



Commercial Roof Installation Manual

Version 1.0 - updated October 2013

www.sunlock.com.au



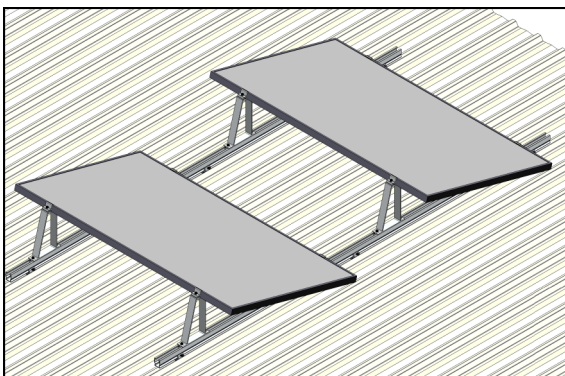
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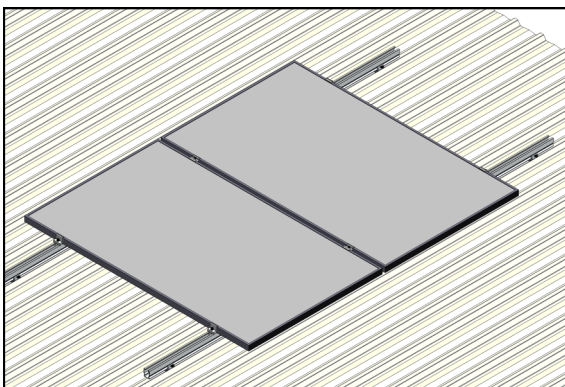
INTRODUCTION

Thank you for choosing the SunLock commercial roof framing system. Made from custom-designed aluminium extrusions and components, SunLock's streamlined design greatly simplifies solar panel installation.

SunLock's versatile design makes it suitable for a wide variety of commercial building types and zones. SunLock is backed by a 10-year warranty and is compliant with the AS/NZS 1170.2:2011 on wind actions, AS/NZS 16641.1:1997 on aluminium structures, AS 1720.1:2012 on timber structures, AS/NZS 4600:2005 on cold-formed steel structures.



Tilted array



Flush array

SAFETY AND INSTALLER RESPONSIBILITIES

Handling and Installing SunLock

It is important that safety practices are observed when installing SunLock framing.

- > Do not throw or roughly handle any SunLock components.
- > Do not modify SunLock components in any way. The exchange of bolts, drilling of holes, bending or any other physical changes not described in standard installation procedure will void the warranty.
- > Do not bring SunLock into contact with sharp or heavy objects.
- > It is the installer's responsibility to verify the integrity of the structure to which SunLock is fixed. Roofs or structures with rotten/rusted purlins, undersized purlins, excessively spaced purlins, or any other unsuitable substructure cannot be used with SunLock, and installation on such structures will void the warranty, and could result in death or serious injury.

SAFETY AND INSTALLER RESPONSIBILITIES (CONT.)

Wind and Climate Design

A SunLock frame installed in accordance with this installation manual is compliant with AS/NZS 1170.2:2011.

This manual cannot cover all types of buildings and eventualities and for buildings outside the limits stated on the drawings, contact a structural engineer for a custom design.

AS/NZS 1170.2:2011 provides guidance on determining the wind pressures applicable to your SunLock install site, taking into account roof shape and geographic location. Sufficient guidance is given in this document, but you may wish to procure a copy of these standards if your company installs Australia / New Zealand wide.

- > REMEMBER average wind speeds are higher for structures mounted closer to the roof perimeter zone (edge)

- > Make sure your installation complies with local and national building codes. Take into account relevant design parameters (wind speed, exposure and topographic factor) when determining the loading for the installation.

- > If alternative fasteners are used to fix the framing to the roof (assuming supplied fasteners are unsuitable for any reason), all screw fasteners must conform to corrosion resistance Class 4 Australian Standard AS 3566 and be of equal or greater strength to those supplied with your SunLock order.

TECHNICAL SPECIFICATIONS

Applications

- > Commercial and residential buildings
- > Marine applications and remote areas

Features

- > Australian design and manufactured
- > 6106-T6 aluminium extrusion with 210 MPa yield strength.
- > Suitable for roof slopes in the range from 0° to 10° (for tilted arrays)
- > Suitable for roof slopes in the range from 5° to 30° (for flush arrays)
- > Inherent corrosion resistance resulting in low ongoing maintenance and an extended product life
- > Complies with Australian / New Zealand Standards on Wind Actions (AS/NZS 1170.2:2011)
- > Optional anodised finish (standard is mill finish)

Custom Design

For a custom design, please contact either SunLock or an Australian registered structural engineer.

