Address:	310 Tulip Avenue, Takoma Park	Meeting Date:	9/23/2020
Resource:	Non-Contributing Resource	Report Date:	9/16/2020
	Takoma Park Historic District	Public Notice:	9/9/2020
Applicant:	(Jill Feasley, Agent)	Tax Credit:	No
Review:	HAWP	Staff:	Michael Kyne
Case Number:	37/03-20VVV		
PROPOSAL:	Solar panel installation		

MONTGOMERY COUNTY HISTORIC PRESERVATION COMMISSION STAFF REPORT

STAFF RECOMMENDATION

Staff recommends that the HPC **<u>approve</u>** the HAWP application.

ARCHITECTURAL DESCRIPTION

SIGNIFICANCE:	Non-Contributing Resource within the Takoma Park Historic District
STYLE:	Contemporary
DATE:	c. 1960s-70s



Fig. 1: Subject property.

PROPOSAL

The applicant proposes to install 81 roof-mounted solar panels at the subject property.

APPLICABLE GUIDELINES

When reviewing alterations and new construction within the Takoma Park Historic District several documents are to be utilized as guidelines to assist the Commission in developing their decision. These documents include the historic preservation review guidelines in the approved and adopted amendment for the *Takoma Park Historic District (Guidelines), Montgomery County Code Chapter 24A (Chapter 24A), Historic Preservation Commission Policy No. 20-01: ADDRESSING EMERGENCY CLIMATE MOBILIZATION THROUGH THE INSTALLATION OF ROOF-MOUNTED SOLAR PANELS (Policy No. 20-01), and the Secretary of the Interior's Standards for Rehabilitation (Standards). The pertinent information in these documents is outlined below.*

Takoma Park Historic District Guidelines

There are two very general, broad planning and design concepts which apply to all categories. These are:

- The design review emphasis will be restricted to changes that are all visible from the public rightof-way, irrespective of landscaping or vegetation (it is expected that the majority of new additions will be reviewed for their impact on the overall district), and
- The importance of assuring that additions and other changes to existing structures act to reinforce and continue existing streetscape, landscape, and building patterns rather than to impair the character of the historic district.

NON-CONTRIBUTING /OUT-OF-PERIOD RESOURCES - RESIDENTIAL

Non-Contributing/Out-of-Period Resources are either buildings that are of little or no architectural and historical significance to the historic district or are newer buildings that have been constructed outside of the district's primary periods of historical importance.

These types of resources should receive the most lenient level of design review. Most alterations and additions to Non-Contributing/Out-of-Period Resources should be approved as a matter of course. The only exceptions would be major additions and alterations to the scale and massing of Non-Contributing/Out-of-Period Resources which affect the surrounding streetscape and/or landscape and could impair the character of the historic district as a whole.

Demolition of Non-Contributing/Out-of-Period Resources should be permitted. However, any new building constructed in the place of a demolished building should be reviewed under the guidelines for new construction that follow.

Montgomery County Code; Chapter 24A-8

- (b) The commission shall instruct the director to issue a permit, or issue a permit subject to such conditions as are found to be necessary to ensure conformity with the purposes and requirements of this chapter, if it finds that:
 - (1) The proposal will not substantially alter the exterior features of an historic site or historic resource within an historic district; or
 - (2) The proposal is compatible in character and nature with the historical, archeological, architectural or cultural features of the historic site or the historic district in which an historic resource is located and would not be detrimental thereto or to the achievement of the purposes of this chapter; or

- (3) The proposal would enhance or aid in the protection, preservation and public or private utilization of the historic site or historic resource located within an historic district in a manner compatible with the historical, archeological, architectural or cultural value of the historic site or historic district in which an historic resource is located; or
- (4) The proposal is necessary in order that unsafe conditions or health hazards be remedied; or
- (5) The proposal is necessary in order that the owner of the subject property not be deprived of reasonable use of the property or suffer undue hardship; or
- (6) In balancing the interests of the public in preserving the historic site or historic resource located within an historic district, with the interests of the public from the use and benefit of the alternative proposal, the general public welfare is better served by granting the permit.
- (c) It is not the intent of this chapter to limit new construction, alteration or repairs to any 1 period or architectural style.
- (d) In the case of an application for work on an historic resource located within an historic district, the commission shall be lenient in its judgment of plans for structures of little historical or design significance or for plans involving new construction, unless such plans would seriously impair the historic or architectural value of surrounding historic resources or would impair the character of the historic district. (Ord. No. 9-4, § 1; Ord. No. 11-59.)

