

PV-ezRack[®] SolarTripod Single/Adjustable and Double

Code-Compliant Planning and Installation Guide V3.0
Complying with AS/NZS1170.2-2011 AMDT 2-2016



Introduction

1. Introduction

Clenergy PV-ezRack SolarTripod is suitable for home, commercial, flat roof and even for large scale solar installations. SolarTripod divides 2 solutions, single row and double rows in portrait of modules. The advantage of SolarTripod is the pre-assembly fixed angle brackets; it reduces the time and labour in installation.

Please review this manual thoroughly before installing PV-ezRack[®] SolarTripod[™]. This manual provides

- 1) Supporting documentation for building permit applications relating to PV-ezRack[®] SolarTripod[™] Universal PV Module Mounting System;
- 2) Planning and installation instructions.

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The PV-ezRack[®] SolarTripod[™] parts, when installed in accordance with this guide, will be structurally sound and will meet the AS/NZS1170.2:2011 Amdt 2- 2016 standard. During installation, and especially when working on the roof, please comply with the appropriate Occupational Health and Safety regulations. Please also pay attention to any other relevant State or Federal regulations.

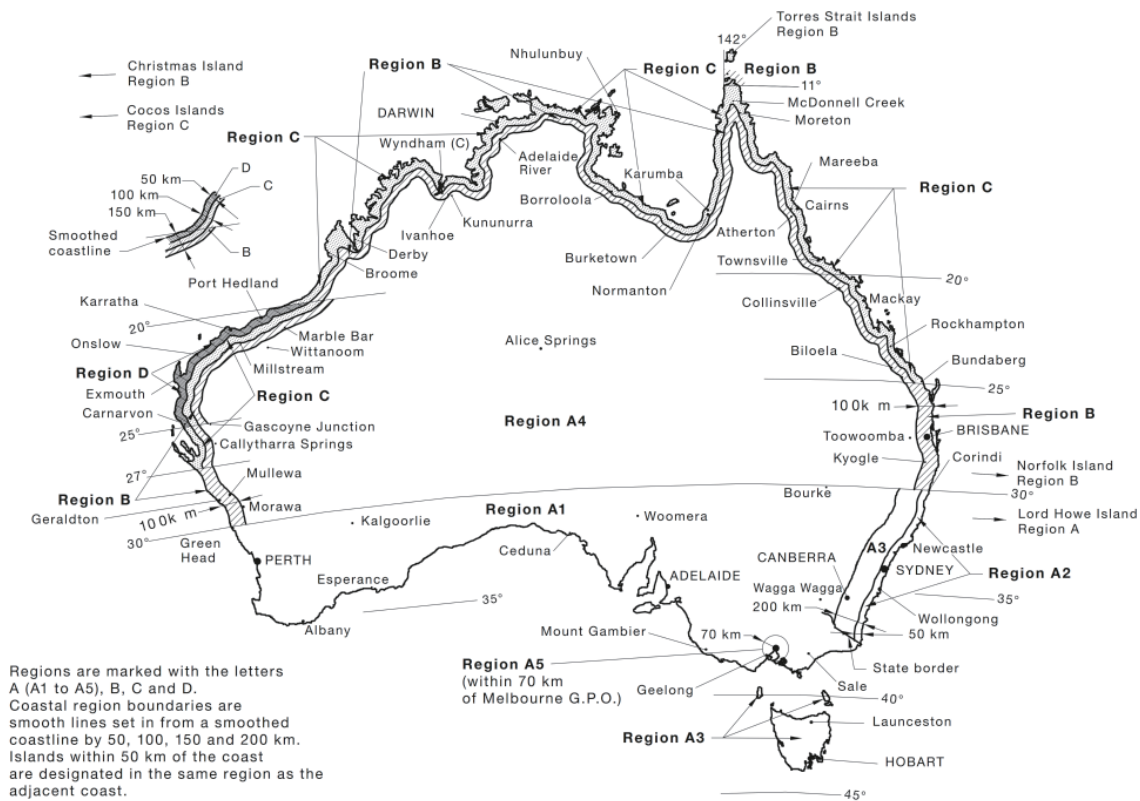
Please check that you are using the latest version of the Installation Manual, which you can do by contacting Clenergy Australia via email on sales@clenergy.com.au, or contacting your local distributor in Australia.

The installer is solely responsible for:

- Complying with all applicable local or national building codes, including any that may supersede this manual;
- Ensuring that PV-ezRack and other products are appropriate for the particular installation and the installation environment;
- Ensuring that the roof, its rafters/purlins, connections, and other structural support members can support the array under building live load conditions;
- Use only PV-ezRack parts as specified in this document (substitution of any PV-ezRack part may void the warranty and invalidate the letter of certification);
- Recycling: Recycle: according to the local relative statute;
- Ensuring that the roof, its rafters/purlins, connections, and other structural support members can support the array under building live load conditions;
- Ensuring that screws to fix interfaces have adequate pullout strength and shear capacities as installed;
- Maintaining the waterproof integrity of the roof, including selection of appropriate flashing;
- Verifying the compatibility of the installation considering preventing electrochemical corrosion between dissimilar metals. This may occur between structures and the building and also between structures, fasteners and PV modules, as detailed in AS/NZS 5033: 2014.

2. Planning

2.1 Determine the wind region of your installation site



Region Definition:

Wind regions are pre-defined for the whole of Australia by the Australian Standard 1170.2. The Wind Region is an independent factor of surrounding topography or buildings.

- Most of Australia is designated Region A which indicates a Regional Wind Velocity of 43 m/s with wind average recurrence of 200 years.
- Some areas are designated Region B (52 m/s). Local authorities will advise if this applies in your area.

- Region C areas (64 m/s) are generally referred to as Cyclonic and are generally limited to northern coastal areas. Most Region C zones end 100km inland.
- Region D (79 m/s) is Australia's most extreme Cyclonic Region, located between the town of Carnarvon and Pardoo Station in Western Australia.

2.2 Determine the Terrain Category

You will need to determine the terrain category to ensure the installation meets the required standard.

Terrain Category 1 (TC1) – Very exposed open terrain with few or no obstructions and enclosed, limited-sized water surfaces at serviceability and ultimate wind speeds in all wind regions, e.g. flat, treeless, poorly grassed plains; rivers, canals and lakes; and enclosed bays extending less than 10km in the wind direction.

Terrain Category 1.5 (TC1.5) – Open water surfaces subjected to shoaling waves at serviceability and ultimate wind speeds in all wind regions, e.g. near-shore ocean water; larger unenclosed bays on seas and oceans; lakes; and enclosed bays extending greater than 10km in the wind direction. The terrain height multipliers for this terrain category shall be obtained by the linear interpolation between the values for the TC1 and TC2.

