

HISTORIC LANDMARK COMMISSION STAFF REPORT



Planning Division
Department of Community and
Economic Development

Love Solar Panels
PLNHLC2014-00363
659 East 900 South
August 7, 2014

Applicant:

John Conde, contractor

Staff:

Katia Pace (801) 535-6354 or
katia.pace@slcgov.com

Tax ID: 16-08-151-015

Current Zone: RMF-30, Low
Density Multifamily Residential

Master Plan Designation:

Low Density Residential (5-15
dwelling units per acre)

Council District:

District 4, represented by Luke
Garrott

Lot Size:

Approximately 4,791 square feet

Current Use: Single Family

**Applicable Land Use
Regulations:**

- 21A.34.020
- 21A.40.190

Notification

- Notice mailed on 07/25/14
- Agenda posted on the
Planning Division and Utah
Public Meeting Notice
websites 07/25/14

Attachments

- A. Proposed Plans
- B. Photos

Request

The applicant John Conde, representing the property owner, is requesting approval from the City to locate a small solar energy collection system on a single family residence. The solar panels would be placed on the sides of the roof of the house and would be visible from the street. This property is located in the Central City Historic District.

This type of project must be reviewed as Minor Alteration by the Historic Landmark Commission as is it for a photovoltaic system which may be visible from a public right of way.

Staff Recommendation

Staff recommends that the Historic Landmark Commission review the application, and approve the location of the proposed small solar energy collection system pursuant to the findings, analysis and conditions of approval in this staff report.

Potential Motions

Consistent with Staff Recommendation: Based on the analysis and findings of fact in the staff report, testimony and plans presented, I move that the Commission approve the request for a minor alteration for the installation of a small solar energy collection system on the side roof and visible from the public right-of-way for the residence at 659 East 900 South.

Not Consistent with Staff Recommendation: Based on the testimony, plans presented and the following findings, I move that the Commission deny the request for a minor alteration for the installation of a small solar energy collection system on the side roof and visible from the public right-of-way for the residence at 659 East 900 South based on the following findings (Commissioner then states findings based on the Standards to support the motion):

1. A property shall be used for its historic purpose or be used for a purpose that requires minimal change to the defining characteristics of the building and its site and environment;
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;

	<ol style="list-style-type: none">3. All sites, structures and objects shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create a false sense of history or architecture are not allowed;4. Alterations or additions that have acquired historic significance in their own right shall be retained and preserved;5. Distinctive features, finishes and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved;6. Deteriorated architectural features shall be repaired rather than replaced wherever feasible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, texture and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historic, physical or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other structures or objects;7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible;8. Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant cultural, historical, architectural or archaeological material, and such design is compatible with the size, scale, color, material and character of the property, neighborhood or environment;9. Additions or alterations to structures and objects shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired. The new work shall be differentiated from the old and shall be compatible in massing, size, scale and architectural features to protect the historic integrity of the property and its environment;10. Certain building materials are prohibited including the following:<ol style="list-style-type: none">a. Aluminum, asbestos, or vinyl cladding when applied directly to an original or historic material.11. Any new sign and any change in the appearance of any existing sign located on a landmark site or within the H historic preservation overlay district, which is visible from any public way or open space shall be consistent with the historic character of the landmark site or H historic preservation overlay district and shall comply with the standards outlined in chapter 21A.46 of this title.
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Vicinity Map & Photo of House



Background & Project Description

The subject property is located at 659 East 900 South is considered a contributing historic property in the Central City Historic District. The house is a bungalow built in 1922. The house has a hipped roof and asphalt shingles. The total area of the roof is approximately 1,798 square feet. The applicant is requesting to place 16 solar panels on the east/west sides of the roof. The proposed size of the small solar energy collection system is approximately 308 square feet. There will be no panels on the front or the back of the roof. The panels are approximately 3.5 by 5.5 feet. The panels will be mounted relatively parallel to the roof, they will be 4 inches off the roof surface in the front of the panel and 17 inches in the back to provide rain and snow drainage. Panels will have a black frame, black backing paper, and black cells. The color of the roof is gray.

Originally the applicant requested the panels to be placed on the east and south sides of the house. The south side is the front façade. South facing panels are the most efficient energy producers, but because of the high street visibility, the applicant changed the request to the east and west sides so the panels will not be as readily visible. The option to place the solar panels on the north elevation is not feasible since it does not have the necessary access to the sun.

