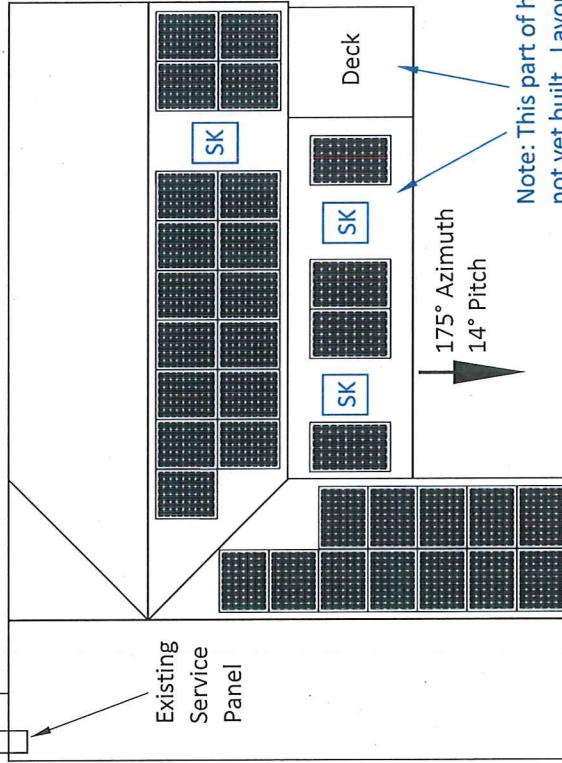


# F+G



Existing Utility Meter  
Proposed Net Meter  
Proposed AC Disco  
Proposed REC Meter

Front of House

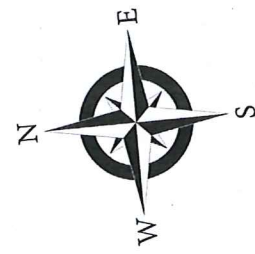


175° Azimuth  
40° Pitch

175° Azimuth  
14° Pitch

85° Azimuth  
40° Pitch

Note: This part of home not yet built. Layout based off of architectural plans and communication with home owner.



**SYSTEM SPECIFICATIONS**

DC POWER (KW): 9.9  
AC POWER (KW): 8.25  
AC VOLTAGE (V): 240  
AC CURRENT (A): 33  
AC DISCONNECT SIZE: 60A  
MODULE TYPE / QTY: LG 300W / 33  
INVERTER TYPE / QTY: Enphase M250 / 33