Terrain Category 2 (TC2) – Open terrain, including grassland, with well-scattered obstructions having heights generally from 1.5m to 5m, with no more than two obstructions per hectare, e.g. farmland and cleared subdivisions with isolated trees and uncut grass.

Terrain Category 2.5 (TC2.5) – Terrain with a few trees or isolated obstructions. This category is intermediate between TC2 and TC3 and represents the terrain in developing outer urban areas with scattered houses, or larger acreage developments with fewer than ten buildings per hectare. The terrain-height multipliers for this terrain category shall be obtained by linear interpolation between the values for the TC2 and TC3.

Terrain Category 3 (TC3) – Terrain with numerous closely spaced obstructions having heights generally from 3m to 10m. The minimum density of obstructions shall be at least the equivalent of 10 house sized obstructions per hectare, e.g. suburban housing or light industrial estates.

Terrain Category 4 (TC4) – Terrain with numerous larger, high (10m to 30m tall) and closely-spaced buildings, such as large city centers and well-developed industrial complexes.

If your installation site is not at TC 2, 2.5 or 3, please contact Clenergy to obtain a project specific engineering certificate to support your installation.

2.3 Determine the Height of the Installation Site

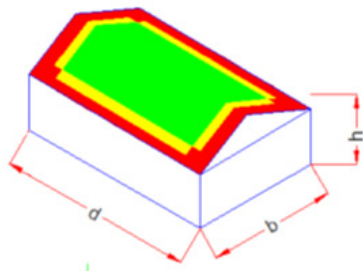
This certification document provides sufficient information for the PV-ezRack® SolarTripod™ system installation up to heights of 20 meters. If your installation site is more than 20 meters high, please contact Clenergy to obtain project specific engineering certificate to support your installation.

2.4 Determine Roof slope

PV-ezRack[®] SolarTripod[™] system is certified to use for roof slopes up to 10°. If your installation site is more than 10°, please contact Clenergy to obtain project specific engineering certificate to support your installation.

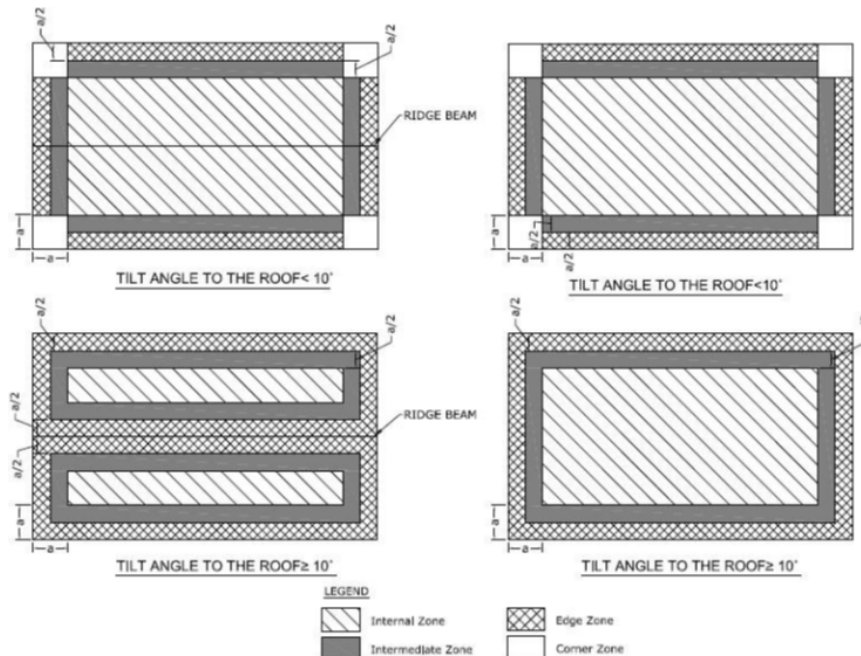
2.5 Determine the Installation Area of Roof

On pitched roof, there are four different roof zones for installation. See the steps below to determine area of each zone.



- Step 1: Determine building height, width and length;
- Step 2: Multiply the width of the building by 0.2;
- Step 3: Multiply the length of the building by 0.2;
- Step 4: Determine lowest value between: (height of the building) and $0.2 \times \text{length of the building}$ and $0.2 \times \text{width of the building}$;
- Step 5: The lowest value in step 4, equates to a.

In the figure above h= height, b =width and d= length of the building.



2.6 Determine the Maximum Rail Support Spacing

Please refer to the Certification Letter and Spacing Table. If a project specific Certification Letter has been provided, please refer to the support spacing in this letter.

2.7 Verify Maximum Rail End Overhang

Rail end overhang should be not over 40% of the Tripod spacing. For example, if the Tripod spacing is 1500mm, the Rail end overhang can be up to 600mm only.

3. Tools and Components

3.1 Tools

Tools



Screw Driver (maximum torque $\geq 34\text{N}\cdot\text{m}$)



6mm Allen Key



14mm Open Spanner



5m Tape



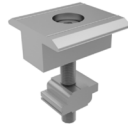
String & Marker Pen

3.2 Components

Component list



ER-EC-ST
End Clamp



ER-IC-ST
Inter Clamp



ER-RC-T/G
Rail Clamp for T-Rail



ER-R-T50
T-Rail 50mm



ER-SP-T50
Splice for T-50 Rail



ER-S-TRI/S15-30
ER-S-TRI/S30-AU
Tripod Support
(single or adjustable)



