COMPACTGROUND G15/20 NEW

PROJECT REPORT

Robert_Atkinson_G15

Ground mount

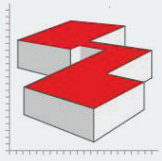
7/15/2022

www.aerocompact.com

CONTENTS

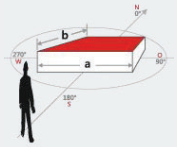
ROOF [GROUND MOUNT]

Building height h [ft]	**0**
Slope of roof [°]	**0**
Roofing	**Ground mount**
Product Type:	**COMPACTGROUND G15/20 NEW**
System alignment [°]	**180**



Custom(Elev.)

System alignment [°]*



SNOW LOAD ASCE 7-10

Snow load (psf)	**20**
Ground Snow Load (psf)	**20**
Exposure Factor:	**0.90**
Thermal Factor:	**1.20**

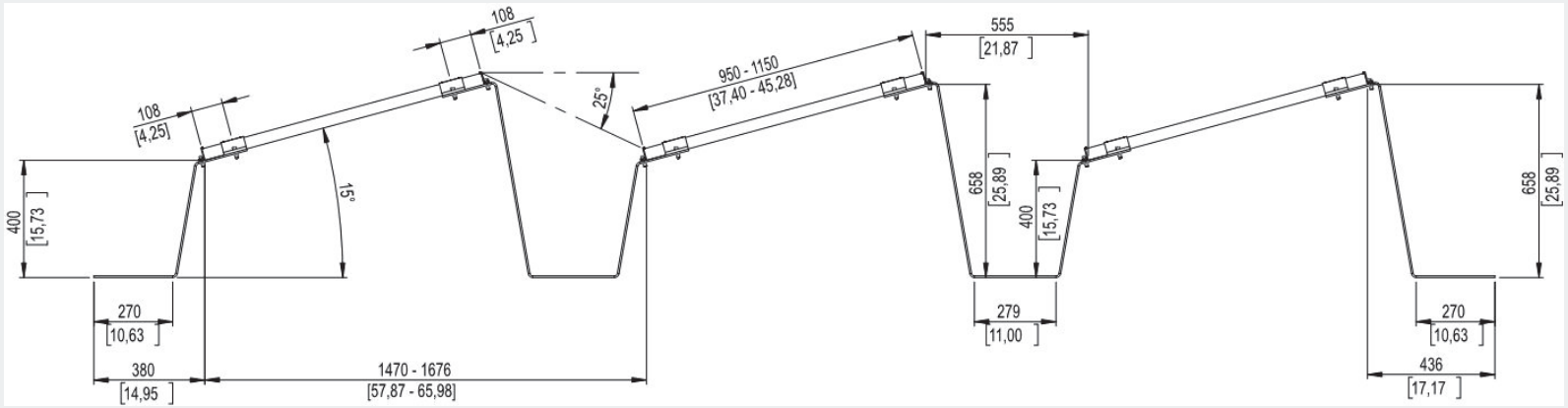
WIND LOAD ASCE 7-10

Wind load (psf)	**20.37**
Wind speed (mph)	**105**
Exposure category	**Exp. C**
Standard	**ASCE 7-10**
Risk Category:	**I**

PV-MODULE [GROUND MOUNT]

Manufacturer:	**Mission Solar Energy, LLC**
Name	**MSE345SX5T**
Width [mm]:	**1054**
Height [mm]:	**1748**
Thickness [mm]:	**40**
Framing:	**Aluminum**
Weight (lb)	**44.754**
Nominal Power [Watt]:	**345**
Module Type:	**Monocrystalline**
Installation:	**On Short Side**
Frame color	**Aluminum**
Temperature coefficient [%/°C]:	**-0.361**
Efficiency STC:	**0.187**
Output current MPP - STC [A]:	**10.34**
Output voltage MPP - STC [V]:	**33.37**
Short circuit current [A]:	**10.92**
Open circuit voltage [V]:	**41**
Temperature coefficient Current [%/K]:	**0.039**
Temperature coefficient Voltage [%/K]:	**-0.262**
Galvanic seperation required:	**No**