The property has an accessory structure on the rear yard. The applicant considered the possibility of placing the panels on the south roof of the accessory structure, but the surface of the accessory structure is only 12 feet from the ridgeline to the edge of the roof and the small solar energy collection system requires at least 14 feet.

Public Comments

No comments had been received at the time of publication of this staff report. Any comments received prior to the meeting will be forwarded to the members of the Historic Landmark Commission.

Zoning Ordinance and Design Guidelines

21A.40.190.A – Small Solar Energy Collection Systems Standards

1. Setbacks, Location, and Height:

- a. A small solar energy collection system shall be located a minimum of six feet from all property lines and other structures, except the structure on which it is mounted.

Analysis: The six foot setback from the property line is for solar panels standing on their own structure. Solar panels mounted on the roof of an existing structure do not require the six foot setback.

Finding: This standard does not apply to this project because the proposed small solar energy collection system would be located on the roof of an existing structure.

- b. A small solar energy collection system may be located on an accessory structure, including legal accessory structures located less than six feet from a property line.

Analysis: The proposed solar panels will be located on the primary structure. The applicant considered the possibility of placing the panels on the south roof of the accessory structure, but the surface of the accessory structure is only 12 feet from the ridgeline to the edge of the roof and the small solar energy collection system requires at least 14 feet.

Finding: The location on the accessory structure was considered, but found that it was not feasible.

- c. A small solar energy collection system shall not exceed by more than three feet the maximum building height (based on the type of building – principal or accessory - the system is located on) permitted in the zoning district in which it is located or shall not extend more than 12 feet above the roofline of the structure upon which it is mounted, whichever is less.

Analysis: The proposed small solar energy collection system are proposed to be parallel to the roof, or 4 inches off the roof surface in the front of the panel and 17 inches in the back to provide rain and snow drainage. In addition, the existing one-story residence is well below the maximum height of 30 feet for the zoning district.

Finding: This standard is met.

- d. A development proposed to have a small solar energy collection system located on the roof or attached to a structure, or an application to establish a system on an existing structure, shall provide a structural certification as part of the building permit application.

Analysis: The applicant will need to submit all necessary documentation for the installation and structural details for the proposed solar panels.

Finding: This standard will need to be met should the request be approved and a building permit is applied for.

- 2. Coverage: A small solar energy collection system mounted to the roof of a building shall not exceed 90% of the total roof area of the building upon which it is installed. A system constructed as a separate accessory structure on the ground shall count toward the total building and yard coverage limits for the lot on which it is located.

Analysis: The proposed small solar energy collection system is proposed to be mounted on the main residence and not on the accessory building. The proposed size of the small solar energy collection system is approximately 308 square feet. The total area of the roof where it will be placed is approximately 1,798 square feet. This means that the proposed small solar energy collection system will only be about 17% of the roof area.

Finding: This standard has been met.

- 3. Code Compliance: Small solar energy collection systems shall comply with all applicable building and electrical codes contained in the international building code adopted by Salt Lake City.

Analysis: Should the proposed small solar energy collection system be approved, it will need to comply with all applicable codes adopted by Salt Lake City.

Finding: This standard will need to be met should the request be approved and a building permit is applied for.

- 4. Solar Easements: A property owner who has installed or intends to install a small solar energy collection system shall be responsible for negotiating with other property owners in the vicinity for any desired solar easement to protect solar access for the system and shall record the easement with the Salt Lake County Recorder.

Analysis: The applicant will be responsible for negotiating with other property owners for any desired solar easements.

Finding: This standard is not applicable to the approval of this project.

5. Off Street Parking and Loading Requirements: Small solar energy collection systems shall not remove or encroach upon required parking or loading areas for other uses on the site or access to such parking or loading areas.

Analysis: The proposed small solar energy collection system is located on the main residence and is not located upon any required parking area.

Finding: This standard has been met.