ER-S-TRI30-D3000
Tripod Double Support

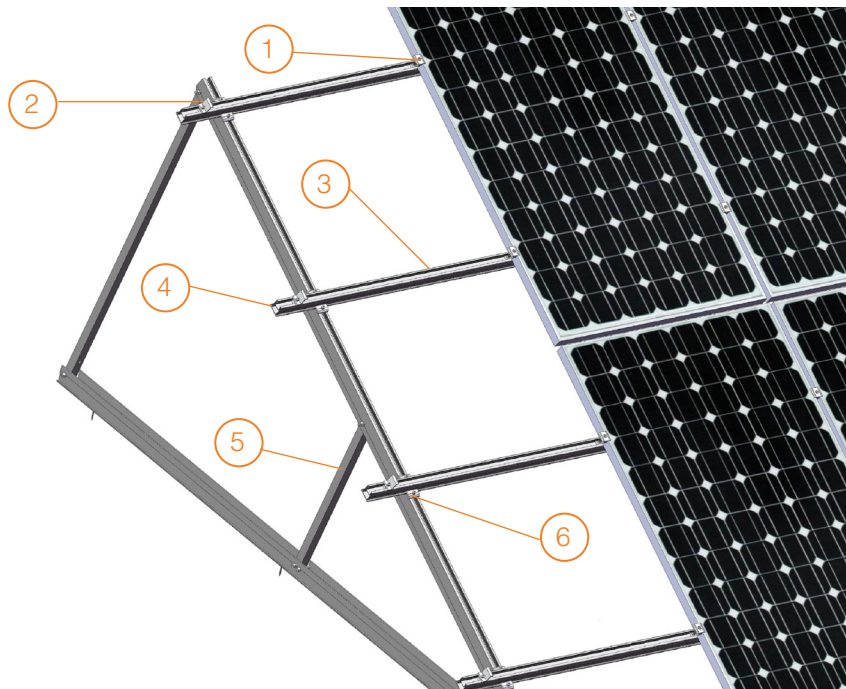


ER-AP-TRI/01
Screws and EPDM
rubber Accessory
package

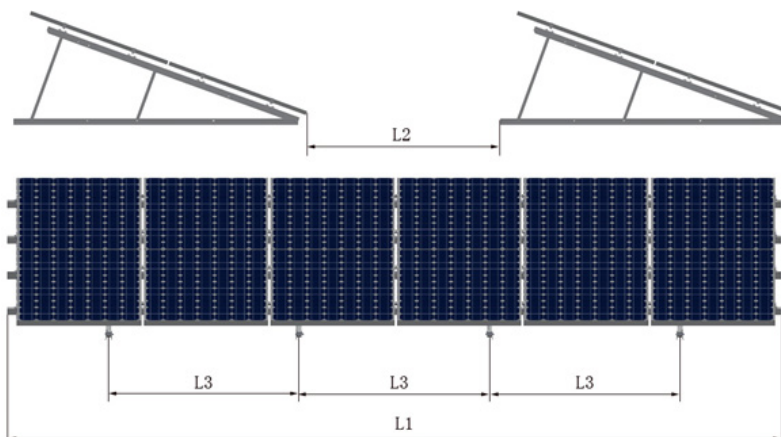
System Overview

4. System Overview

4.1 Overview of PV-ezRack® SolarTripod Single/Adjustable and Double



- ① Inter Clamp ② End Clamp ③ T-Rail 50mm ④ Splice for T-50 Rail ⑤ Tripod Support
⑥ Rail Clamp for T-Rail



As the drawing above, mounting details are as follow:

- (1) Module orientation: portrait.
- (2) Length of rail in the same row: $L1 = \text{Number of modules per row} \times (\text{module width} + 18\text{mm}) + 32\text{mm}$.
- (3) Distance between the two rows: L2 must be determine based on the location to avoid shading.
- (4) Distance between the two support Tripod: L3 (refer to the Certification Letter).

4.2 Precautionary Measures for Stainless-Steel Fastener Installation

Improper operation may lead to the deadlock of bolts and nuts. Follow the steps below to reduce this risk:

4.2.1 Reduce the friction coefficient

- (1) Ensure that the thread surface is clean (no dirt or contaminant).
- (2) Apply lubricant (grease or 40# engine oil) to fasteners prior to tightening to avoid galling or seizing in the threads.

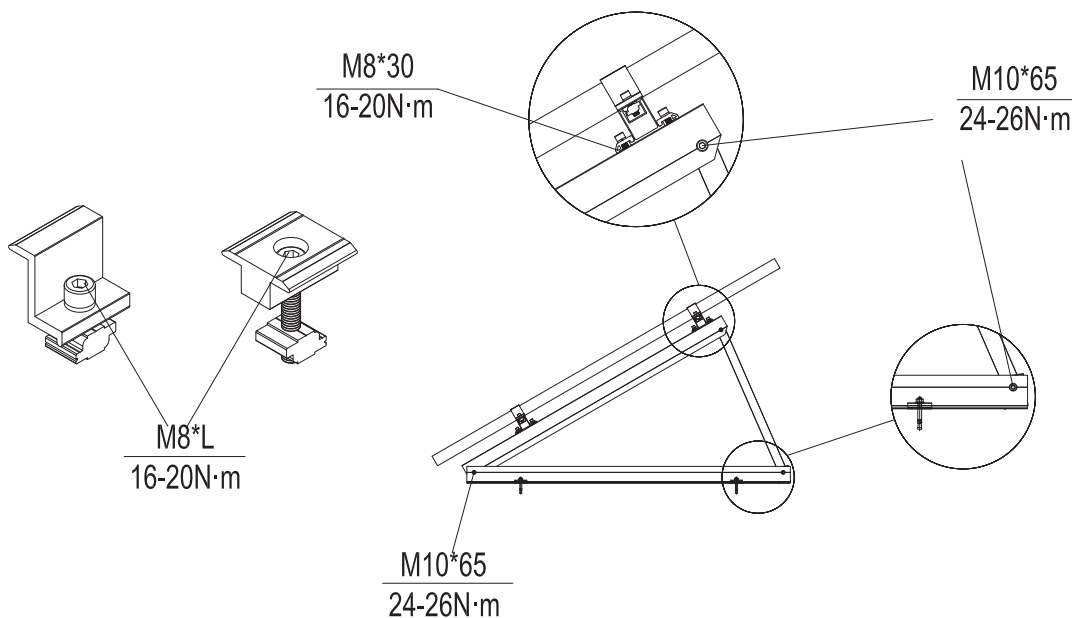
4.2.2 General installation instructions

- (1) Apply force to fasteners in the direction of thread.
- (2) Apply force uniformly to maintain required torque.
- (3) Professional tools and tool belts are recommended.
- (4) Avoid using electric tools for final tightening.
- (5) Avoid working at high temperatures.

4.2.3 Safe Torques

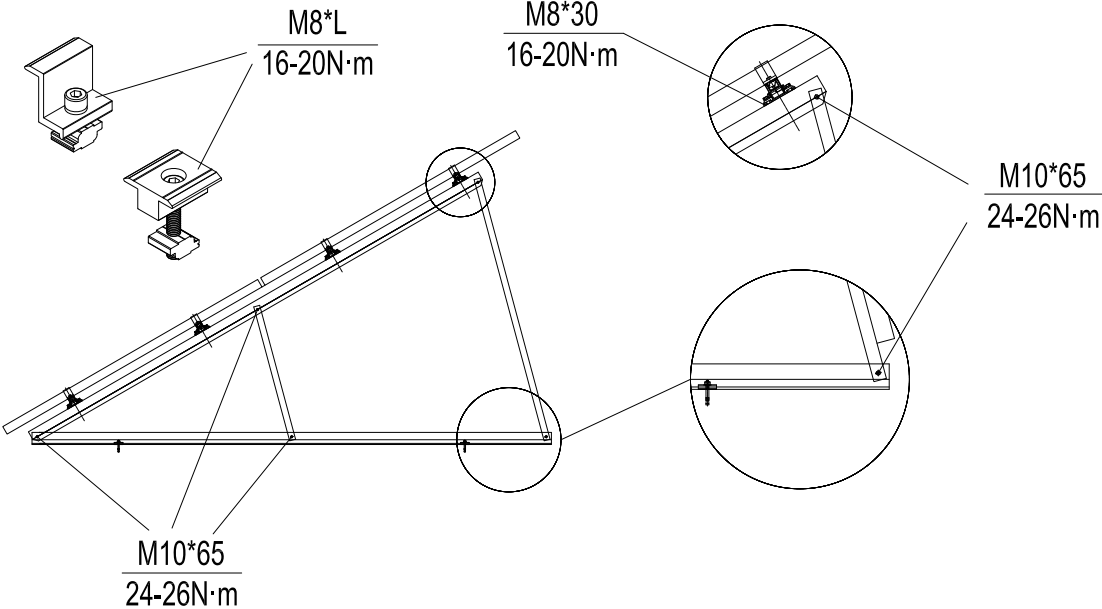
Please refer to safe torques defined in this guide as shown in the figure below. If power tools are required, Clenergy recommends the use of low speed only. High speed and impact drivers increase the risk of bolt galling (deadlock). If deadlock occurs and you need to cut fasteners, please make sure that there is no load on the fastener before you cut it. Avoid damaging the anodized or galvanized surfaces.