Historic Preservation Commission Policy No. 20-01: ADDRESSING EMERGENCY CLIMATE MOBILIZATION THROUGH THE INSTALLATION OF ROOF-MOUNTED SOLAR PANELS

On December 5, 2017, the Montgomery Council adopted an Emergency Climate Mobilization resolution (Resolution No.: 18-974) which declared a climate emergency and charged the County Executive, Montgomery County Public Schools, and the Maryland-National Capital Park and Planning Commission to advise the Council on methods to reduce greenhouse gas emissions.

As a body established by the County Executive, it is incumbent on the Historic Preservation Commission (HPC) to undertake steps to achieve the goals of the Emergency Climate Mobilization resolution.

One method for reducing greenhouse gas emissions is to replace carbon-heavy methods of energy production, like coal and natural gas power plants, with renewable sources like wind and solar power. Current historic preservation best practice is to limit the locations solar panels may be installed to preserve the character of the building above all other considerations. Chapter 24A-8(b)(6) of County Code establishes a balancing test for approval of a HAWP where there is an apparent conflict between the desired impact on the historic resource compared to the public benefit of the proposal. Because the widespread use of solar panels, both for hot water and for electricity production, will reduce greenhouse gases in the county, it is the position of the HPC that solar panels may be installed on all roof elevations of historic sites or historic resources located within a historic district provided:

1. The identified preferred location (on the rear of the property, building additions, accessory structures, or ground-mounted arrays) is not feasible due to resource orientation or other site limitations and;

- 2. The roof is not either architecturally significant or a slate or tile roof unless it can be demonstrated that the solar array will be installed without damaging the historic character of the resource or historic fabric; and
- 3. A Historic Area Work Permit (HAWP) is required for all work referenced in this policy.

Now, THEREFORE:

WHEREAS, Historic Area Work Permit decisions are guided by the criteria in Section 24A, The Secretary of the Interior's Standards for Rehabilitation, and pertinent guidance from applicable master plan amendments and/or site or district-specific studies;

WHEREAS, The Secretary of the Interior's Standards for Rehabilitation as interpreted by the National Park Service limit the placement of rooftop solar panels under Standards 2, 9, and 10 to less conspicuous locations;

WHEREAS, the County Council has established a Climate Emergency;

WHEREAS, the Historic Preservation is a body established by the County Executive and County Council;

WHEREAS, Section 24-8(b)(6) states, "In balancing the interest of the public in preserving the historic site or historic resource located within an historic district, with the interests of the public from the use and benefit of the alternative proposal, the general public welfare is better served by granting the permit;"

WHEREAS, the widespread use of solar panels, both for hot water and for electricity production, will reduce greenhouse gases in the county, in accordance with the aims of the Emergency Climate Mobilization resolution (Resolution No.: 18-974), it shall be the policy of the Historic Preservation Commission that:

- 1. The preferred locations for solar panel installation(s) on a designated historic site or an historic resource located within an historic district is a) on the rear of the property, b) on non-historic building additions, c) on accessory structures, or d) in ground-mounted arrays;
- 2. If it is not feasible to install solar panels in one of the identified preferred locations due to resource orientation or other site limitations; and,
- 3. The roof is determined to be neither architecturally significant, nor a character-defining feature of the resource, nor is it a slate or tile roof, that unless it can be demonstrated that the solar array will be installed without damaging the historic character of the resource or historic fabric; then
- 4. The public welfare is better served by approving a Historic Area Work Permit for solar panels on all visible side or front roof slopes under Section 24A-8(b)(6).
- 5. A Historic Area Work Permit (HAWP) is required for all work referenced in this policy.