21A.4.0190.B.3 – Small Solar Collection Systems and Historic Preservation Overlay Districts or Landmark Sites: Small Solar Collection System Location Priorities

3. Small Solar Collection System Location Priorities: In approving appropriate locations and manner of installation, consideration shall include the following locations in the priority order they are set forth below. The method of installation approved shall be the least visible from a public right of way, not including alleys, and most compatible with the character defining features of the historic building, structure, or site. Systems proposed for locations in subsections B.3.a through B.3.d of this section, which are not readily visible from a public right of way may be reviewed administratively as set forth in subsection 21A.34.020.F,1, “Administrative Decision”, of this title. Systems proposed for locations in subsections B.3.e and B.3.f of this section, which may be visible from a public right of way shall be reviewed by the Historic Landmark Commission in accordance with the procedures set forth in subsection 21A.34.020.F.2, “Historic Landmark Commission”, of this title.

- a. Rear yard in a location not readily visible from a public right of way.
- b. On accessory buildings or structures in a location not readily visible from a public right of way.
- c. In a side yard in a location not readily visible from a public right of way.
- d. On the principal building in a location not readily visible from a public right of way.
- e. On the principal building in a location that may be visible from a public right of way, but not on the structure’s front facade.
- f. On the front facade of the principal building in a location most compatible with the character defining features of the structure.

Analysis:

- The rear yard is not an option for installation as the yard area would not be large enough to place the system and also conform to all setbacks and distance requirements.
- The existing accessory structure has 12 feet surface on the roof from the ridgeline to the edge of the roof and this small solar energy collection system requires at least 14 feet.
- The existing residence has narrow side yard setbacks that would not accommodate the small

solar energy collection system. Locating the proposed small solar energy collection system in the side yard is not feasible as there is not enough room in the side yard to locate the system.

- The only portion of the roof that faces north is on the backside of the residence and that location is not suitable for solar panels. There would be minimal solar exposure for the system.
- The proposed small solar collection system will be placed on the east and west sides of the roof and towards the rear of the structure. Due to an alley running parallel to the east side of the property, and the space between houses, the small solar energy collection system will be visible from the street, 900 South Street, but will not be located in the front façade.

Finding: This application cannot be administratively approved as the preferred location priorities are not suitable based on the orientation, size and site features of this property as described above.

21A.40.190.B.2 - Small Solar Collection Systems and Historic Preservation Overlay Districts Or Landmark Sites

1. General: In addition to meeting the standards set forth in this section, all applications to install a small solar collection system within the historic preservation overlay district shall obtain a certificate of appropriateness prior to installation. Small solar collection systems shall be allowed in accordance with the location priorities detailed in subsection B3 of this section. If there is any conflict between the provisions of this subsection B, and any other requirements of this section, the provisions of this subsection B shall take precedence.

Analysis: As noted above in the analysis of the location priorities, there are some preferred locations for installation of the proposed small solar energy collection system that will not work on this particular property. Staff has noted why each of the priority locations will not work either because of the location on the property in relation to the sun exposure, small side yards at the property and because the surface of the roof on the accessory structure will not be sufficient for the small solar energy collection system.

Finding: The proposed location, while it is not one of the priority locations, is the best possible location for the proposed small solar energy collection system, on the site. Should the application be approved by the Historic Landmark Commission, the applicant will need to obtain a Certificate of Appropriateness and this standard will be met.

2. Installation Standards: The small solar energy collection system shall be installed in a location and manner on the building or lot that is least visible and obtrusive and in such a way that causes the least impact to the historic integrity and character of the historic building, structure, site or district while maintaining efficient operation of the solar device. The system must be installed in such a manner that it can be removed and not damage the historic building, structure, or site it is associated with.

Analysis: Although the proposed on the east side will be visible from the street, staff finds that the visual impact of the small solar energy collection system will be minimized by installing the system as far north as possible and flush as possible to the roof to make them less visible while still making them function effectively. In addition, the proposed system will be placed on the roof and will not damage the main components of the historic structure. The proposed system could be removed in the future with some damage to the roof material, but the existing asphalt shingles on the roof are not original to the residence.

Finding: The proposed location of the small solar energy collection system will be the least obtrusive to the historic nature of the residence and property and can be easily removed in the future with minimal

impact to the roof, not the roof structure. This location has also been chosen as it will be the most efficiently location for the system to operate.

21A.34.020 H Historic Preservation Overlay District

G. Standards for Certificate of Appropriateness for Altering of a Landmark Site or Contributing Structure: In considering an application for a Certificate of Appropriateness for alteration of a landmark site or contributing structure, the Historic Landmark Commission shall find that the project substantially complies with all of the general standards that pertain to the application and that the decision is in the best interest of the City.