-Single Tripod

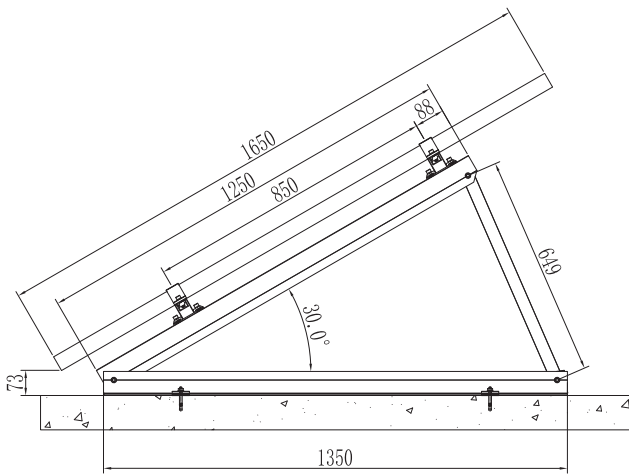


System Overview

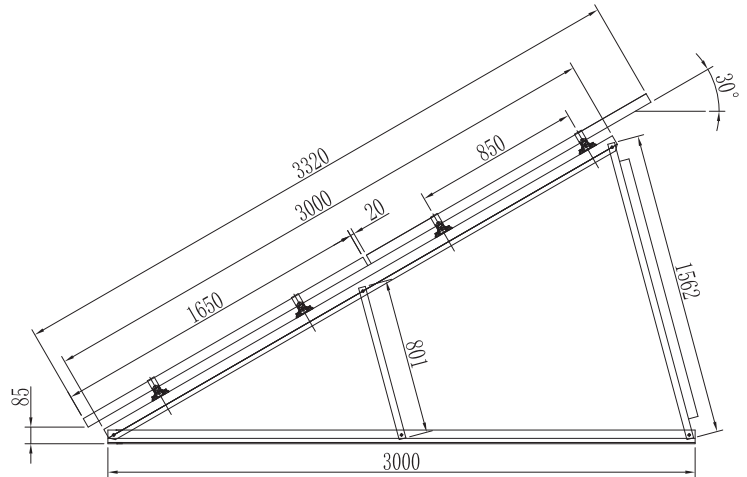
-Double Tripod



5. Installation Instruction



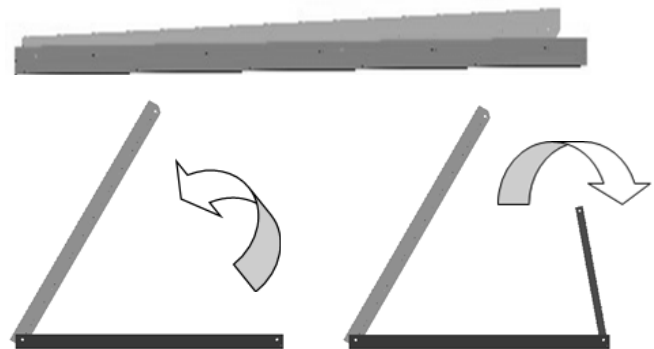
System dimensions Single/Adjustable Tripod



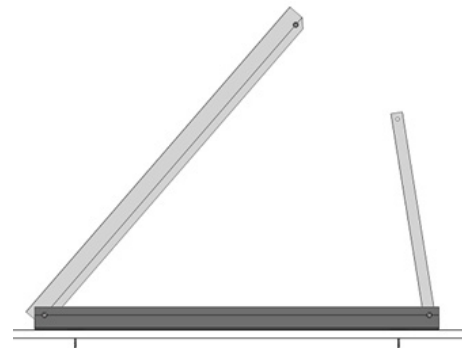
System dimensions Double Tripod

5.1 Single Tripod Installation

5.1.1 Unfold the tripod support, and put it on Tin Roof.

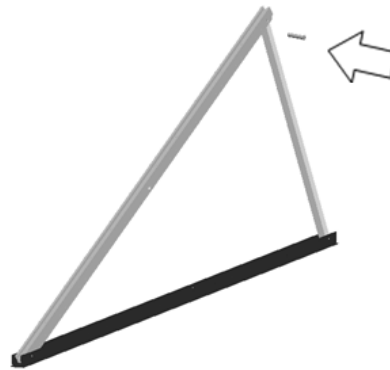


5.1.2 Fix the Tripod on the purlin with Buildex screw and Rubber Pad. Please refer to the certification letter for the number of Buildex screw and Rubber Pad.

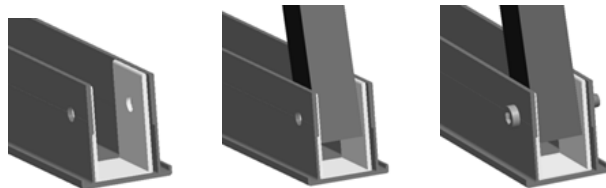


Installation Instruction

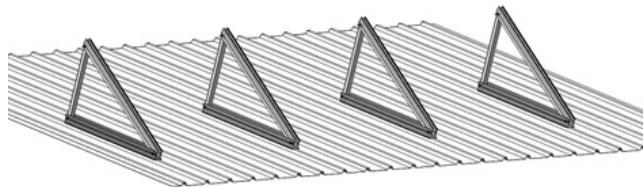
5.1.3 Fix the back tubes to the upper support by using hex head bolts M10*65, Spring Washer, Flat Washer and Hex nuts M10.



5.1.4 Fix the tubes with U Bracket to the base support by using hex head bolts M10*65, Spring Washer, Flat Washer and Hex nuts M10.