Secretary of the Interior's Standards for Rehabilitation:

The Secretary of the Interior defines rehabilitation as "the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features, which convey its historical, cultural, or architectural values." The *Standards* are as follows:

- 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.

STAFF DISCUSSION

The applicant proposes to install 81 roof-mounted solar panels at the subject property. The solar panels will be installed on the flat parapeted roof of the Education Building at the rear of the property.

Staff finds the proposal to be consistent with the Commission's solar policy. The proposed solar panels will be in a preferred location at the rear of the property, and, because the solar panels will be installed on a flat parapeted roof, they will not be visible from the public right-of-way. Additionally, the resource is a c. 1960s-70s Non-Contributing Resource, and the roof is neither architecturally significant, nor a character-defining feature of the resource, nor is it a slate or tile roof.

The proposal is not a major addition or alteration to the scale and massing that will affect the surrounding streetscape and/or landscape or impair the character of the historic district as a whole. Therefore, in accordance with the *Guidelines* for Non-Contributing Resources, the proposal should receive the most lenient level of design review, and most alterations should be approved as a matter of course.

In accordance with *Standards* #2 and #9, the proposal will not remove or alter character-defining features of the subject property or surrounding streetscape.

After full and fair consideration of the applicant's submission staff finds the proposal as being consistent with the Criteria for Issuance in Chapter 24A-8(b) 1 and 2, having found the proposal is consistent with the *Secretary of the Interior's Standards for Rehabilitation #2* and *#9*, HPC Policy No. 20-01, and *Takoma Park Historic District Guidelines* outlined above.

STAFF RECOMMENDATION

Staff recommends that the Commission approve the HAWP application under the Criteria for Issuance in Chapter 24A-8(b), (1), (2) & (d) having found that the proposal is consistent with the *Takoma Park Historic District Guidelines*, and therefore will not substantially alter the exterior features of the historic resource and is compatible in character with the district and the purposes of Chapter 24A;

and with the Secretary of the Interior's Standards for Rehabilitation #2 and #9;

and with HPC Policy 20-01;

and with the general condition that the applicant shall present the 3 permit sets of drawings, if applicable, to Historic Preservation Commission (HPC) staff for review and stamping prior to submission for the Montgomery County Department of Permitting Services (DPS) building permits;

and with the general condition that final project design details, not specifically delineated by the Commission, shall be approved by HPC staff or brought back to the Commission as a revised HAWP application at staff's discretion;

and with the general condition that the applicant shall notify the Historic Preservation Staff if they propose to make any alterations to the approved plans. Once the work is completed the applicant will contact the staff person assigned to this application at 301-563-3400 or michael.kyne@montgomeryplanning.org to schedule a follow-up site visit.

COMERY CO.		FOR STAFF HAWP#	ONLY: 917166
HISTORIC	PLICATION FOR AREA WORK F	R DATE ASSIG	NED
HISTORIO	C PRESERVATION COMMIS 301.563.3400	SION	
APPLICANT:			
Name:	E-mail:		
Address:	City:		Zip:
Daytime Phone:	Тах Ассо	unt No.:	
AGENT/CONTACT (if applicable):			
Name:	E-mail:		
Address:	City:		Zip:
Daytime Phone:	Contracto	or Registration No.:	
LOCATION OF BUILDING/PREMISE	MIHP # of Historic Property		
Is the Property Located within an His	toric District?Yes/Distric	t Name	
Is there an Historic Preservation/Lan map of the easement, and documen	d Trust/Environmental Easer tation from the Easement Ho	nent on the Propert older supporting this	y? If YES, include a application.
Are other Planning and/or Hearing Ex (Conditional Use, Variance, Record Pl supplemental information.	kaminer Approvals /Reviews at, etc.?) If YES, include info	Required as part of rmation on these re	this Application? views as
Building Number:	Street:		
Town/City:	Nearest Cross Street: _		
Lot: Block:	Subdivision: Pa	arcel:	
TYPE OF WORK PROPOSED: See the	e checklist on Page 4 to v	erify that all supp	orting items
be accepted for review. Check all t	hat apply:	Shed/Garage/	Accessory Structure
New Construction	Deck/Porch	Solar	
Addition	Fence	Tree removal/planting	
Demolition	Hardscape/Landscape	Window/Door	
Grading/Excavation	Roof	Other:	
I hereby certify that I have the autho	rity to make the foregoing a	pplication, that the a	application is correct
and accurate and that the construct	ion will comply with plans re	viewed and approve	d by all necessary
agencies and hereby acknowledge a	and accept this to be a condition	tion for the issuance	e of this permit.