**SCALE:**  
1/8" = 1' (1:96)  
(on 11x17 paper)

**VIEW:** TOP

**CUSTOMER:**

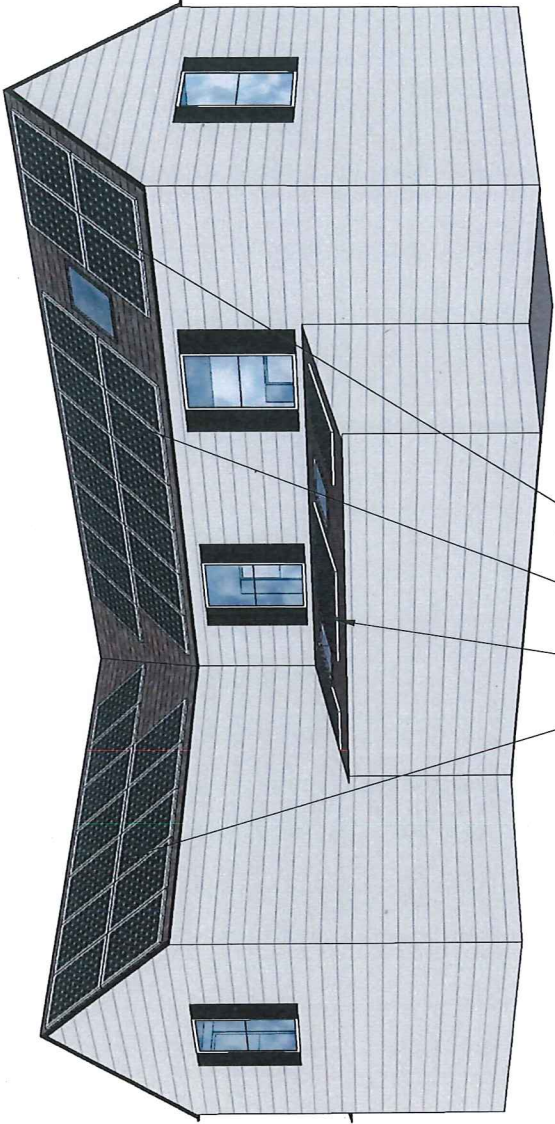
**COMPANY**

**DRAWN BY:**

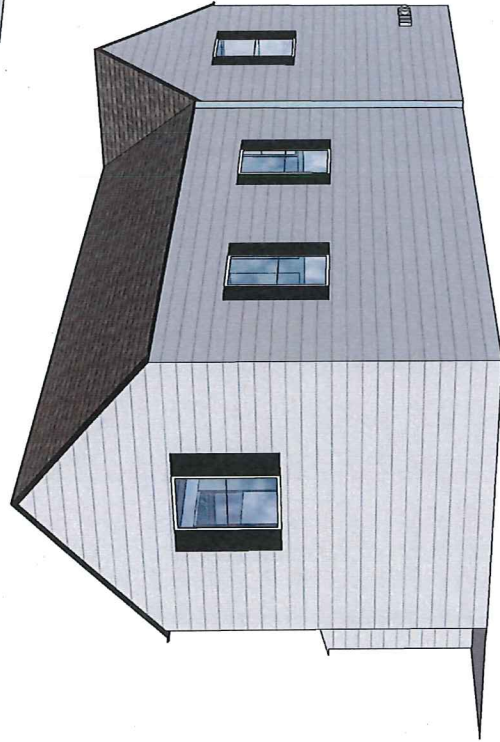
**DRAWN BY:**

H

Back Side of House View



Proposed Solar Arrays



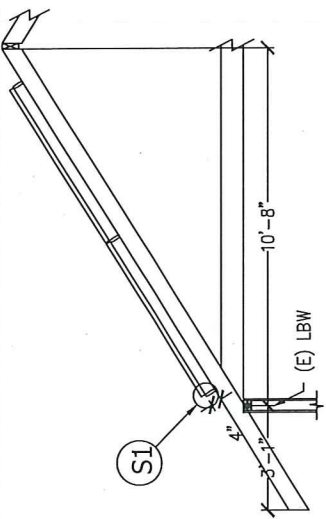
**SYSTEM SPECIFICATIONS**

DC POWER (KW): 9.9  
AC POWER (KW): 8.25  
AC VOLTAGE (V): 240  
AC CURRENT (A): 33  
AC DISCONNECT SIZE: 60A  
MODULE TYPE / QTY: LG 300W / 33  
INVERTER TYPE / QTY: Enphase M250 / 33

CUSTOMER:	COMPANY:	SCALE: NA
		VIEW: ISO
DRAWN BY:		

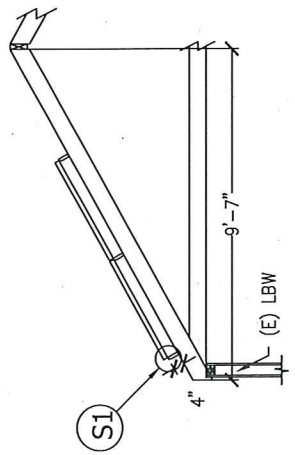


I



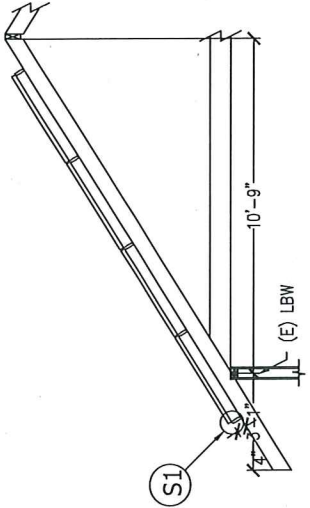
**A** SIDE VIEW OF MP1 NTS

MP1	X-SPACING	X-CANTILEVER	Y-SPACING	Y-CANTILEVER	NOTES
LANDSCAPE	72"	24"			STAGGERED
PORTRAIT	48"	18"			
RAFTER	2"x6" @ 24" OC		ROOF AZI 306 ARRAY AZI 306	PITCH 29 PITCH 29	STORIES: 2
C.I.	2"x8" @24" OC		Comp Shingle - Solid Sheathing		