RACKING PARAMETER [GROUND MOUNT]

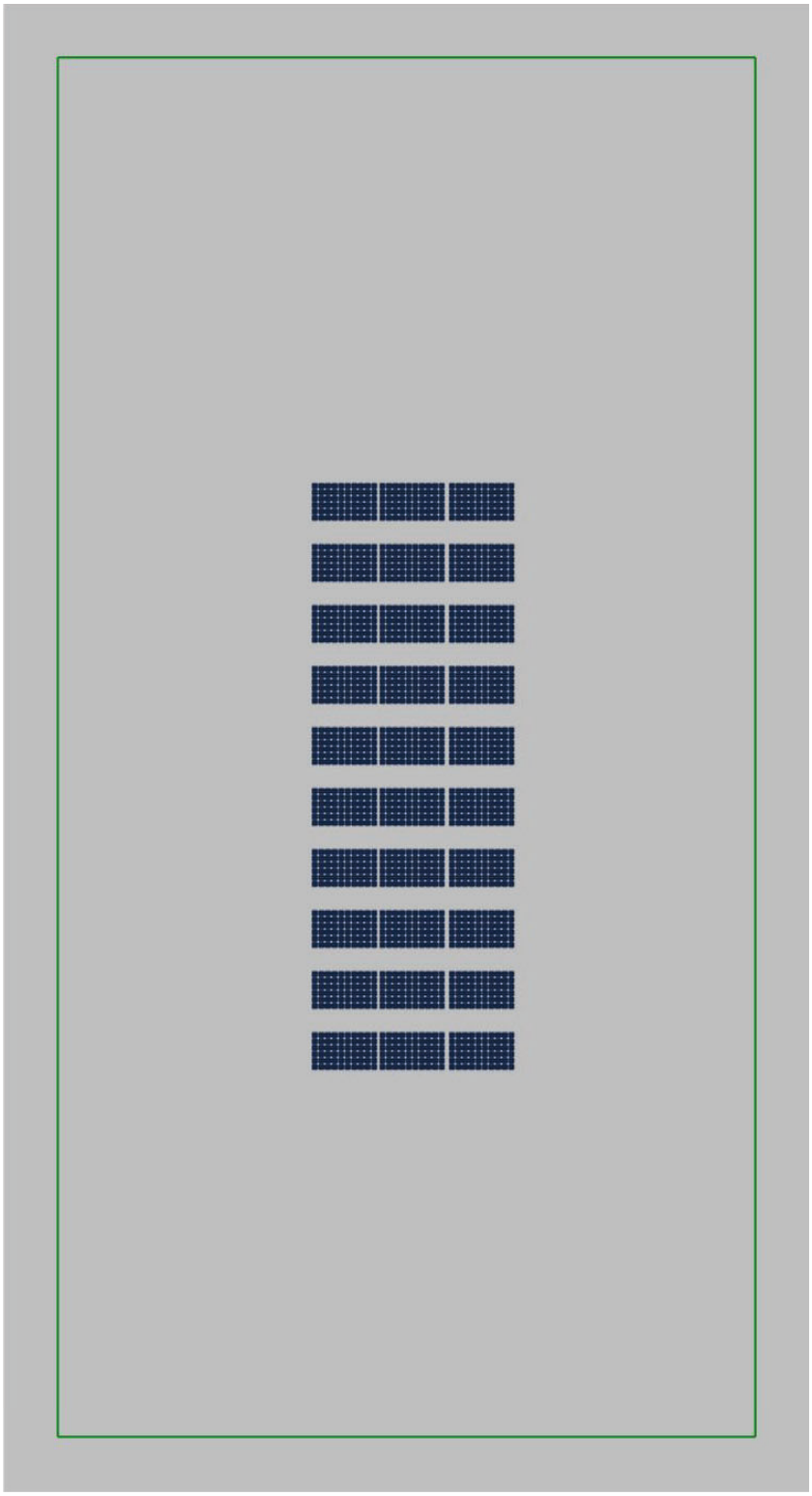


Bracket tilt α [°]:	**15**
Inter-row spacing	**21.85 in**
Friction Constant μ	**0.5**