Description of Property: Please describe the building and surrounding environment. Include information on significant structures, landscape features, or other significant features of the property:

Description of Work Proposed: Please give an overview of the work to be undertaken:

Work Item 1:			
Description of Current Condition:	Proposed Work:		
Work Item 2:			
Description of Current Condition:	Proposed Work:		

Proposed Work:

HISTORIC AREA WORK PERMIT CHECKLIST OF APPLICATION REQUIREMENTS

	Required Attachments						
Proposed Work	I. Written Description	2. Site Plan	3. Plans/ Elevations	4. Material Specifications	5. Photographs	6. Tree Survey	7. Property Owner Addresses
New Construction	*	*	*	*	*	*	*
Additions/ Alterations	*	*	*	*	*	*	*
Demolition	*	*	*		*		*
Deck/Porch	*	*	*	*	*	*	*
Fence/Wall	*	*	*	*	*	*	*
Driveway/ Parking Area	*	*		*	*	*	*
Grading/Exc avation/Land scaing	*	*		*	*	*	*
Tree Removal	*	*		*	*	*	*
Siding/ Roof Changes	*	*	*	*	*		*
Window/ Door Changes	*	*	*	*	*		*
Masonry Repair/ Repoint	*	*	*	*	*		*
Signs	*	*	*	*	*		*



COMPACT**FLAT S05**

AERODYNAMIC. STABLE. INTELLIGENT.

Compact and tested substructure for the single-sided stand-mounting of PV modules on flat roofs

The system, as part of the COMPACT**FLAT** product range, is an aerodynamic south-facing substructure for the fixing of framed PV modules on flat roofs. It is available at an incline of 5° and with different row spacing. No additional components are necessary for reducing the clearance between the modules. With the smallest row spacing, the amount of empty space is reduced considerably, and the system offers more installed modules – meaning more performance and yield – per unit area.

AEROCOMPACT®





The aerodynamic design boasts exceptional structural properties and requires considerably less ballast than other systems on the market. Due to the special "spring effect" of the feet, the substructure adjusts optimally to the conditions of the surface structure. Since the design is not rail-bound, water drainage is provided on all sides.

Like the COMPACT**FLAT S10+**, the COMPACT**FLAT S05** also has a 25-year warranty, has been wind tunnel-tested, TÜV-certified in line with UL 2703, and is supplied with a pre-installed building protection mat. With special loading tests, all variants were tested and approved by TÜV Rheinland in accordance with UL 2703, as well as a fire test in line with UL 1703. The wire management solution for the string-wiring of module rows is UL-certified and available as an accessory with the substructure.

The COMPACT**FLAT S05** is stored in our 3D engineering software AEROTOOL. The AEROCOMPACT[®] customer center is able to issue clear and competent project reports based on empirical data (wind load, snow load, structural analysis).

The COMPACT**FLAT S05** is delivered partly pre-assembled, including a newly developed building protection mat – with long-term durability testing.

This system version with ballast trays is primarily used in areas with high wind loads and on roofs with a low point-loading capacity. The key advantages of this installation version are the extra ballast which can be installed for each module on the one hand, and the even distribution of point loads on the roof surface on the other. The ballasttray can also be deployed if roof graveling is used as ballast. The gravel is then filled in the plate tray for weight.

With only three main components, the COMPACT**FLAT S05** achieves an exceptional price-performance ratio. In addition to the attractive system price, the simple installation and high transport density of the innovative system saves time and resources.