5.1.5 Repeat the step above for each support that you need to install.

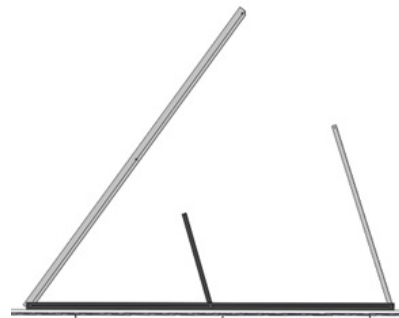


Fix the support Tripod to the purlin following the planning guide.

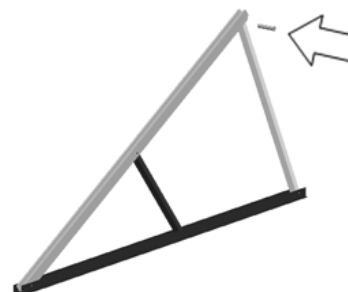
5.2 Double Tripod Installation

5.2.1 Unfold the Double Support (Preassembly), and put it on Tin Roof.

5.2.2 Fix the Tripod on the purlin with Buildex screw and Rubber Pad. Please refer to the certification letter for the number of Buildex screw and Rubber Pad.



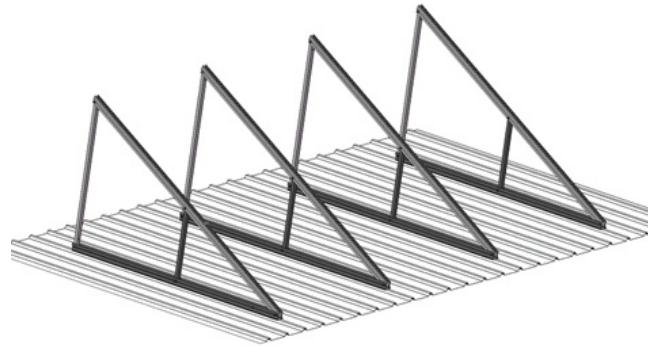
Fix the AL-tube on Upper Support and fasten tightly with Bolts M10*65.



Installation Instruction

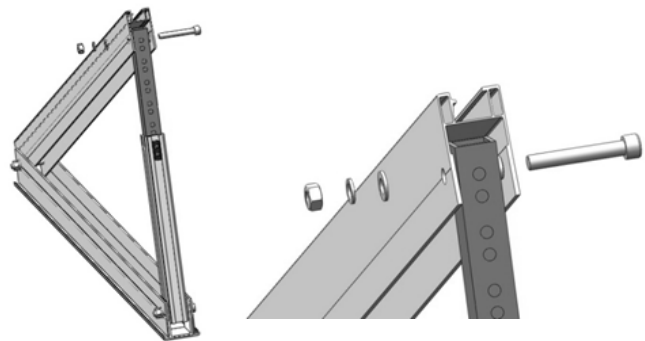
5.2.2 Repeat the step above for each support that you need to install.

Fix the support Tripod to the purlin following the planning guide.

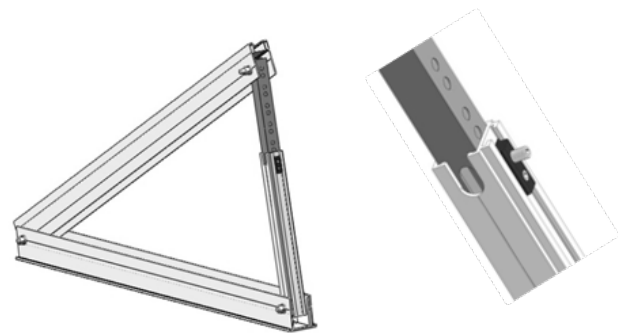


5.3 Adjustable Tripod Installation

5.3.1 Fix the Tripod on the purlin with Buildex screw and Rubber Pad. Please refer to the certification letter for the number of Buildex screw and Rubber Pad.



5.3.2 Fix two freeness al-tubes together by using hex head bolts M10*65, Spring Washer, Flat Washer and Hex nuts M10.

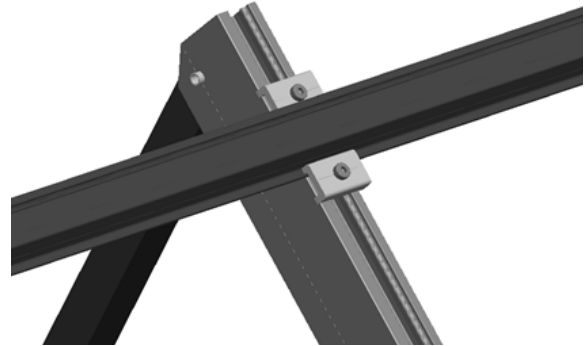


5.3.3 Tighten the screws through the leg strut to go along with the positioning groove on the leg tube, in order to achieve accurate positioning purposes.

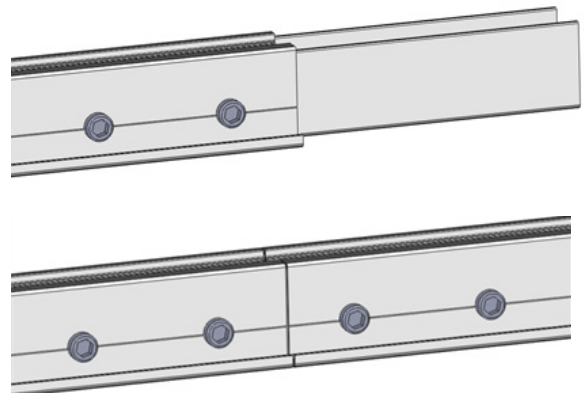
Every 2 degrees set a positioning groove

5.4 T Rail Installation

5.4.1 Use T-rail clamp to fix the T-rail 50 on to the upper support, two per rails and per support.

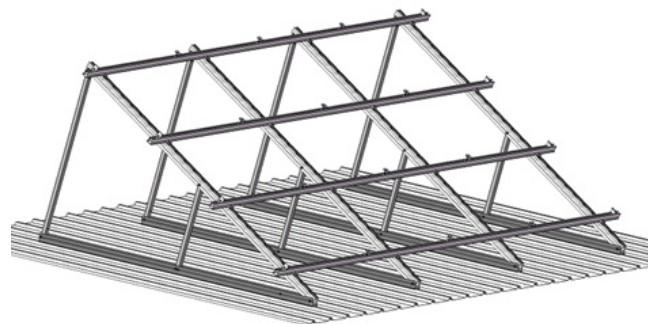


5.4.2 If the rail is not long enough, please connect the rails by using the splice for T Rail 50 using 2 self-tapping screws on each side.