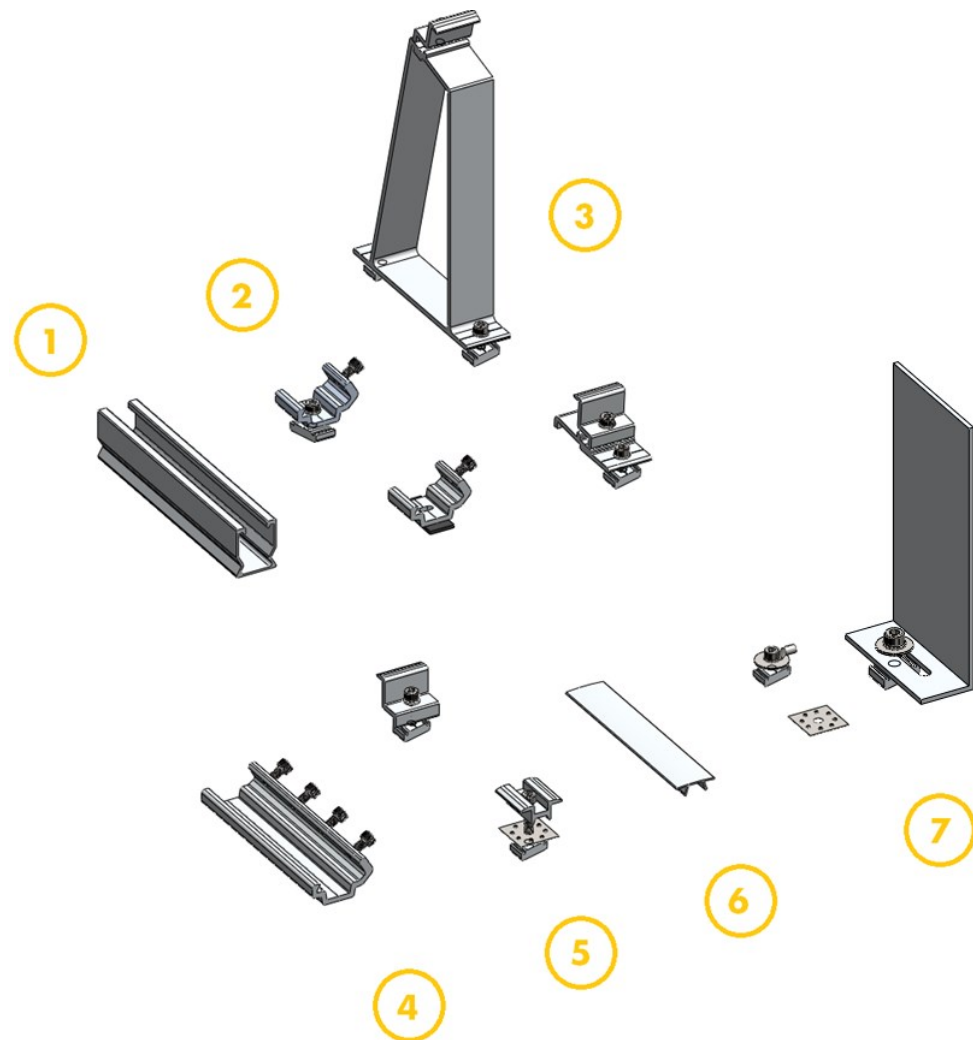
BEFORE INSTALLING

Receipt of Goods

Check that the SunLock equipment is undamaged and that the order is complete.

Check for correct quantities of the following items:

- 1. Channel:** consideration needs to be made for the number of panels in the array and the spacing between panels in each row.
- 2. Channel feet:** consideration needs to be made for the number of panels in the array, the number of channel lengths per panel and the purlin spacing.
- 3. Commercial roof bracket kits:** for tilted arrays, consideration needs to be made for the required angle of inclination and the number and height of the panels in the array.
- 4. Channel joiner:** consideration needs to be made for the number of channel lengths in the array.
- 5. End / mid clamps:** for flush arrays, consideration needs to be made for the number of panels rows.
- 6. Channel lid:** if protection or water proofing of electrical cables is required, consideration needs to be made for the number of panels in the array, the number of channel lengths per panel and the spacing between each panel.
- 7. Earthing components:** consideration needs to be made for the earthing of each panel to the frame.



BEFORE INSTALLING (CONT.)

Tools Required for Installation:

> T-bar hex or 6mm hexagonal driver bit:

If using a 6mm driver bit, made sure that the cordless power tool used for driving has a hand-tight clutch setting and a fine (soft) impact driver to prevent damage to the fragile glass panels and threads on the framing.



> Drill or impact driver:

For driving roof material fixings.



> Gloves:

For handling SunLock framing (aluminium can develop sharp corners).



SUNLOCK COMPONENTS

SL2C - Channel, in a minimum of at least two per panel, hold each row and are custom designed and Australian made from 6106-T6 extruded aluminium.

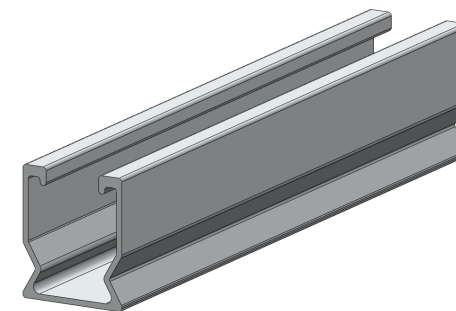
Note: custom channel lengths available on request.

Minimum order quantity, deposit and lead time apply.

SL2C-CL/m - SunLock channel (custom length)

SL2C3.0 - SunLock channel (3000mm length)

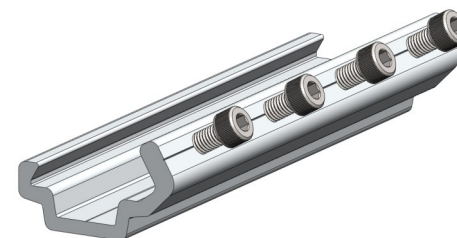
SL2C6.0 - SunLock channel (6000mm length)



SLCJ - Joiner, extend SunLock channel to any length as required by the quantity or width of the solar panels.

SLCJ - SunLock channel joiner (standard)

SLCJ02 - SunLock channel joiner (alternative)

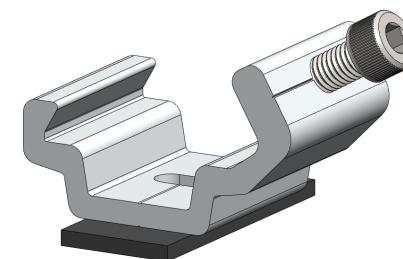


SLCF - Foot, secures the channel to the roof. Each channel foot is supplied with a potable grade EPDM washer to prevent water ingress of galvanic corrosion with the roof material.

SLCF01 - for single screw (no screw supplied)

SLCF02 - secures to sub frame (fasteners supplied)

SLCF03 - for double fixing (no screws supplied)



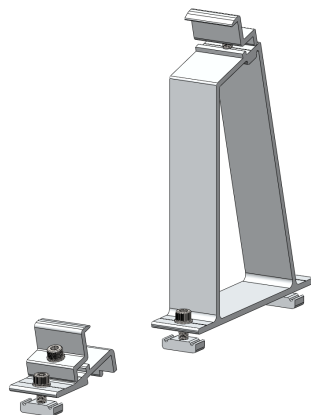
SUNLOCK COMPONENTS (CONT.)