SO5 – 335 mm spacing





TECHNICAL DATA

Description	Aerodynamic installation system for the stand-mounting of framed PV modules on flat roofs.
Scope of use	On foil and bitumen roofs with and without heat insulation beneath the sealing, as well as on concrete roofs; can be adapted for gravel and green roofs upon request
Module dimensions	950–1,050 mm x 1,475–2,080 mm (width x length)
Installation angle	5°, unilateral
Row spacing	COMPACT FLAT S05 (15° internal shading angle): 335 mm COMPACT FLAT S05 (30° internal shading angle): 178 mm
Distance from the roof surface / floor surface	Approx. 60 mm; potentially less on gravel roof
Distance from roof edge	1,200 mm (less corner spacing upon request); roof areas F and G as per EN 1991-1-4 can be covered
Max. building height	25 m (adapted for taller buildings upon request)
Max. roof pitch	Up to 5° possible without roof anchors; above 5° only with roof anchors
Max. field size	12 x 10 rows; 120 modules
Min. field size	1 rows for every 2 modules
Wind load	Suction load up to 2.4 kN/m ²
Snow load	Pressure load of COMPACT FLAT S05 Standard up to 2.4 kN/m ² Pressure load of COMPACT FLAT S05 Alpin up to 4.4 kN/m ²
Design/stability verification	Software-supported based on wind tunnel analyses
On-site requirements	Sufficient structural load-bearing capacity of the roof structure and the building's supporting structure, as well as adequate compressive strength of the roof structure, must be ensured on site. The general terms and conditions, terms of warranty, and the user agreement apply.
Module approval	The list of approved modules is provided by AEROCOMPACT®; individual approvals through the module manufacturer
Components	Module clamps with grounding pins, flat-roof brackets, wind deflector plates, ballast stones; optional lateral plates, ballast trays, roof anchors
Materials	Bearing connecting parts made from aluminum EN AW 6060 T64; module clamps made from aluminum EN AW 6063 T66; screws made from stainless steel A2–70; wind deflector plates and ballast trays made from steel with aluminum–zinc coating; building protection mat made from polyester fleece





- Module clamps with integrated grounding pins
- > No roof penetration necessary
- Also suitable for roof edge areas
- Main structure produced from aluminum and stainless steel
- > Water drainage provided on all sides
- Optimum module ventilation
- > Pre-installed building protection mat
- > 700 kWp per truck or 40-foot container
- Minimum order quantity only 2 kWp

- Quickest installation: 1 kWp / 5 min. / 2 people
- Optimized wind suction openings
- > Low transport costs
- > Fire-tested as per UL 1703
- > TÜV-certified as per UL 2703
- Wind tunnel-tested
- > Engineered in Europe
- General building inspectorate approval applied for
- > 25 years product warranty



< Scan QR code to watch installation video

AEROCOMPACT®

Headquarter Europe

Aerocompact GmbH // Sonnenstraße 10 // 6822 Satteins, Austria Phone: +43 5524 22566 // E-mail: office@aerocompact.com www.aerocompact.com



PROPOSED PV ARRAY LOCATION

KEY FIRE SAFETY ZONE

SOLAR PANEL LAYOUT Scale: 1/8" =1'-0"

- NOTES: 1. THE SYSTEM SHALL INCLUDE [81] Canadian Solar CS6U-340M SOLAR MODULES.
- 2. AEROCOMPACT 5" WILL BE INSTALLED IN ACCORDANCE WITH AEROCOMPACT INSTALLATION MANUAL.
- 3. DIMENSIONS MARKED (*) ARE ALONG ROOF SLOPE.
- 4. REFER TO STRUCTURAL DRAWING FOR SECTIONS MARKED AND ADDITIONAL NOTES.