5.4.3 Fix all the rails on to the upper support as the step above.

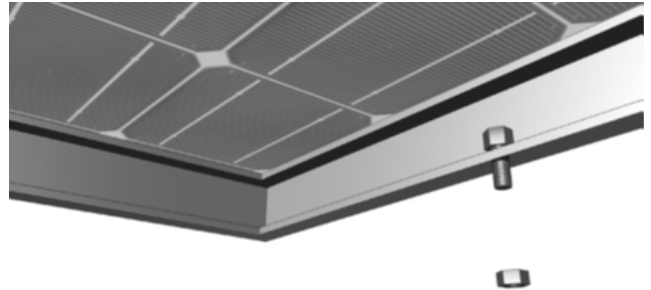
NOTE: WHEN USING TRIPOD FOR INSTALLATION WORKS, SCREWS NOT EXPOSED TO FREQUENT RAIN SHOULD BE WASHED DOWN WITH FRESH WATER AT LEAST EVERY 6 MONTHS TO MEET THE WARRANTY CONDITIONS OF BUILD EX SCREWS.



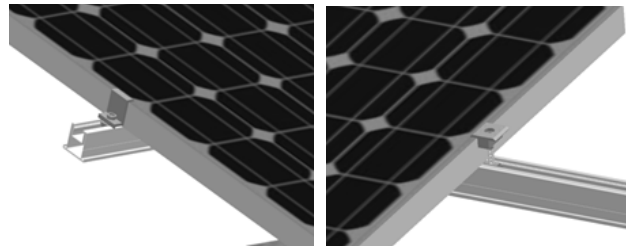
Installation Instruction

5.5 PV Modules Installation

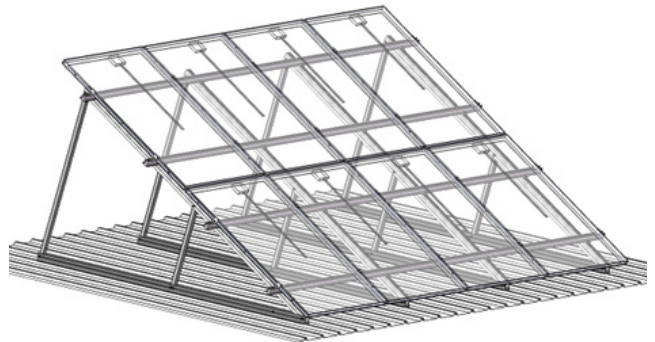
5.5.1 Before installing the PV modules on horizontal rail installations, add anti-slip protection to the lowest row of PV modules. To do this, fasten M6 x 20 mm bolts (with the shank downwards) to the lower mounting holes of the PV module frame. When installing large modules (e.g. ASE250) M8 x 20 mm bolts must be used.



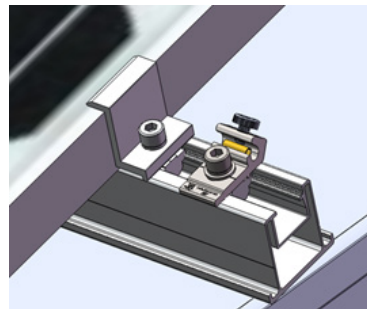
5.5.2 Use Clenergy patented Inter and End clamps to fix the panels on to the rails.



5.5.3 Finish installing all the panels.



5.5.4 Apply one pre-assembled Grounding Lug per Rail. Click the Grounding Lug into the rail channel and insert the Copper Wire. (the maximum size is 4 mm² or similar) Fasten the bolt M6*14 with 5~6 N·m and the bolt M8*25 with 16~20 N·m. Copper Pipe will be supplied for the case that using small size Copper Wire.



6. Warranty

10 year limited Product Warranty, 5 year limited Finish Warranty

Clenergy (Xiamen) Technology co. Ltd warrants to the original purchaser ("Purchaser") of product(s) that it manufactures ("Product") at the original installation site that the Product shall be free from defects in material and workmanship for a period of ten (10) years, except for the anodised finish, which finish shall be free from visible peeling, or cracking or chalking under normal atmospheric conditions for a period of five (5) years, from the earlier of 1) the date the installation of the Product is completed, or 2) 30 days after the purchase of the Product by the original Purchaser ("Finish Warranty").

The Finish Warranty does not apply to any foreign residue deposited on the finish. All installations in corrosive atmospheric conditions are excluded. The Finish Warranty is VOID if the practices specified by AAMA 609 & 610-02 – "Cleaning and Maintenance for Architecturally Finished Aluminum" (www.aamanet.org) are not followed by Purchaser. This Warranty does not cover damage to the Product that occurs during its shipment, storage, or installation.

This Warranty shall be VOID if installation of the Product is not performed in accordance with Clenergy's written installation instructions, or if the Product has been modified, repaired, or reworked in a manner not previously authorized by Clenergy IN WRITING, or if the Product is installed in an environment for which it was not designed. Clenergy shall not be liable for consequential, contingent or incidental damages arising out of the use of the Product by Purchaser under any circumstances.

If within the specified Warranty periods the Product shall be reasonably proven to be defective, then Clenergy shall repair or replace the defective Product, or any part thereof, at Clenergy's sole discretion. Such repair or replacement shall completely satisfy and discharge all of Clenergy's liability with respect to this limited Warranty. Under no circumstances shall Clenergy be liable for special, indirect or consequential damages arising out of or related to use by Purchaser of the Product.

Manufacturers of related items, such as PV modules and flashings, may provide written warranties of their own. Clenergy's limited Warranty covers only its Product, and not any related items.

Certification Letter and Interface Spacing Table

Ref No: Issue 662/K.Z

25 August 2016

Clenergy Australia
 11/20 Duerdin Street
 Clayton North VIC 3168



PV-ezRack Adjustable SolarTripod Engineering Certificate

Gamcorp (Melbourne) Pty Ltd, being Structural Engineers within the meaning of Australian Regulations, have carried out a structural design check of the PV-ezRack SolarTripod for installation within Australia. The design check has been based on the information provided by Clenergy Australia and schematic drawings of the system components by Clenergy International.

Component	Part No
PV-ezRack T Rail 50	ER-R-T50(2560/3405/4200)
PV-ezRack Solar Single Tripod	ER-S-TRI/S15-30
PV-ezRack Solar Double Tripod	ER-S-TRI/D15-30
PV-ezRack Splice for T-50 Rail	ER-SP-T50
PV-ezRack Rail Clamp for T-Rail	ER-RC-T/G
PV-ezRack Inter Clamp, Standard 28-57mm	ER-IC-ST(28-57)
PV-ezRack End Clamp, Standard 28-57mm	ER-EC-ST(28-57)

We find the PV-ezRack adjustable SolarTripod to be structurally sufficient for Australian use based on the following conditions:

- Wind Loads to AS/NZS 1170.2:2011 Amdt 3:2013
- Wind Terrain Categories 2 & 3
- Maximum building height of 20 meters
- Maximum roof angle of 10 degree
- Panel size 1.65 x 0.99 meters
- Maximum tilt angle of tripod frame is 30 degree
- Wind average recurrence interval of 500 years
- Wind region A, B, C, D.