SLCR - Commercial roof bracket kits, comprises of one front leg and one rear legs, each kit suits ~1000 mm wide panels.

SLCR505 - SunLock 5° tilt bracket (clamp)

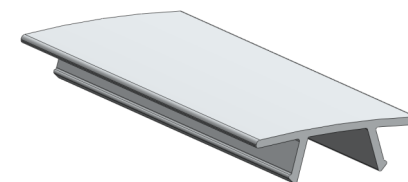
SLCR510 - SunLock 10° tilt bracket (hook)
Suits panel frame thicknesses of between 1.5mm to 1.9mm

SLCR515 - SunLock 15° tilt bracket (clamp)



SLCL - Channel lid, snaps into the channel and mechanically protects cabling from damage and water ingress.

Note: Custom lengths are available on request. Minimum order quantity, deposit and lead time apply.



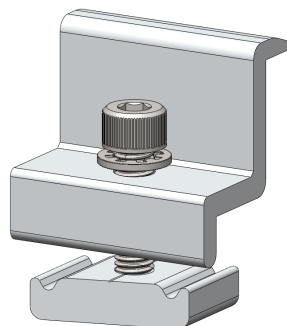
SLCL-CL/m - SunLock channel lid (custom length)

SLCL3.0 - SunLock channel lid (3000mm length)

SLEC - End clamps, are available to suit 38 mm high panels and are simple and fast to install.

Note: Custom end clamps are available on request. Minimum order quantity, deposit and lead time apply.

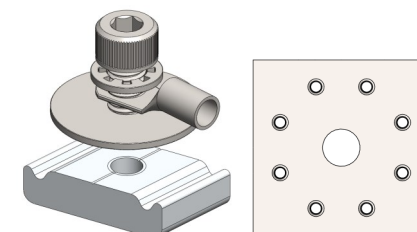
SLECF38C - SunLock 38 mm end clamp



SLEL - EarthLock, provides earth continuity from each panel frame to the channel, allowing the quick and effective connection of the array to an earthing cable if required.

SLELW01 - EarthLock washer

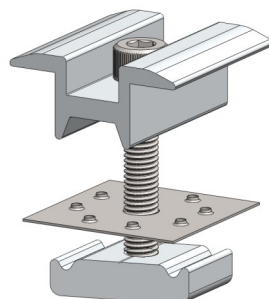
SLELBT02C - EarthLock bonding terminal



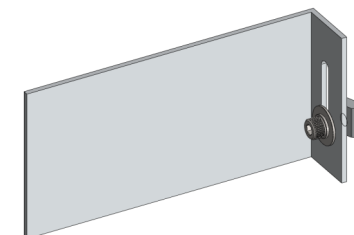
SLMC - Mid clamps, fit between panels and hold the panels to the channel. These are designed to suit 30 - 40 mm panels.

Note: Custom mid clamps are available on request. Minimum order quantity, deposit and lead time apply.

SLMC024C - 30 - 40 mm panels



SLIMB003 - Isolator mounting bracket, is easily attached to the SunLock channel and provides a secure mounting surface for the rooftop DC isolator.



DESIGNING YOUR FRAMING SYSTEM

Visit www.sunlock.com.au/commercial.php and click on the **CALCULATOR** tab.

SUN-LOCK
Commercial Framing Calculator

Australian Made

Wind region ? Choose ▾ Purlin thickness (mm) ? Choose ▾

Roof zone ? Choose ▾ Purlin spacing (mm) ? Choose ▾

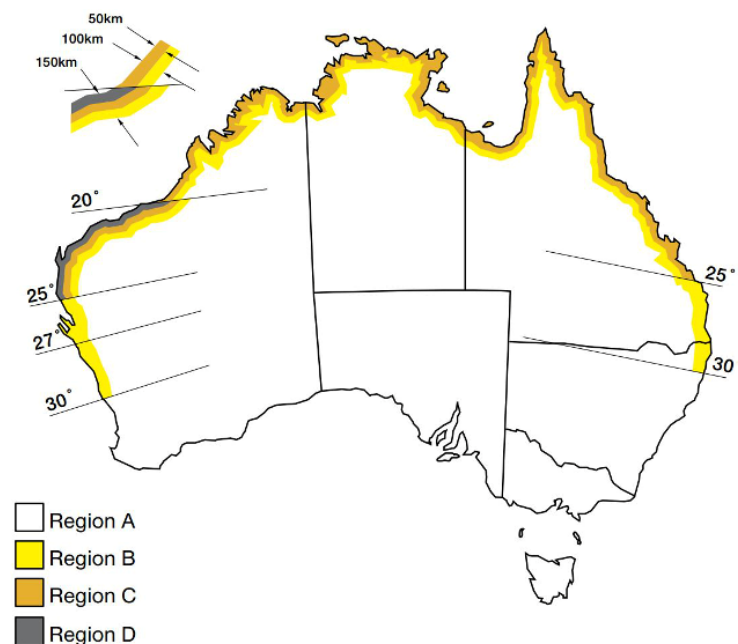
Terrain category ? Choose ▾ Building height (m) ?

Screws per foot ? Choose ▾ Panel Tilt Angle ? Choose ▾

Calculate

Selecting wind region

Select the required wind region (A, B, C or D) from the following map.