SolarEdge Three Phase Inverters for the 208V Grid for North America

SE9KUS / SE14.4KUS



C. NVERTER

The best choice for SolarEdge enabled systems

- Specifically designed to work with power optimizers
- Integrated arc fault protection for NEC 2011 690.11
- Rapid shutdown for NEC 2014 690.12
- Outdoor and indoor installation
- Built-in module-level monitoring
- Internet connection through Ethernet or Wireless
- Small, lightweight and easy to install on provided bracket
- Fixed voltage inverter, DC/AC conversion only
- Integrated Safety Switch

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solaredge

Three Phase Inverters for the 208V Grid for North America

SE9KUS / SE14.4KUS⁽¹⁾

	SE9KUS	SE14.4KUS	
OUTPUT			
Rated AC Power Output	9000	14400	VA
Maximum AC Power Output	9000	14400	VA
AC Output Line Connections	4-wire WYE (L1-L2-L3-	N) plus PE or 3 wire Delta	
AC Output Voltage Minimum-Nominal-			
Maximum ⁽²⁾ (L-N)	105-1	.20-132.5	Vac
AC Output Voltage Minimum-Nominal-	102	200.220	\/
Maximum ⁽²⁾ (L-L)	183-	208-229	Vac
AC Frequency Min-Nom-Max ⁽²⁾	- 59.3	60 - 60.5	Hz
Max. Continuous Output Current (per Phase)	25	40	A
GFDI Threshold		1	A
Utility Monitoring, Islanding Protection,			
Country Configurable Set Points		Yes	
INPUT			
Maximum DC Power (Module STC)	12150	19400	W
Transformer-less, Ungrounded		Yes	
Maximum Input Voltage DC to Gnd	250	300	Vdc
Maximum Input Voltage DC+ to DC-	500	600	Vdc
Nominal Input Voltage DC to Gnd		200	Vdc
Nominal Input Voltage DC+ to DC-		400	Vdc
Maximum Input Current	26.5	38	Adc
Max. Input Short Circuit Current		45	Adc
Reverse-Polarity Protection		Yes	
Ground-Fault Isolation Detection	1MO Sensitivity	350kO Sensitivity ⁽³⁾	• •
CEC Weighted Efficiency	96.5	97	%
Night-time Power Consumption	< 3	< 4	W
ADDITIONAL FEATURES			
Supported Communication Interfaces	RS485 Etherne	t ZigBee (ontional)	
		Automatic Ranid Shutdown	
Rapid Shutdown – NEC 2014 690.12	Manual Rapid Shutdown ⁽⁴⁾	upon AC Grid Disconnect ⁽⁵⁾	
STANDARD COMPLIANCE			
Safety	UI 1741 UI 1699	B UI 1998 CSA 22 2	
Grid Connection Standards	IFF	F1547	
Emissions	FCC par	rt15 class B	
INSTALLATION SPECIFICATIONS			
AC output conduit size / AWG range	3/4" minim	um / 12-6 AWG	
DC input conduit size / AWG range	3///" minim	um / 12-6 AWG	• •
Number of DC inputs	2 nairs	3 nairs (with fuses on plus & minus) ⁽⁶⁾	
Dimensions (HyWyD)	2 pans 21 y 12 5 y 10 5	5 / 5/0 x 315 x 260	in/mm
Dimensions with Safety Switch (HyWyD)	21 × 12.5 × 10.	5 / 775 v 215 v 260	in/mm
Weight	72 2 / 22 2	00 5 / 15	
Weight with Safaty Switch	707/262	106 / 49	
	1.7.1 / 30.2 Fana /usa	100 / 40	
Noise	rails (user		
NUISE	UC >	<pre>>>></pre>	
	-40 to +14	+U / -4U IU +DU	.
		IVIA ON	

⁽¹⁾ For 277/480V inverters refer to: <u>http://www.solaredge.com/files/pdfs/products/inverters/se-three-phase-us-inverter-datasheet.pdf</u>
⁽²⁾ For other regional settings please contact SolarEdge support
⁽³⁾ Where permitted by local regulations
⁽⁴⁾ With installation of rapid shutdown kit; contact SolarEdge for kit P/N

^(a) With installation of rapid shutdown kt, contact solar cup, to ist contact solar cup. The shutdown set of th



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Power Optimizer Frame-Mounted Module Add-On for Commercial Installations for North America