NOTES:

- **Refer to attached summary table for interface spacing**
- **The recommended spacing nominated in this certification is based on the capacity of the array frame, not the roof structure and fixings. It is the responsibility of the installer to adopt the most critical spacing**
- **If any of the above conditions cannot be met, the structural engineer must be notified.**

Client: **Clenergy**
 Project: **PV-ezRack Adjustable Single SolarTripod Spacing Table**
 Address: **Within Australia**
 Designed: **K.Z**

Issue: **662**
 Date: **May-16**

Checked: **M.A**

PV-ezRack Adjustable Single SolarTripod Spacing Table

Type of Rail ER-R-T50 (2560/3405/4200)
 Type of Interface ER-S-TRI/S15-30
 Solar Panel Dimension 1.65mx0.99m
Terrain category 2

Tilt Angle 15°-20°
 Roof Angle (Φ) ≤10°

Wind Region	Building Height - H (m)															
	H≤5				5<H≤10				10<H≤15				15<H≤20			
	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal
A	1473	1641	1775	1991	1402	1560	1685	1886	1366	1520	1641	1835	1290	1498	1617	1806
B	1129	1617	1749	1961	932	1409	1661	1858	844	1275	1618	1808	797	1204	1594	1780
C	759	1146	1539	1734	627	946	1268	1648	568	856	1148	1605	536	809	1084	1581
D	468	705	944	1429	387	582	779	1178	351	528	706	1066	331	499	667	1007

Tilt Angle 21°-25°
 Roof Angle (Φ) ≤10°

Wind Region	Building Height - H (m)															
	H≤5				5<H≤10				10<H≤15				15<H≤20			
	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal
A	1004	1404	1515	1688	829	1253	1441	1604	751	1134	1405	1563	709	1070	1385	1540
B	621	937	1257	1664	514	774	1037	1571	465	701	939	1421	440	662	887	1341
C	419	631	844	1276	346	521	697	1053	314	472	632	953	297	446	597	900
D	259	389	520	784	214	322	430	648	194	292	390	587	184	276	368	555

Tilt Angle 26°-30°
 Roof Angle (Φ) ≤10°

Wind Region	Building Height - H (m)															
	H≤5				5<H≤10				10<H≤15				15<H≤20			
	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal
A	819	1237	1437	1599	676	1021	1368	1521	613	924	1239	1482	579	873	1170	1461
B	507	765	1024	1551	419	632	845	1278	380	572	766	1157	359	541	723	1092
C	342	515	689	1040	283	426	569	858	257	386	516	777	243	365	487	734
D	212	318	425	640	175	263	352	529	159	239	319	479	150	226	301	453

Client: **Clenergy**
 Project: **PV-ezRack Adjustable Single SolarTripod Spacing Table**
 Address: **Within Australia**
 Designed: **K.Z**

Issue: **662**
 Date: **May-16**

Checked: **M.A**

PV-ezRack Adjustable Single SolarTripod Spacing Table

Type of Rail ER-R-T50 (2560/3405/4200)
 Type of Interface ER-S-TRI/S15-30
 Solar Panel Dimension 1.65mx0.99m
Terrain category 3

Tilt Angle 15°-20°
 Roof Angle (Φ) ≤10°

Wind Region	Building Height - H (m)															
	H≤5				5<H≤10				10<H≤15				15<H≤20			
	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal
A	1546	1725	1869	2104	1546	1725	1869	2104	1490	1661	1797	2018	1448	1612	1743	1954
B	1363	1700	1841	2070	1363	1700	1841	2070	1181	1637	1770	1986	1057	1590	1718	1924
C	914	1383	1633	1825	914	1383	1633	1825	794	1199	1573	1756	710	1073	1440	1704
D	564	850	1139	1661	564	850	1139	1661	489	737	988	1495	438	660	884	1337

Tilt Angle 21°-25°
 Roof Angle (Φ) ≤10°

Wind Region	Building Height - H (m)															
	H≤5				5<H≤10				10<H≤15				15<H≤20			
	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal
A	1211	1474	1590	1776	1211	1474	1590	1776	1050	1421	1532	1709	940	1381	1489	1659
B	749	1131	1518	1750	749	1131	1518	1750	650	981	1316	1684	582	878	1177	1635
C	504	760	1018	1542	504	760	1018	1542	438	660	883	1336	392	591	790	1194
D	312	469	627	946	312	469	627	946	271	407	544	821	243	365	487	735

Tilt Angle 26°-30°
 Roof Angle (Φ) ≤10°

Wind Region	Building Height - H (m)															
	H≤5				5<H≤10				10<H≤15				15<H≤20			
	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal
A	987	1398	1508	1681	987	1398	1508	1681	856	1295	1454	1618	767	1158	1413	1572
B	611	922	1236	1657	611	922	1236	1657	531	800	1072	1595	475	716	959	1451
C	412	620	830	1255	412	620	830	1255	358	539	720	1088	321	482	645	973
D	255	383	512	771	255	383	512	771	221	333	445	670	198	298	398	599

Client: **Clenergy**
 Project: **PV-ezRack Adjustable Double SolarTripod Spacing Table**
 Address: **Within Australia**
 Designed: **K.Z**

Issue: **662**
 Date: **May-16**
 Checked: **M.A**

PV-ezRack Adjustable Double SolarTripod Spacing Table

Type of Rail ER-R-T50 (2560/3405/4200)
 Type of Interface ER-S-TRI/D15-30
 Solar Panel Dimension 1.65mx0.99m
Terrain category 2
 Tilt Angle 15°-20°
 Roof Angle (Φ) ≤10°

Wind Region	Building Height - H (m)															
	H≤5				5<H≤10				10<H≤15				15<H≤20			
	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal
A	1411	1641	1775	1991	1162	1560	1685	1886	1051	1520	1641	1835	992	1498	1617	1806
B	869	1317	1749	1961	717	1084	1459	1858	649	981	1319	1808	613	926	1244	1780
C	584	882	1184	1734	482	728	976	1481	437	659	883	1339	413	622	834	1263
D	360	542	726	1099	298	448	600	906	270	406	543	820	255	384	513	774

Tilt Angle 21°-25°
 Roof Angle (Φ) ≤10°

Wind Region	Building Height - H (m)															
	H≤5				5<H≤10				10<H≤15				15<H≤20			
	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal
A	772	1170	1515	1688	638	964	1295	1604	578	872	1171	1563	546	824	1105	1540
B	478	721	967	1468	395	596	798	1208	358	539	722	1093	338	510	682	1032
C	322	485	650	982	267	401	536	810	242	363	486	733	228	343	459	692
D	199	300	400	604	165	248	331	499	149	225	300	452	141	212	284	427