Region A:

- > Callytharra Springs
- > Gascoyne Junction
- > Green Head
- > Kununurra
- > Lord Howe Island
- > Morawa
- > Toowoomba
- > Wittanoom
- > Bourke

Region B:

- > Adelaide River
- > Atherton
- > Biloela
- > Brisbane
- > Christmas Island
- > Collinsville
- > Geraldton
- > Ivanhoe
- > Mullewa
- > Norfolk Island
- > Torres Strait Islands
- > Wyndham

Region C:

- > Broome
- > Bundaberg
- > Burketown
- > Cairns
- > Cocos Islands
- > Darwin
- > Derby
- > Mackay
- > Moreton
- > Normanton
- > Rockhampton
- > Townsville

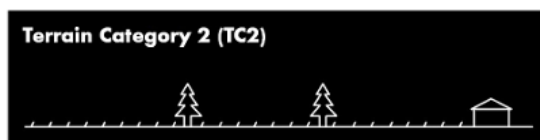
Region D:

- > Carnarvon
- > Exmouth
- > Karratha
- > Onslow
- > Port Hedland

Selecting wind terrain category

Terrain category 2

Open terrain, including grassland with well scattered obstructions having heights generally from 1.5 metres to 5 metres. Examples include farmland or cleared sub-divisions with isolated trees and uncut grass.

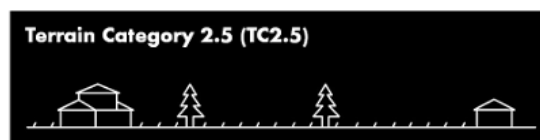


Terrain Category 2 (TC2)

Site near water or cleared rural land with few obstructions to wind.

Terrain category 2.5

Terrain with few trees or isolated obstructions, for example terrain in developing outer urban areas with scattered houses.



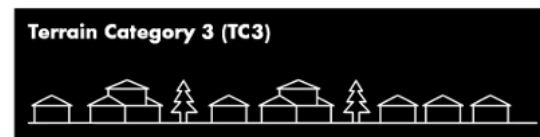
Terrain Category 2.5 (TC2.5)

Terrain Category 2.5 (TC2.5)

Site with a few trees or isolated buildings 3m to 5m high (developing urban areas).

Terrain category 3

Terrain with numerous closely spaced obstructions having heights generally from 3 metres to 5 metres. Examples include typical suburban housing or light industrial areas.



Terrain Category 3 (TC3)

Terrain Category 3 (TC3)

Site surrounded by trees or buildings 3m to 5m high (typical suburban site).

Terrain category 4

Terrain with numerous large, high and closely spaced obstructions having heights generally from 10 metres to 30 metres. Examples include large city centres or well developed industrial complexes.



Terrain Category 4 (TC4)

Terrain Category 4 (TC4)

Site located in highly built up industrial or inner city areas (10m to 30m obstructions).

Selecting roof zone

Solar panels can be installed anywhere on the roof, as long as a sufficient number of fixings are used. Higher wind speeds are encountered at the edges of roofs and therefore more fixings are required in these areas.

For a tilted array, a roof can be divided into four zones, the internal zone, intermediate zone, the edge zone and corner zone.

For a flush array, a roof can be divided into two zones, the central zone and end zone.

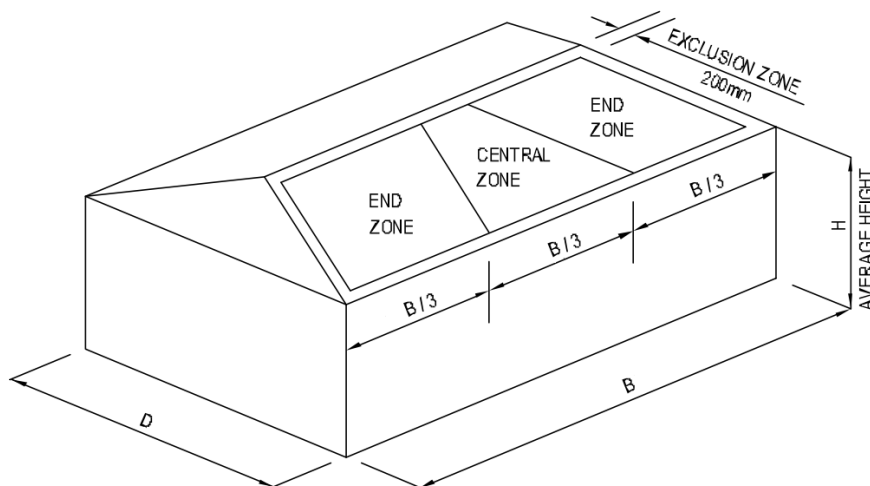
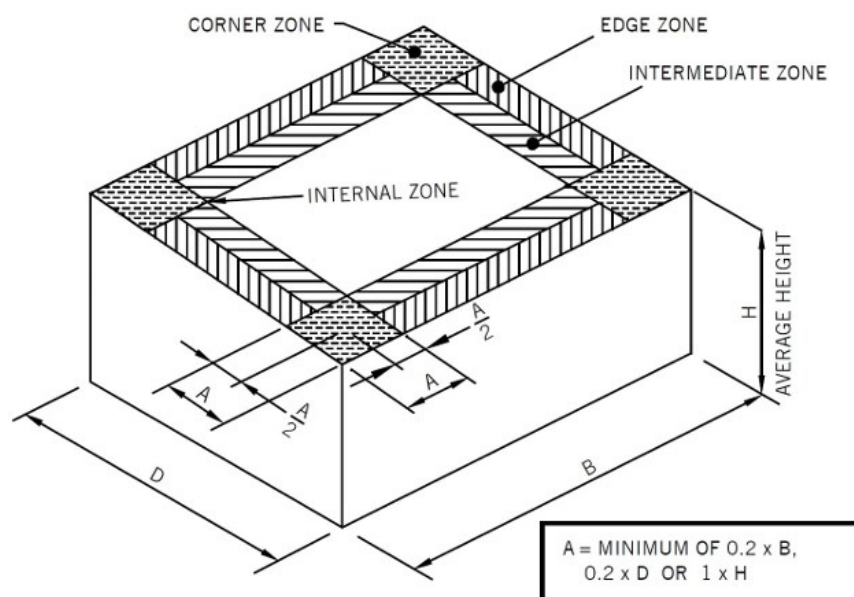
The width of these outer zones can be determined based on the length, width and average height of the building.