Fast mount power optimizers with module-level optimization

- Quicker installation Power optimizers can be mounted in advance saving installation time
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of modules mismatch-loss, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization

- Next generation maintenance with module level monitoring
- Compliant with arc fault protection and rapid shutdown NEC requirements (when installed as part of the SolarEdge system)
- Module-level voltage shutdown for installer and firefighter safety



/ Power Optimizer

Frame-Mounted Module Add-On for Commercial Installations for North America P730

Optimizer model (typical module compatibilty)	P730 ⁽¹⁾ (for 2 x high power 72-cell modules)	
INPUT		
Rated Input DC Power ⁽²⁾	730	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	125	Vdc
MPPT Operating Range	12.5 - 105	Vdc
Maximum Short Circuit Current (Isc)	11	Adc
Maximum DC Input Current	13.75	Adc
Maximum Efficiency	99.5	%
Weighted Efficiency	98.6	%
Overvoltage Category	П	
OUTPUT DURING OPERATION (POWER	OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)	
Maximum Output Current	15	Adc
Maximum Output Voltage	85	Vdc
OUTPUT DURING STANDBY (POWER OPT	IMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OF	FF)
Safety Output Voltage per Power Optimizer	1 ± 0.1	Vdc
STANDARD COMPLIANCE		
Photovoltaic Rapid Shutdown System	NEC 2014	
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3	
Safety	IEC62109-1 (class II safety)	
Material	UL94 V-0, UV Resistant	
RoHS	Yes	
INSTALLATION SPECIFICATIONS		
Compatible SolarEdge Inverters	Three phase inverters	
Maximum Allowed System Voltage	1000	Vdc
Dimensions (W x L x H)	139 x 165 x 62 / 5.5 x 6.5 x 2.4	mm / in
Weight (including cables)	1185 / 2.6	gr / lb
Input Connector	MC4 ⁽³⁾	
Input Wire Length	0.16 / 0.52	m / ft
Output Wire Type / Connector	Double Insulated / MC4	
Output Wire Length	0.16 / 0.52	m / ft
Operating Temperature Range ⁽⁴⁾	-40 - +85 / -40 - +185	°C / °F
Protection Rating	IP68 / NEMA6P	
Relative Humidity	0 - 100	%
	•	

⁽¹⁾ P730 replaced the P700. They can be used interchangeably and can be connected in the same sring.

⁽²⁾ Rated power of the module at STC will not exceed the optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed. ⁽³⁾ For other connector types please refer to: https://www.solaredge.com/sites/default/files/optimizer-input-connector-compatibility.pdf

(4) For ambient temperature above +70°C / +158°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Application Note for more details.

PV SYSTEM DESIGN USING A SOLAREDGE INVERTER ⁽⁵⁾⁽⁶⁾	THREE PHASE FOR 208V GRID	THREE PHASE FOR 277/480V GRID	
Minimum String Length (Power Optimizers)	8	14	
Minimum String Length (PV Modules) ⁽⁷⁾	16	27	
Maximum String Length (Power Optimizers)	30		
Maximum String Length (PV Modules) ⁽⁷⁾	60		
Maximum Power per String	6000 ⁽⁸⁾	12750 ⁽⁹⁾	W
Parallel Strings of Different Lengths or Orientations	Yes		

⁶ It is not allowed to mix P730 with P320/P340/P370/P400/P405/P505 in one string.
⁶ In a case of odd number of PV Modules in one string it is allowed to install one P700/P730 power optimizer connected to one PV Module.
⁷ P700 and P730 design with three phase 208V inverters is limited. Use the SolarEdge Designer for verification.
⁸ For 208V grid: It is allowed to install up to 6,500W per string when 3 strings are connected to the inverter (when using three phase inverters for the inverter (when using three phase inverters).

with synergy technology – three strings per unit) and when the maximum power difference between the strings is up to 1,000W. (9) For 277/480V grid: It is allowed to install up to 15,000W per string when 3 strings are connected to the inverter

(when using three phase inverters with synergy technology – three strings per unit) and when the maximum power difference between the strings is up to 2,000W.



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