Standard 1: A property shall be used for its historic purpose or be used for a purpose that requires minimal change to the defining characteristics of the building and its site and environment;

Analysis: The building was constructed in 1922 as a single family home. No change of use is proposed and very little, if any, impact will be made to the characteristics of the home. In the event the proposed small solar collection system damages the roof, it would most likely only damage the roofing material which is not original.

Finding: This standard is met.

Standard 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;

Applicable Design Guidelines from *A Preservation Handbook for Historic Residential Properties & Districts in Salt Lake City*.

7.6 The visual impact of skylights and other rooftop devices should be minimized.

- Skylights or solar panels should be installed to reflect the plane of the historic roof.
- They should be lower than the ridgeline, when possible.
- Flat skylights and solar panels that are parallel with the roof plane may be appropriate on the rear and sides of the roof.
- Avoid locating a skylight or solar panel on a front roof plane wherever possible.

Analysis: The small solar energy collection system will be placed:

- Parallel to the roof, or 4 inches off the roof surface in the front of the panel and 17 inches in the back to provide rain and snow drainage.
- They will be placed 36 inches from the roof ridgeline to comply with fire code.
- They will be placed further north on the eastern and western sides of the roof and not on the front façade. Although it will be visible from the street on the east side, the options for where to place the panels are limited in order to efficiently produce energy.

1. **Finding:** Although the proposed small solar energy collection system will be visible from the street on the east side, staff finds that the visual impact will be minimized by installing the system as far north as possible and flush as possible to the roof to make them less visible while still making them function effectively. The small solar energy collection system will be placed parallel to the roof and not above the ridgeline, and no portion of the roof will be altered. No historic materials or features are proposed to be altered as part of this request. Options for other locations are limited due to size or location relative to the sun. This standard is met.

Standard 3: All sites, structure and objects shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create a false sense of history or architecture are not allowed.

Analysis: The panels are a utility and are not being installed in a manner to create a false sense of history or architecture.

Finding: This standard is met.

Standard 4: Alterations or additions that have acquired historic significance in their own right shall be retained and preserved.

Analysis: No significant historic features will be lost.

Finding: This standard is met.

Standard 5: Distinctive features, finishes and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

Analysis: No significant historic features will be lost as the proposed small solar energy collection system will be located on the roof and will have very little impact to the roof or the character of the property. The property and the structure will continue to remain a historic property that can have the solar panels removed with little to no impact to the property or residence. The proposed panels will be flush mounted to the roof and will be required to be structurally safe per the building code requirements.

Finding: This standard is met.

Standard 6: Deteriorated architectural features shall be repaired rather than replaced wherever feasible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, texture and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historic, physical or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other structures or objects.

Analysis: The subject proposal does not include repair or replacement of deteriorated architectural features.

Finding: This standard is not applicable.

Standard 7: Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

Analysis: The proposed work does not include any treatments of historic materials.

Finding: This standard is not applicable.

Standard 8: Contemporary designs for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant cultural, historical, architectural or archaeological

material, and such design is compatible with the size, scale, color, material and character of the property, neighborhood or environment.

Analysis: Although a minor feature will be added to the roof of the residence, the roof form itself will not be modified or altered. The proposed small solar energy collection system is designed to be flush mounted to have the least amount of visual and structural impact.

In addition, the color of the roof is gray and the panels of the proposed small solar collection system are black. It is entirely possible that the panels will be more visible due to the existing roof color and the color of the panels. However, solar panels typically are a dark color and being that this is the best location for the system based on maximum sun exposure, the proposal is as compatible as it can be.

Finding: This standard is met.

Standard 9: Additions or alterations to structures and objects shall be done in such a manner that if such additions or alteration were to be removed in the future, the essential form and integrity of the structure would be unimpaired. The new work shall be differentiate from the old and shall be compatible in massing, size, scale and architectural features to protect the historic integrity of the property and its environment.

Analysis: The proposed small solar energy collection system can be removed without impairing any form and integrity of the structure other than possible damage to the asphalt shingle roof.

Finding: This standard is met.

Standard 10: Certain building materials are prohibited including the following: Vinyl, asbestos, or aluminum cladding when applied directly to an original or historic material.

Analysis: Small solar energy collection systems are considered an accessory to the building and no original material will be affected.

Finding: This standard is not applicable.