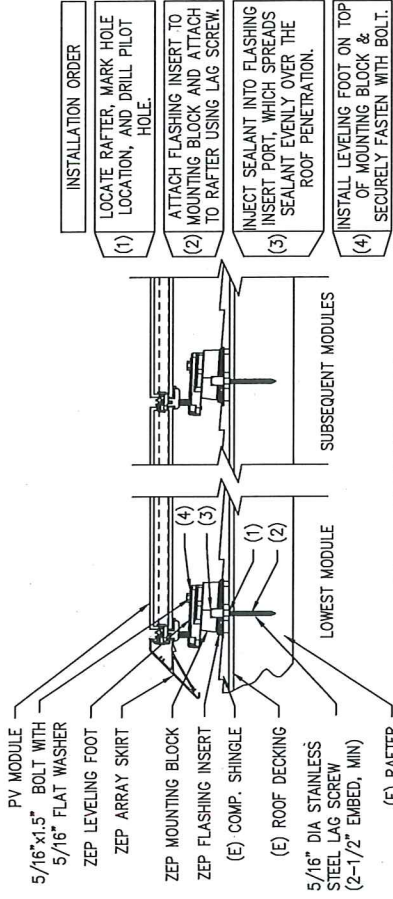
**C** SIDE VIEW OF MP3 NTS

MP3	X-SPACING	X-CANTILEVER	Y-SPACING	Y-CANTILEVER	NOTES
LANDSCAPE	64"	23"			STAGGERED
PORTRAIT	32"	15"			
RAFTER	2"x6" @ 32" OC		ROOF AZI 216 ARRAY AZI 216	PITCH 29 PITCH 29	STORIES: 2
C.I.	2"x6" @24" OC		Comp Shingle - Solid Sheathing		



**B** SIDE VIEW OF MP2 NTS

MP2	X-SPACING	X-CANTILEVER	Y-SPACING	Y-CANTILEVER	NOTES
LANDSCAPE	72"	24"			STAGGERED
PORTRAIT	48"	18"			
RAFTER	2"x6" @ 24" OC		ROOF AZI 126 ARRAY AZI 126	PITCH 32 PITCH 32	STORIES: 2
C.I.	2"x8" @24" OC		Comp Shingle - Solid Sheathing		

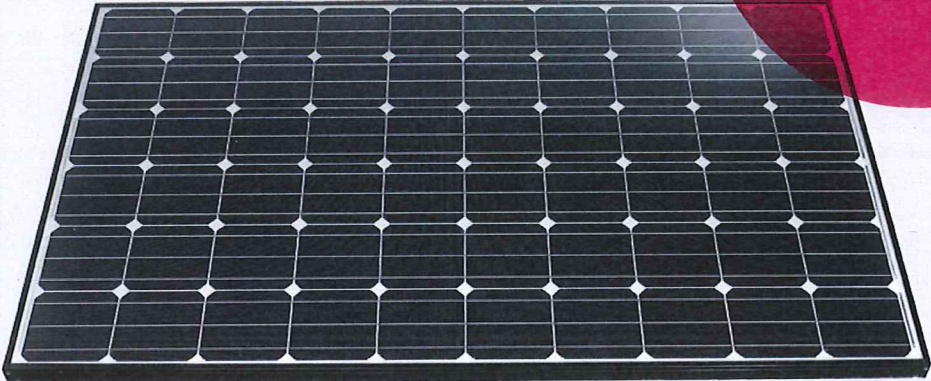


**S1** STANDOFF Scale: 1 1/2" = 1'

JOB NUMBER:	DESIGNER:
MOUNTING SYSTEM: ZS Comp V4 w Flashing-Insert	DATE: PV 5 e 8/18/2016
MODULES: (24) KYOCERA # KU260-6ZPB	REVISIONS:
INVERTER: SOLAREDDGE #SE5000A-US0005NR2	
PAGE NAME: STRUCTURAL VIEWS	

J

Innovation  
for a Better Life



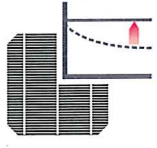
# 60 cell

Introducing **60 cell** which uses highly efficient n-type materials, an elaborate process control adopting a semiconductor processing solution and a double-sided structure. Our R&D concentrates on developing a product that is not only efficient, but strives to increase practical value for customers.