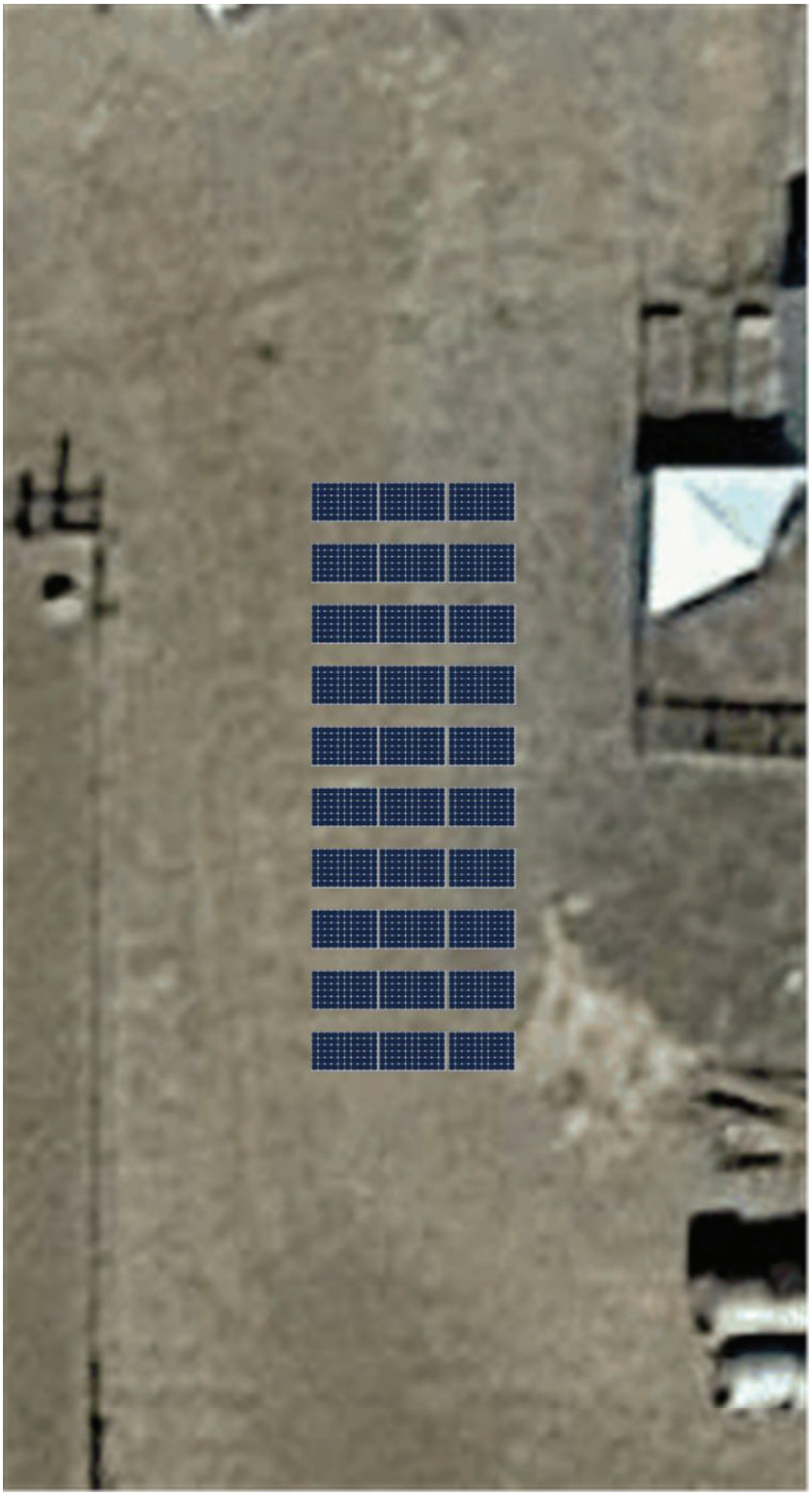
Suggested friction constants need to be checked by the installer/customer (wet and dry testing). In case the onsite testing results in a lower friction constant, the latter must be entered here for the static load calculation. Friction constants suggested for flat roofs are based on tests on typical roofing foils carried out by Aerocompact in cooperation with TÜV Rheinland. Friction constants suggested for other surfaces are based on tests carried out by Aerocompact in addition to the former. Similar surfaces made up of comparable materials may show diverging friction constants.