Determining the width of zones 'A' and 'B'

The width of the edge and intermediate zones, 'A' is determined by calculating each of the following values, and then using the smallest:

Tilt: $> 0.2 \times B$ $> 0.2 \times B$ $> H$ **Flush:** $> B / 3$ $> D / 3$

Selecting roof zone



Selecting number of fasteners

In some circumstances extra fixings will be required. To reduce the need for extra framing, double fixing feet can be used in place of the single fixing feet.

Selecting purlin thickness and spacing

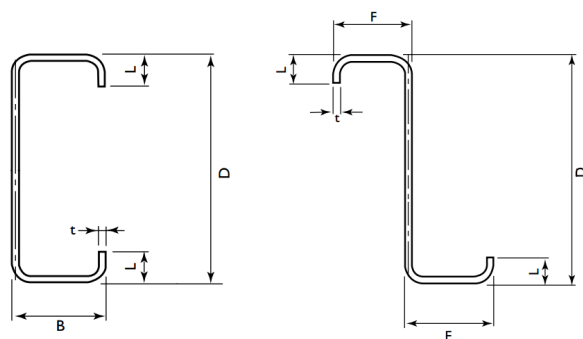
To appropriately design your SunLock commercial framing system measure the thickness and spacing of the purlins supporting the roof sheeting.

The strength of each fixing holding the solar frame to the roof is increased with thicker purlins. As a result, the amount of framing can be optimised.

Alternatively, if it isn't possible to measure the thickness of the purlins, the thickness can be derived by measuring the height and width of the purlins (see below). If access to the purlins isn't possible, use the value of 0.9 mm.

Selecting purlin thickness and spacing (cont.)

Catalogue number	t mm	D mm	Zeds			Cees	
			E mm	F mm	L mm	B mm	L mm
Z/C10010	1.0	102	53	49	12.5	51	12.5
Z/C10012	1.2	102	53	49	12.5	51	12.5
Z/C10015	1.5	102	53	49	13.5	51	13.5
Z/C10019	1.9	102	53	49	14.5	51	14.5
Z/C15012	1.2	152	65	61	15.5	64	14.5
Z/C15015	1.5	152	65	61	16.5	64	15.5
Z/C15019	1.9	152	65	61	17.5	64	16.5
Z/C15024	2.4	152	66	60	19.5	64	18.5
Z/C20015	1.5	203	79	74	15.0	76	15.5
Z/C20019	1.9	203	79	74	18.5	76	19.0
Z/C20024	2.4	203	79	73	21.5	76	21.0
Z/C25019	1.9	254	79	74	18.0	76	18.5
Z/C25024	2.4	254	79	73	21.0	76	20.5
Z/C30024	2.4	300	100	93	27.0	96	27.5
Z/C30030	3.0	300	100	93	31.0	96	31.5
Z/C35030	3.0	350	129	121	30.0	125	30.0



Selecting a tilted or flush array

SunLock commercial tilt brackets come in three different angles (5, 10 and 15 degrees). To meet the CEC's recommendation for the minimum tilt angle for solar panels of 10 degrees, SunLock provides a wide range of different brackets to suit southern or northern facing roofs of varying pitch.

- > For roofs sloping southwards (~5 degrees), use the SunLock 15 degree tilt bracket kit providing a total angle of inclination of 10 degrees to the horizon.
- > For roofs sloping northwards (~5 degrees), use the SunLock 5 or 10 degree tilt bracket kit providing a total angle of inclination of 10 or 15 degrees to the horizon.
- > For roofs sloping northwards (>10 degrees), mount the panels flush.

INSTALLATION

A commercial solar array can be installed either flush or tilted towards the sun.

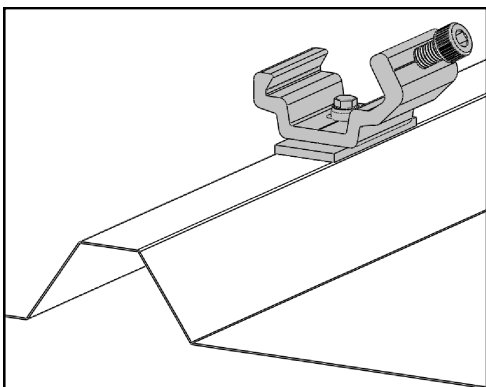
Start any installation by marking the fixing points at the calculated centres and spacing along the proposed length of the array.

Installing channel feet on roof

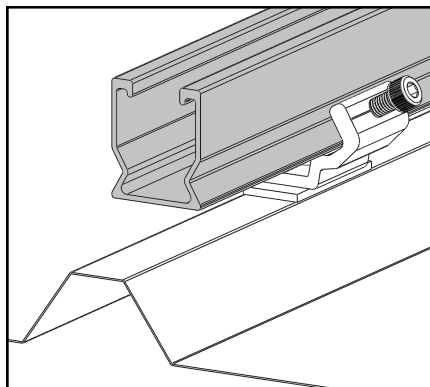
Determine where the roof mounts will be positioned based on position of existing roof screws.

Do not remove existing roof screws. Instead, install on unused crest. The existing screws are there to hold down the roof sheet, while the new screws are there to hold down the solar system.

Fix channel feet in place ensuring the EPDM washer separates the feet from the roof.



Channel feet installed on roof



Channel secured in feet

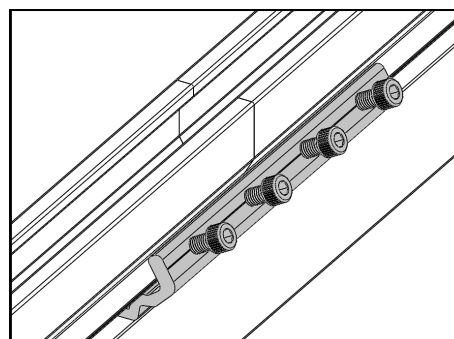
Connecting channel to channel feet

Slide the channel into the feet making sure that the channel is seated correctly. Securely fasten both parts with the M8 cap screw.