### N-Type Material

**60 cell** uses n-type cells, boasting higher mobility of electric charge, resulting in higher generation efficiency.



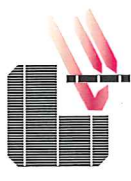
### Near Zero LID (Light Induced Degradation)

The n-type cells used in **60 cell** have almost no boron, which may cause the initial efficiency to drop, leading to less LID.



### Nano Level Control

**60 cell** uses the Nano-level process control predominant in semiconductor processing process, which ensures less electric loss from internal defects.



### Double-Sided Cell Structure

The rear of the cell used in **60 cell** is designed to contribute to generation; the light beam reflected from the rear of the module is reabsorbed to generate a great amount of additional power.






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## Mechanical Properties

Cells	6 x 10
Cell vendor	LG
Cell type	Monocrystalline
Cell dimensions	156 x 156 mm / 6 x 6 in
# of busbar	3
Dimensions (L x W x H)	1640 x 1000 x 35 mm 64.57 x 39.37 x 1.38 in
Static snow load	5400 Pa / 113 psf
Static wind load	2400 Pa / 50 psf
Weight	16.8 ± 0.5 kg / 36.96 ± 1.1 lb
Connector type	MC4 connector IP 67
Junction box	IP 67 with 3 bypass diodes
Length of cables	2 x 1000 mm / 2 x 39.37 in
Glass	High transmission tempered glass
Frame	Anodized aluminum

## Certifications and Warranty

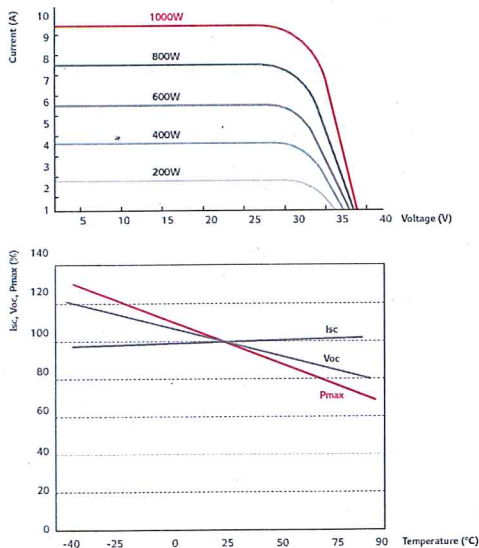
Certifications	IEC 61215, IEC 61730-1/-2, UL 1703, ISO 9001, IEC 61701, IEC 62716
Module fire performance (UL1703)	Type 2
Product warranty	10 years
Output warranty of P <sub>max</sub> (measurement Tolerance ± 3%)	Linear warranty* 

\* 1) 1st year: 98%, 2) After 2nd year: 0.7%p annual degradation, 3) 81.2% for 25 years

## Temperature Coefficients

NOCT	45 ± 2 °C
P <sub>mpp</sub>	-0.41 %/°C
V <sub>oc</sub>	-0.29 %/°C
I <sub>sc</sub>	0.04 %/°C

## Characteristic Curves



## Electrical Properties (STC \*)

	300 W
MPP voltage (V <sub>mpp</sub> )	32.0
MPP current (I <sub>mpp</sub> )	9.40
Open circuit voltage (V <sub>oc</sub> )	39.8
Short circuit current (I <sub>sc</sub> )	9.98
Module efficiency (%)	18.3
Operating temperature (°C)	-40 ~ +90
Maximum system voltage (V)	1000 (IEC), 600 (UL)
Maximum series fuse rating	20
Power tolerance (%)	0 ~ +3

\* STC (Standard Test Condition): Irradiance 1000 W/m<sup>2</sup>, module temperature 25 °C, AM 1.5