Ballast block [kg]	**32 lbs**
Height H	**4 in**
Length B	**16 in**
Width T	**8 in**
Distance to roof edge	**55 in**

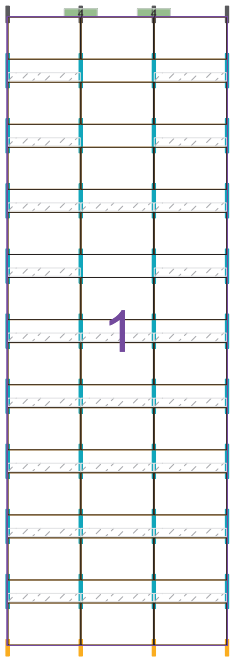
POSITION [GROUND MOUNT]



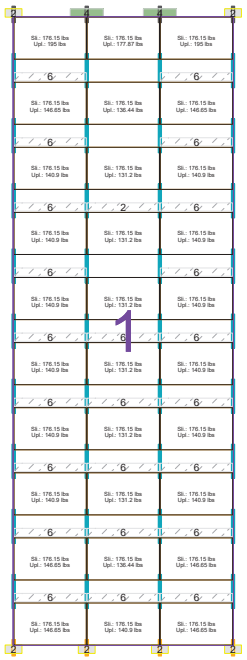
DISPOSITION - GOOGLE MAPS [GROUND MOUNT]



INSTALLATION-PLAN [GROUND MOUNT]



STATIC INFORMATION: BALLASTING [GROUND MOUNT]



∑Total Upl.: 4,339.51 lbs
∑Total Sli.: 5,284.48 lbs
∑Total Ballast blocks 160 x 32 lbs = (5,120 lbs)
∑Total ballast components 191.98 lbs

SUMMARY OF LOAD PARAMETERS [GROUND MOUNT]

Snow load	**20 psf**
Wind load	**20.37 psf**
Friction Constant μ	**0.5**
Load factor "uplift"	**0.6**
Load factor "sliding"	**0.6**
Load factor dead load	**0.6**
Weight per ballast block	**32 lbs**
Number of ballast blocks:	**160**
System surface area	**863.16 ft²**
Roof area	**8,584.2 ft²**
Total ballast weight	**5,120 lbs**
Weight Module/Rack	**1,766.08 lbs**
Total System weight	**6,886.08 lbs**
Surface load on system area	**7.98 psf**
Surface load on roof	**0.8 psf**
Max surface load on system area	**12.96 psf**

MATERIAL LIST [GROUND MOUNT]