Connecting multiple channels

Join channel segments by inserting the channel joiner between each respective length. Securely fasten the two parts with the M8 cap screw.

NOTE: The channel joiner can be used as a mounting foot when the join occurs directly over a purlin / screw fixing.



Channels secured with joiner

Installing rear brackets (for tilted arrays)

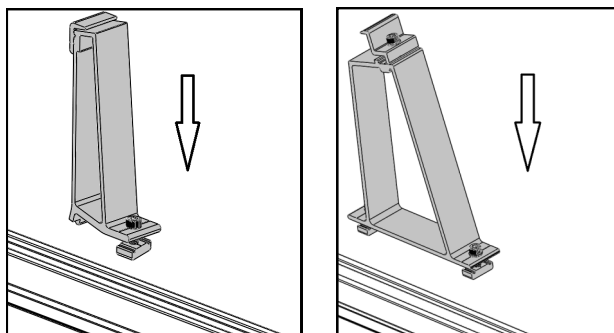
Rest the rear bracket on the channel in the correct orientation.

5 / 15 degree brackets:

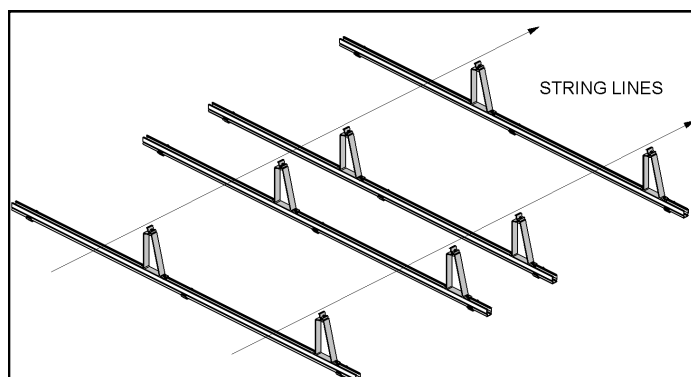
Ensure that the channel nuts are loosely positioned inside the channel, position the bracket in place and then fasten the M8 cap screws. Run a string line to position adjacent panels.

10 degree brackets:

Ensure that the slot sits in the channel void, position the bracket in place and then fasten the M8 cap screw. Run a string line to position adjacent panels.



Front brackets installed onto channel (10 and 15 degree brackets)



Subsequent rear brackets referenced from string line

Once the rear bracket is installed into position, tie a string line and locate all subsequent brackets into the correct location.

Secure all fasteners joining the bracket to the channel.

Selecting panel spacing values (for tilted arrays)

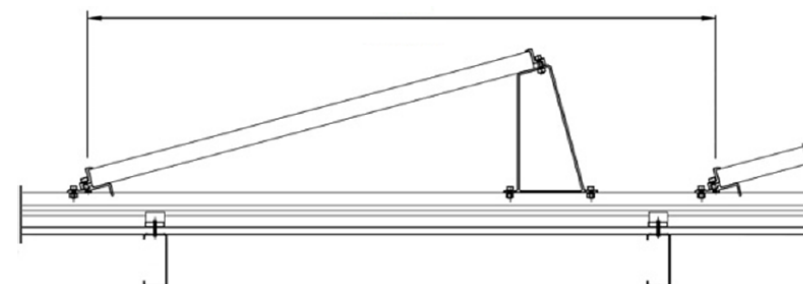
To determine the required spacing between tilted panels, use the following tables.

All values assume a ~1000mm wide panel mounted on a flat roof.

For north sloping roofs, these figures can be minimised.

Conversely, for south sloping roofs, these figures need to be increased.

City	Latitude	Angle	Panel Spacing (mm)		
			CEC (10am - 2pm)	SunLock (9am - 3pm)	Sunrise to Sunset (+1 hour / -1 hour)
Darwin	12°	5°	1200*	1200*	1200*
	12°	10°	1200*	1210	1365
	12°	15°	1200*	1300	1535
Brisbane	27°	5°	1200*	1200*	1275
	27°	10°	1230	1300	1540
	27°	15°	1330	1430	1795
Perth	32°	5°	1200*	1200*	1285
	32°	10°	1300	1380	1560
	32°	15°	1430	1560	1820
Sydney	34°	5°	1200*	1200	1330
	34°	10°	1300	1380	1640
	34°	15°	1430	1560	1950
Canberra	35°	5°	1200*	1220	1335
	35°	10°	1315	1435	1660
	35°	15°	1460	1640	1975
Adelaide	35°	5°	1200*	1220	1335
	35°	10°	1330	1435	1660
	35°	15°	1485	1640	1975
Melbourne	37°	5°	1200*	1280	1350
	37°	10°	1380	1560	1695
	37°	15°	1560	1820	2030
Hobart	42°	5°	1240	1350	1485
	42°	10°	1470	1695	1955
	42°	15°	1690	2030	2415

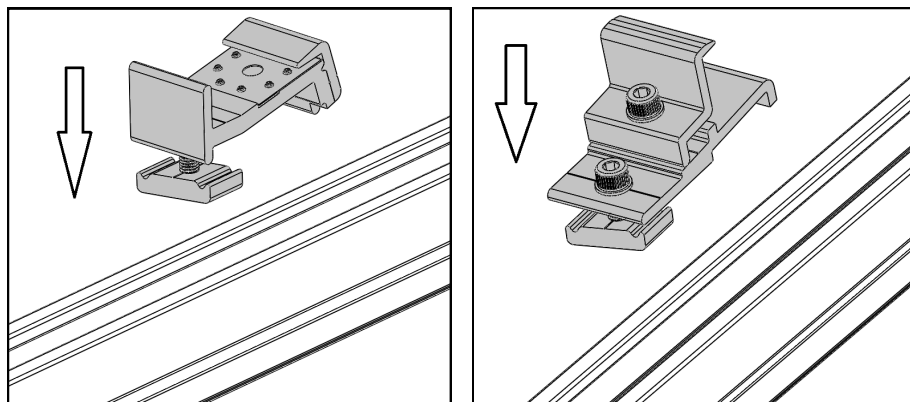


* For engineering compliance, a minimum spacing of 1200mm is required.