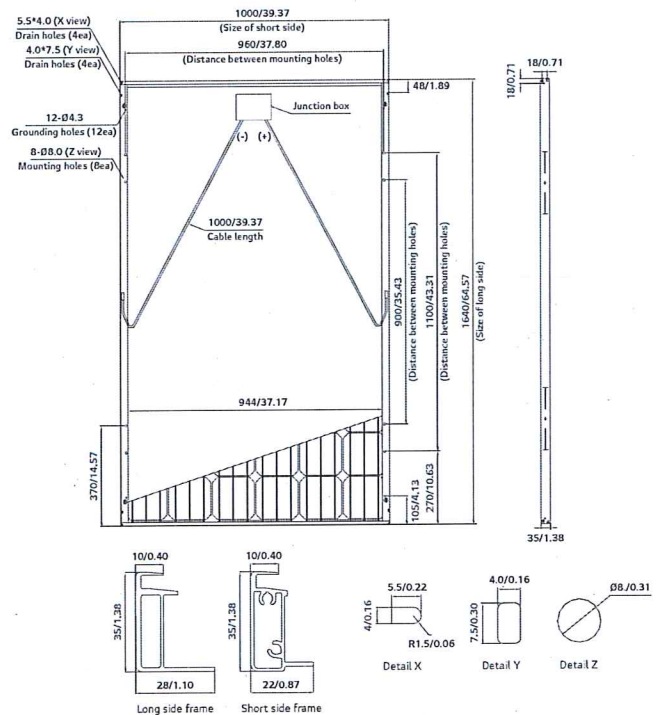
\* The nameplate power output is measured and determined by LG Electronics at its sole and absolute discretion.

## Electrical Properties (NOCT\*)

	300 W
Maximum power (P <sub>mpp</sub> )	220
MPP voltage (V <sub>mpp</sub> )	29.3
MPP current (I <sub>mpp</sub> )	7.50
Open circuit voltage (V <sub>oc</sub> )	36.9
Short circuit current (I <sub>sc</sub> )	8.05
Efficiency reduction (from 1000 W/m <sup>2</sup> to 200 W/m <sup>2</sup> )	< 2%

\* NOCT (Nominal Operating Cell Temperature): Irradiance 800 W/m<sup>2</sup>, ambient temperature 20 °C, wind speed 1 m/s







## Dimensions (mm/in)

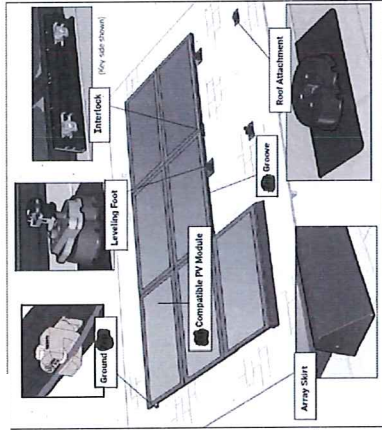


\* The distance between the center of the mounting/grounding holes

K

**Components**

 <p><b>Leveling Foot</b> ETL listed to UL 467</p>  <p><b>Comp Mount</b> Listed to UL 2062 Mounting Block Listed to UL 2703</p>	 <p><b>Interlock</b> Listed to UL 2703</p>  <p><b>Ground Zep V2</b> Listed to UL 467 and UL 2703</p>  <p><b>DC Wire Clip</b> Listed to UL 1565</p>
 <p><b>Array Skirt, Grip, End Caps</b> Listed to UL 1565</p>	



**Description**

- PV mounting solution for composition shingle roofs
- Works with all
- Auto bonding UL-listed narrowware creates structural and electrical bond
- has a UL 1703 Class A Fire Rating when installed using modules from any manufacturer certified as "Type 1" or "Type 2"

**Specifications**

- Designed for pitched roofs
- Installed in portrait and landscape orientations
- Supports module wind uplift and snow load pressures to 50 psf per UL 1703 report to ASCE 7-05 and 7.6.5.1
- Wind tunnel report to UL 1565 and UL 2703 and UL 467
- Grounding procedure UL listed to UL 2703 and UL 467
- Spacing products are UL listed to UL 2703
- End caps are UL listed to UL 2703
- Interlocks are UL listed to UL 2703
- Array Skirt is UL listed to UL 1565 for wire positioning devices
- Attachment method UL listed to UL 2582 for Wind Driven Rain





**OPTIONAL**  
Photo of an actual  
installation