Image	Part number	Description	Pck	Total Nr.	Required Total	Weight (lb)	Total weight (lb)	Length (in)	Total length (in)
	000032	Stone 32	1	**160**	**160**	32.000	5119.998	--	--
	800656	Socket nut M8x16	1	**50**	**38**	0.026	1.005	--	--
	701902	CLP-M Cable-tie clip module	100	**1**	**60**	0.004	0.265	--	--
	704015	GL-B Grounding lug for bracket	1	**1**	**1**	0.093	0.093	--	--
	706000-880	BT-880 Ballast tray short 880mm (34.6")	1	**2**	**2**	3.333	6.667	--	--
	706001-1800	BT-1800 Ballast tray long 1800mm (70.9")	1	**24**	**24**	6.881	165.135	--	--
	820302-30-50VP2	CLMG10 Middle clamp ground mount 30-50mm	10	**4**	**40**	0.181	7.231	--	--
	82030540	CLEG10-40 End clamp ground mount 40mm	10	**12**	**120**	0.137	16.402	--	--
	821515	G15FB Front bracket G15	1	**4**	**4**	2.255	9.021	--	--
	821525	G15EB End bracket G15	1	**4**	**4**	3.031	12.125	--	--
	821539	G15CNS Connector G15/25	1	**36**	**36**	4.773	171.828	--	--
	823002-28	Flat washer M8, D:28	100	**1**	**38**	0.024	0.922	--	--
	823007	CB8x20 carriage bolt M8x20	100	**1**	**38**	0.031	1.173	--	--
							5511.87		0

DISCLAIMER/OTHER LIABILITY

1. This current order specifies expressly no review of any information provided by Principal. Any pertinent review must be ordered expressly and separately in writing.

2. The current report is based on the documents or information and data received by Principal.

3. Therefore, this report can only be as good as the quality of the information of the Principal permits.

4. For these reasons, no liability whatsoever and no warranty for errors based on untrue information of the Principal can be assumed despite any applied due diligence. However, any liability toward third parties is excluded.

5. Contractor (Aerocompact) shall be liable toward Principal only in cases of gross negligence (intent or gross negligence) except for personal injuries. This applies equally to damages to third parties engaged by Contractor.

6. Principal is only entitled to file a claim for damages within six months from the date the damaged party gained knowledge of the damage but no later than within two years following the incident on which the claim is based.

7. Principal has the burden of proof, i.e. Principal must show that the damage is caused by Principal.

8. The structural design encompasses the racking (substructure) only and does not include the PV modules for which approval by the manufacturer for the Aerocompact system in question is recommended.
Anchor point attachments for solar flat roof solutions of Aerocompact are designed for Ultimate Limit States (strength) only.
For the TR rail system, roof-parallel forces are passed to the roof beams via the fixations of the sandwich panels. Their load path does not include the fixations of the TR rail system. The sheet thickness of the roof covering must not be lower than 0.5mm in countries where the Eurocode governs the design of buildings and structures. Elsewhere, a different minimum for the permissible sheet thickness may apply.
If not edited by the AeroTOOL user specific to the project, the default values for the Effective screw-in depth using CompactPITCH XW are 67mm with M10 hanger bolts and 100mm with M12 hanger bolts.
Except for the TR rail system, all Aerocompact system solutions are designed assuming a non-flexible, rigid roof covering.
The structural check of the roof covering and of the roof support structure is out of scope of the present design.
If the structural design includes utilizations exceeding 100%, the overall safety of the structure as required by the governing code is reduced. In a worst-case scenario, exceeding the permitted utilization of 100% may cause failure of the fixations of the mounting system.

9. The Supplier is not responsible for the project-related structural soundness of the roof structure and the professional realization and installation.