INSTALLATION (CONT.)

Installing front brackets (for tilted arrays)

Rest the front bracket on top of the channel. Ensure that the slot sits in the channel void, position the bracket in place and then loosely fasten the M8 cap screw allowing the bracket to freely move back and forwards.



Front brackets installed onto channel (10 and 15 degree brackets)

Installing panels

5 / 15 degree brackets:

Slide the panel between the rear bracket and the clamp and fasten with the supplied M8 fastener. Lift up the front of the panel and push the front bracket into place.

If required, insert an EarthLock washer between the front bracket and the panel.

Fasten the clamp on the front bracket with the supplied M8 fastener.

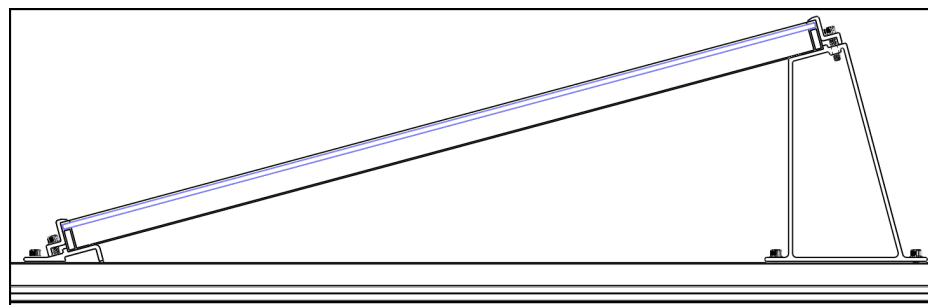
10 degree brackets:

Slide the panel mounting frame into the hook of the rear bracket making sure the panel is completely seated.

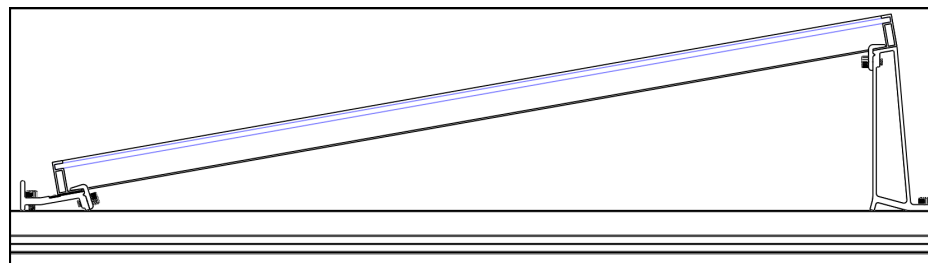
Lift the front of the panel and push the front bracket underneath the panel frame. Pull back on the front bracket ensuring that the panel frame is secured into the hook of the front bracket.

A audible grating sound can be heard as the EarthLock washer penetrates the anodised coating of the panel.

Fasten the front bracket to the channel with the supplied M8 fastener.



15 degree commercial roof brackets - panel installed



10 degree commercial roof brackets - panel installed

INSTALLATION (CONT.)

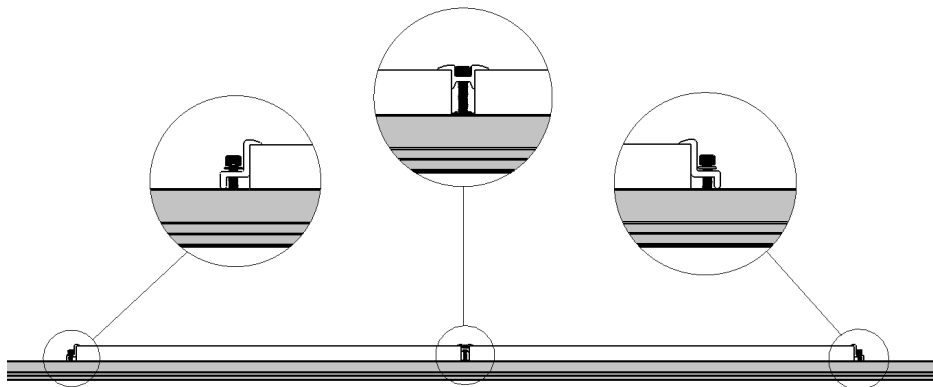
Installing flush array

Lay the panel on the channel in the desired position. Insert the channel nut of the end clamp into the channel. Secure the first solar panel to the channel starting as close to the end of the row as possible. A minimum of 50mm between the end of the channel and the edge of the first solar panel is required.

Insert the channel nut of the mid clamp into the channel and position the clamp against the panel frame. Hand tighten the bolt to loosely hold the clamp in position. Ensure the EarthLock washer is placed between the SunLock channel and frame of the panel.

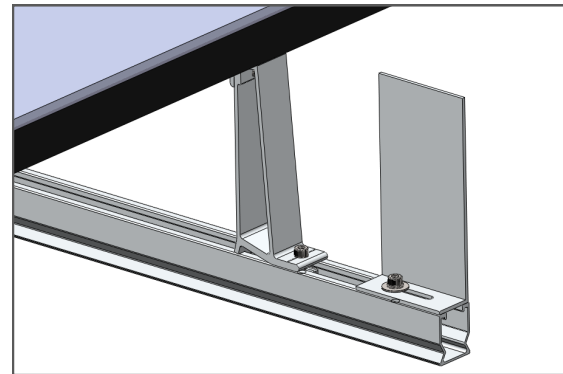
Slide the second panel firmly into place against the mid clamps and fasten bolts. Repeat as required.