Standard 11: Any new sign and any change in the appearance of any existing sign located on a landmark site or within the H historic preservation overlay district, which is visible from any public way or open space shall be consistent with the historic character of the landmark site or H historic preservation overlay district and shall comply with the standards outlined in part IV, Chapter 21A.46 of this title;

Analysis: No signs are proposed.

Finding: This standard is not applicable.

Attachment A
Proposed Plans



Love Residence
4kW Solar Project

Property Line

659 E 900 S, Salt Lake City, UT 84105, USA

Utility Meter and Point
of Interconnection.

36" clearance
for fire code

36.64 ft

900 South

Google earth

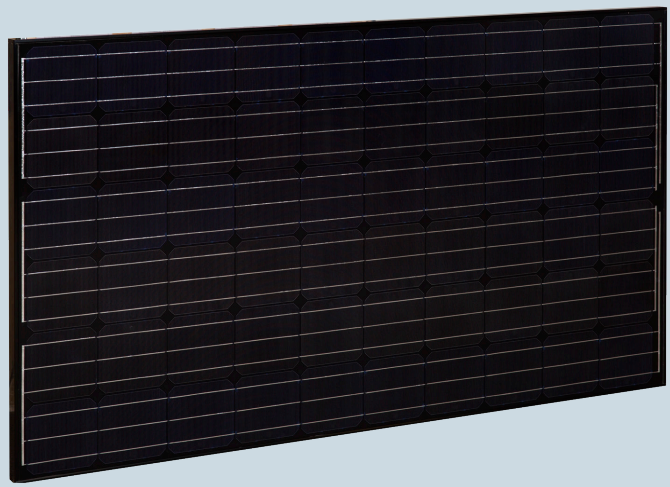
1970

Imagery Date: 6/4/2013 40°45'00.13" N 111°52'18.88" W elev 4283 ft eye alt 4510 ft



**High-quality and high-efficiency
PV yields sensible solar**

SUNIVA OPTIMUS® SERIES MONOCRYSTALLINE SOLAR MODULES



OPTXXX-60-4-1B0 (60 CELL MODULE)

The Optimus® modules consist of Suniva's latest technology: ARTisun® Select. These superior monocrystalline cells are designed and manufactured in the U.S.A. using our proprietary low-cost processing techniques. Engineered with our pioneering ion implantation technology, high power-density Optimus modules provide excellent value, performance and reliability.

Certifications:



Engineering Excellence

- Built exclusively with Suniva's highest-efficiency ARTisun Select cells, providing one of the highest power outputs per square meter at an affordable manufacturing cost
- Suniva's state-of-the art manufacturing facility features the most advanced equipment and technology
- Suniva is a U.S. -based company spun out from the Georgia Tech University Center of Excellence in Photovoltaics (one of only two such research centers in the U.S.)

Features

- Contains the latest ARTisun Select cell technology - over 19%
- Black frame and backsheet ideal for residential market
- Positive only tolerance ensures predictable output
- Marine grade aluminum frame with hard anodized coating
- Industry leading linear warranty (10 year warranty on workmanship and materials; 25 year linear performance warranty delivering 80% power at STC)
- Buy America compliant upon request
- Qualifies for U.S. EXIM financing
- System and design services available

Quality & Reliability

- Suniva Optimus modules are manufactured and warranted to our specifications assuring consistent high performance and quality worldwide.
- Rigorous quality management
 - Performance longevity with advanced polymer backsheet
 - Produced in an ISO 9001: 2008 certified facility
 - Passed the most stringent salt spray tests based on IEC 61701
 - Passed enhanced stress tests¹ based on IEC 61215 conducted at Fraunhofer ISE²
 - Certified PID free
 - Ask about our validated PAN files