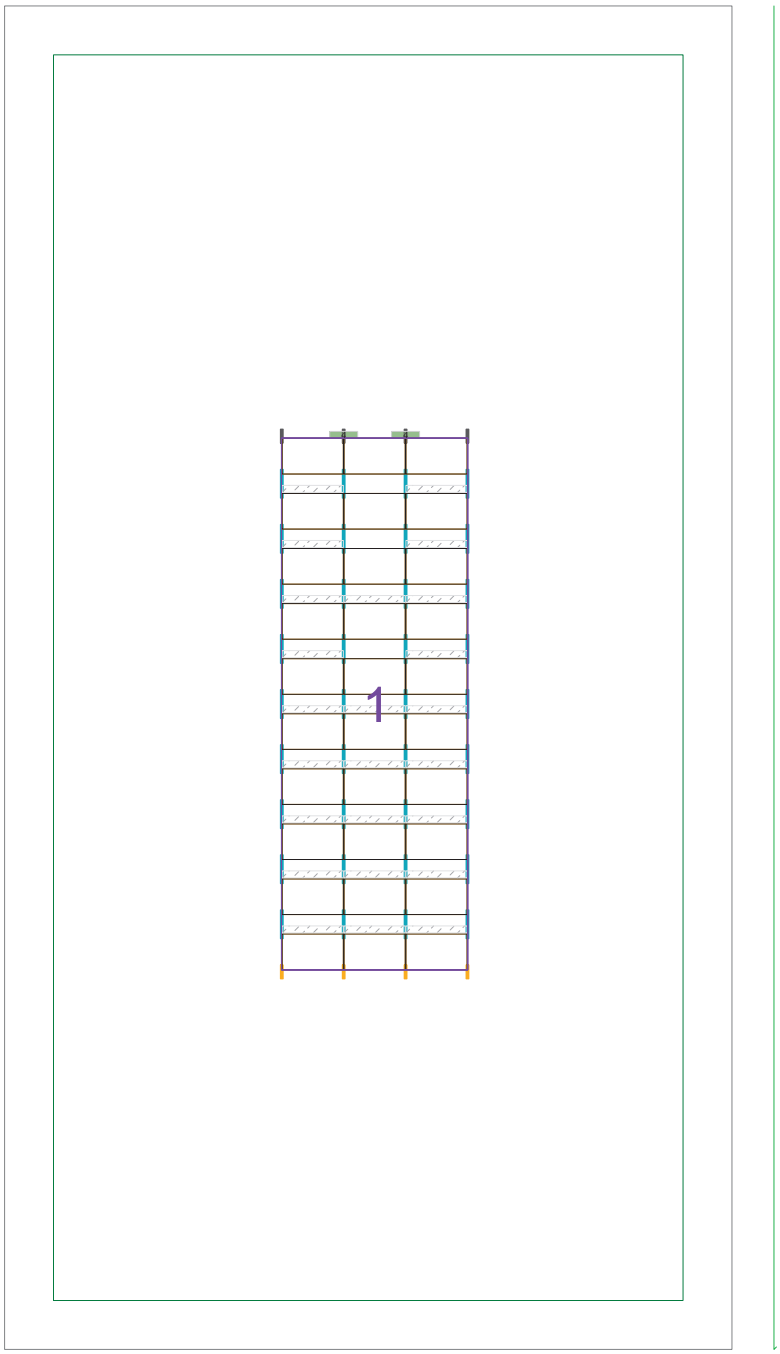
10. The technical specifications are an integral part of the product. AEROCOMPACT® shall not be liable for damages caused by non-compliance with the installation instructions and particularly with the safety information and from the improper use of the products. The current Terms and Conditions, Warranty Terms and Conditions and Installation Instructions will be provided on www.aerocompact.com .

11. If the roof gravel is located directly on top of the water-bearing roof membrane, Aerocompact® cannot be placed on the gravel layer. In this case the gravel must be removed in the area of the Aerocompact® bracket.

12. The required compressive strength of the roof insulation needs to be examined. An approval from the roof-membrane manufacturer is required.

13. Photovoltaic flat roof systems are not maintenance free. Maintenance, particular the right postion of the ballast blocks and the building protection pads should be conducted annually. For exceptional high-wind events, we recommend to do a Maintenance right after the storm event.

14. The place of jurisdiction is North Carolina.



- G15CNS Connector G15/25
- G15EB End bracket G15
- G15FB Front bracket G15
- CompactGroundV1_BallastWanneKlein
- CompactGroundV1_BallastWanne1800

Department	Tech. Reference	Created by	Approved by	
-	-	Hall	-	1:8

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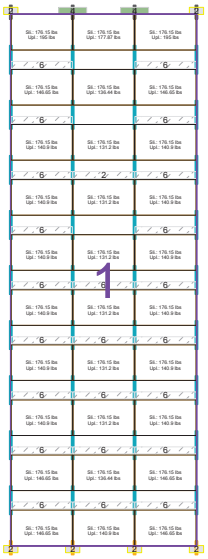

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