Tilt Angle 26°-30°
 Roof Angle (Φ) ≤10°

Wind Region	Building Height - H (m)															
	H≤5				5<H≤10				10<H≤15				15<H≤20			
	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal	Corner	Edge	Interm ediate	Internal
A	630	952	1279	1599	520	785	1054	1521	471	711	954	1447	445	671	900	1365
B	390	588	788	1194	323	486	651	984	293	440	589	890	276	416	556	840
C	263	396	530	800	218	328	438	660	197	297	397	598	187	281	375	565
D	163	245	327	493	135	203	270	407	122	184	245	369	116	174	232	348

Client: **Clenergy**
 Project: **PV-ezRack Adjustable Double SolarTripod Spacing Table**
 Address: **Within Australia**
 Designed: **K.Z**

Issue: **662**
 Date: **May-16**
 Checked: **M.A**

PV-ezRack Adjustable Double SolarTripod Spacing Table

Type of Rail ER-R-T50 (2560/3405/4200)
 Type of Interface ER-S-TRI/D15-30
 Solar Panel Dimension 1.65mx0.99m
Terrain category 3
 Tilt Angle 15°-20°
 Roof Angle (Φ) ≤10°

Wind Region	Building Height - H (m)															
	H≤5				5<H≤10				10<H≤15				15<H≤20			
	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal
A	1546	1725	1869	2104	1546	1725	1869	2104	1478	1661	1797	2018	1320	1612	1743	1954
B	1049	1593	1841	2070	1049	1593	1841	2070	909	1378	1770	1986	813	1232	1658	1924
C	704	1064	1431	1825	704	1064	1431	1825	611	923	1239	1756	547	825	1108	1684
D	434	654	876	1328	434	654	876	1328	377	567	760	1151	337	508	680	1028

Tilt Angle 21°-25°
 Roof Angle (Φ) ≤10°

Wind Region	Building Height - H (m)															
	H≤5				5<H≤10				10<H≤15				15<H≤20			
	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal
A	932	1414	1590	1776	932	1414	1590	1776	808	1224	1532	1709	723	1094	1472	1659
B	576	870	1168	1750	576	870	1168	1750	500	755	1012	1537	448	675	905	1373
C	388	585	783	1186	388	585	783	1186	337	508	680	1028	302	454	608	919
D	240	361	482	728	240	361	482	728	208	313	419	631	187	281	375	565

Tilt Angle 26°-30°
 Roof Angle (Φ) ≤10°

Wind Region	Building Height - H (m)															
	H≤5				5<H≤10				10<H≤15				15<H≤20			
	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal
A	760	1150	1508	1681	760	1150	1508	1681	659	996	1339	1618	590	891	1197	1572
B	470	709	951	1443	470	709	951	1443	408	615	825	1249	366	551	738	1117
C	317	477	639	965	317	477	639	965	275	414	554	837	247	371	496	749
D	196	295	394	593	196	295	394	593	170	256	342	515	153	229	306	461

Gamcorp (Melbourne) Pty Ltd A.C.N 141 076 904 A.B.N 73 015 060 240
www.gamcorp.com.au melbourne@gamcorp.com.au
 Suite 4, 346 Ferntree Gully Rd, Notting Hill VIC 3168 Tel: 03 9543 2211 Fax: 03 9543 4046

Number of Fasteners per Frame – Double Tripod				
Roof Frame Material	REGION			
	A	B	C	D
0.55 – 0.74 Steel Batten	6	7	7	7
0.75 - 1.4 Steel Batten	4	5	5	5
1.5 Purlin	3	3	3	3
1.9 Purlin	2	3	3	3
F7 Pine*	3	3	3	3
F17 H'wood*	3	3	3	3
*Minimum 35mm embedment for Timber				

Number of Fasteners per Frame – Single Tripod				
Roof Frame Material	REGION			
	A	B	C	D
0.55 - 0.74 Steel Batten	5	5	5	5
0.75 - 1.4 Steel Batten	3	3	4	4
1.5 Purlin	2	2	2	2
1.9 Purlin	2	2	2	2
F7 Pine*	2	2	2	2
F17 H'wood*	2	2	2	2
*Minimum 35mm embedment for Timber				

Note : Use M6 12g Self Drilling Roof Screws (T.P.I 14) – Buildex RoofZips or similar
 If screw needs to be replaced, the size of screw must be replaced with the next size up.



Relationships built on trust



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www.gamcorp.com.au melbourne@gamcorp.com.au
Suite 4, 346 Ferntree Gully Rd, Notting Hill VIC 3168 Tel: 03 9543 2211 Fax: 03 9543 4046

Construction is to be carried out strictly in accordance with the instruction manual. This work was designed in accordance with the provisions of Australian Building Regulations and in accordance with sound, widely accepted engineering principles.

Yours faithfully,
Gamcorp (Melbourne) Pty Ltd

A handwritten signature in blue ink, appearing to read 'Martin Gamble'.

Martin Gamble
Managing Director
MAICD

A handwritten signature in blue ink, appearing to read 'Mudi Ariyaratna'.

Mudi Ariyaratna
B.Eng(Civil)(Hons)Monash, M.Eng&Mgt, MIEAust,
CPEng, NPER, RBP EC-39699, RPEQ- 15899



Clenergy Australia

1/10 Duerdin Street, Clayton VIC 3168 Australia
 Tel: +61 3 9239 8088 Fax: +61 3 9239 8024
 E-mail: sales@clenergy.com.au www.clenergy.com.au

Clenergy China

999-1009 Min'an Rd, Huoju Hi-tech Ind. Dev. Zone
 Xiang'an District 361101, Xiamen, Fujian, China
 Tel: +86 592 311 0088 Fax: +86 592 599 5028
 E-mail: sales@clenergy.com.cn www.clenergy.com.cn

Clenergy EMEA

Esplanade 41, 20354 Hamburg, Germany
 Tel: +49 (0) 40 3562 389 00
 E-mail: sales.emea@clenergy.com

Clenergy Japan

Nittochi Yamashita Building 5th Floor
 23 Yamashita-cho, Yokohama, 231-0023 Japan
 Tel: +81 45 228 8226 Fax: +81 45 228 8316
 E-mail: sales@clenergy.co.jp www.clenergy.jp

Clenergy Philippines

145 Yakal St., San Antonio village, Makati City, Philippines
 Tel: +63 977 8407240
 E-mail: sales_ph@clenergy.com www.clenergy.ph

Clenergy Thailand

9/2, 5th Floor, Vorasin Building, Soi Yasoob 2, Viphavadee-Rungsit
 Road, Chomphon Sub-district, Chatuchak District, Bangkok 10900
 Tel: +66 63 228 0200, +66 81 969 5152
 E-mail: sales_th@clenergy.com, support_th@clenergy.com

Clenergy Singapore

24 Raffles Place #28-01 Clifford Centre Singapore 048621
 Tel: +65 9743 1425
 E-mail: vincent.chan@clenergy.com

Clenergy Vietnam

Tel: +86 592 3110095
 E-mail: sales_vietnam@clenergy.com;
 susie.chen@clenergy.com;
 ducnguyen@clenergy.com

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