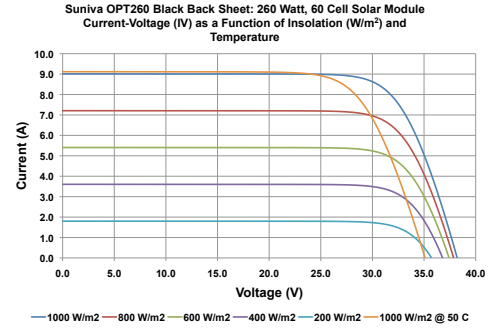
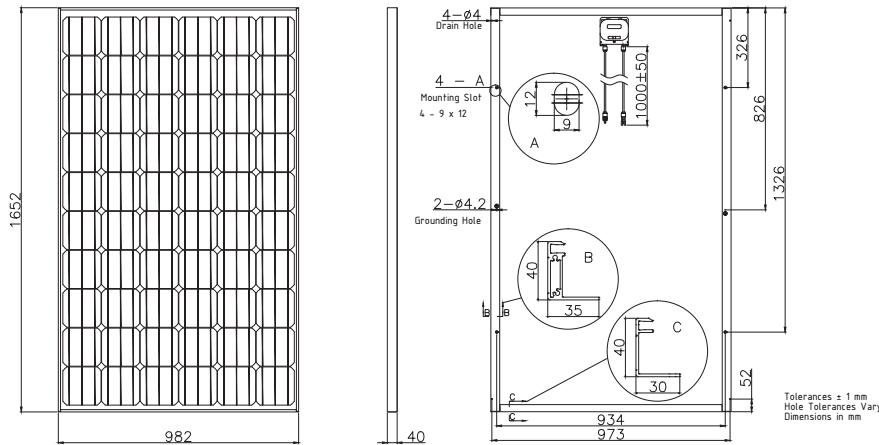
OUR PRODUCTS:

Monocrystalline Modules
OPTIMUS SERIES 60 cell
OPTIMUS SERIES 72 cell

Multicrystalline Modules
MV SERIES 60 cell
MV SERIES 72 cell

Monocrystalline Cells
19%+ efficiency

Balance of Systems Solutions (BOSS)
Racking, Inverters, Batteries, Energy Storage Appliances and EV Chargers



ELECTRICAL DATA (NOMINAL)

The rated power may only vary by -0/+4.99Wp and all other electrical parameters by ± 5%

Power Classification	Pmax (W)	255	260	265
Module Efficiency	%	15.71	16.02	16.33
Model Number	OPT	255-60-4-1B0	260-60-4-1B0	265-60-4-1B0
Voltage at Max. Power Point	Vmp (V)	30.20	30.50	30.70
Current at Max. Power Point	Imp (A)	8.45	8.52	8.64
Open Circuit Voltage	Voc (V)	38.1	38.3	38.3
Short Circuit Current	Isc (A)	8.96	9.01	9.12

The electrical data apply to standard test conditions (STC): Irradiance of 1000 W/m² with AM 1.5 spectra at 25°C.

DIMENSIONS AND WEIGHT

Cells / Module	60 (6x10)
Module Dimensions	1652 x 982 mm (65.04 x 38.66 in.)
Module Thickness (Depth)	40 mm (1.57 in.)
Approximate Weight	17.9 +/- 0.25 kg. (39.5 +/- 0.5 lb.)

CHARACTERISTIC DATA

Type of Solar Cell	High-efficiency Suniva® ARTisun® Select monocrystalline cells of 156 x 156 mm (6 in.)
Frame	Black anodized aluminum alloy
Glass	Tempered (low-iron); anti-reflective coating
Junction Box	NEMA IP65 rated; 3 internal bypass diodes
Cable & Connectors	12 AWG (4 mm ²) cable with Tyco or MC4 compatible (H4) connectors ³ ; cable length approx. 1000 mm
Hardware (Available Upon Request)	Grounding screws: (2) #10-32 x 12.7 mm (#10-32 x 0.5 in.) Stainless steel flat washers: (4) 5 x 10 x 1 mm (0.2 in. ID x 0.39 in. OD x 0.03 in.)

TEMPERATURE COEFFICIENTS

Voltage	β , Voc (%/°C)	-0.335
Current	α , Isc (%/°C)	+0.047
Power	γ , Pmax (%/°C)	-0.420
NOCT Avg	(+/- 2 °C)	46.0

LIMITS

Max. System Voltage	1000 VDC for IEC (600 VDC for UL)
Operating Module Temperature	-40°C to +85°C
Storm Resistance/Static Load ¹	Tested to IEC 61215 for loads up to 5400 Pa; hail and wind resistant

Suniva® reserves the right to change the data at any time. View manual at suniva.com. ¹UV 90 kWh, TC 400, DH 2000.

²Tests were conducted on module type OPT 60 silver frame. ³See sales rep.

[SAMD_0016]

Headquarters

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Tel: +1 404 477 2700

www.suniva.com



Please recycle.

Attachment B
Photos



Solar Panels visible from the street

Liberty Park

4x4 block of panels on west side of home

4x4 block of panels