Finish the array row by securing the remaining two end clamp. You should have a minimum of 50 mm clearance between the end of the channel and the edge of the last solar panel is required. Tighten all bolts to secure the panels.



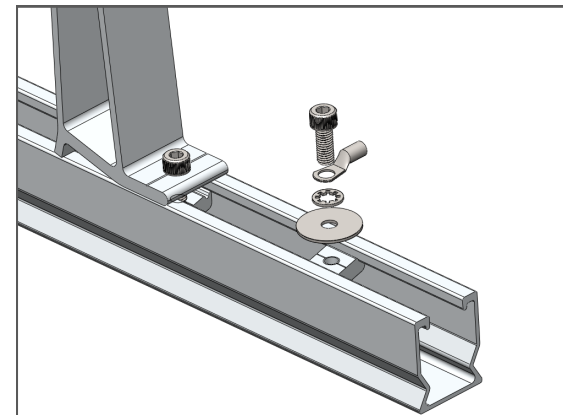
Installing isolator bracket (optional)

Mount the isolator to the isolator bracket with self-tapping screws. Fasten the isolator bracket to the channel and fasten the supplied M8 bolt ensuring there is enough clearance for all cabling. The isolator can also be mounted to the rear tilt legs.



Installing EarthLock bonding terminals

Crimp the earth cable into the supplied lug and fasten the EarthLock bonding terminal directly to the SunLock channel by placing the channel nut into the channel and tightening the M8 cap screw.



WARRANTY AGAINST DEFECTS

Energy Matters Pty Ltd (trading as Energy Matters and Apollo Energy) (**Energy Matters**) is the manufacturer of SunLock Solar Module Mounting System (**Frame**).

Energy Matters warrants, on the terms set out below, that the Frame will be free from defects in materials and workmanship for a period of 10 years from the date on which the Frame is purchased from Energy Matters (**Warranty against Defects**).

Transferability

Our Warranty against Defects is only provided to the original purchaser of the Frame from Energy Matters (**Purchaser**) or, where the Purchaser is an installer or builder who on-supplies the Frame to another party, to that other party (**End-User**). Our Warranty against Defects is not otherwise transferable.

Making a claim

If you believe that the Frame is defective and you are an End-User, you may either make a claim against the installer from whom you purchased the Frame or you may make a claim against us directly.

In order to make a claim against us, you must post, fax or email us a notice, using the contact details set out below. In your notice you must provide:

- > details of why you believe the Frame is defective;
- > a copy of your invoice, receipt or any other document which provides proof of purchase;

> details of any expenses you have incurred in making your claims; and

> details of how we should contact you.

Within a reasonable time after receipt of your claim we will contact you to arrange a time to attend the premises at which the Frame is located.

Remedies

If we determine that the Frame is defective and the defect is not a major failure then, if possible, we will try to repair the defective Frame. If this is not possible, we will provide a replacement Frame at our expense.

If we determine that the Frame is defective and the defect is a major failure then you have the option of:

- > rejecting the Frame and obtaining a refund;
- > rejecting the Frame and obtaining a replacement Frame at our expense;
- > keeping the Frame and receiving compensation for the difference between the actual value of Frame and the amount paid for the Frame.

All return freight costs incurred during the warranty process are to be paid by the customer.

Your obligations

In order to have the benefit of our Warranty against Defects:

> if you are a Purchaser, you must have paid all amounts owed by you to Energy Matters in relation to the purchase of the Frame;

> you must have complied with all reasonable instructions of Energy Matters (whether written or verbal) in relation to the transport, installation, care, repair and use of the Frame;

> you must not have misused, neglected, damaged or modified the Frame.

Exclusions

Our Warranty against Defects does not include:

- > damage caused to the Frame during shipment or storage of the Frame by a party other than Energy Matters;
- > damage caused to the Frame during installation by a party other than Energy Matters;
- > damage caused by 'Acts of God', vermin, animals or pests or by other causes or acts outside Energy Matters' reasonable control; or
- > normal wear and tear, including normal weathering.

Jurisdiction

Our Warranty against Defects is to be construed in accordance with the laws of Victoria and any disputes will be determined by the exclusive jurisdiction of the courts of Victoria.

CONSUMER GUARANTEES

In addition to our Warranty against Defects, the Frame also comes with guarantees that cannot be excluded under the Australian Consumer Law (**Consumer Guarantees**).

In the event that the Frame fails to satisfy a Consumer Guarantee, you are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the Frame repaired or replaced if the Frame fails to be of acceptable quality and the failure does not amount to a major failure.

Please note that in addition to the rights and remedies set out in this document, you may also have other rights and remedies available to you under the law.

CONTACT DETAILS

Energy Matters Pty Ltd (trading as Energy Matters and Apollo Energy)

Address: 359-361 City Road Southbank, VIC, 3006

Postal Address: PO Box 5265 South Melbourne, VIC, 3205

Sales and Service: 133 SUN (133 786)

(local call from anywhere in Australia)

International: +61 3 9697 1900

Fax: +61 3 9697 1919

Email: sunlock@apolloenergy.com.au

MAINTENANCE AND CLEANING

6106-T6 aluminium is largely maintenance free. In highly polluted or marine conditions it is advised to rinse with clean water at least once a year or during schedule panel cleaning.

REFERENCES

AS/NZS 1170.2:2011 on wind actions

AS/NZS 16641.1:1997 on aluminium structures

AS/NZS 1720.1:2012 on timber structures

AS/NZS 1170.2:2011 on wind actions

AS/NZS 4600:2005 on cold-formed steel structures

AS3566:2011 on self-drilling screws for the building and construction industries

CERTIFICATE OF COMPLIANCE

24th October 2013

Energy Matters Pty Ltd
359-361 City Road
Southbank VIC 3006



PARTRIDGE
STRUCTURAL | REMEDIAL | EVENT

Attention: Mr James Mumford

STRUCTURAL DESIGN CERTIFICATE

Project Description: Sunlock Commercial Framing Calculator

We, Partridge Structural Pty Limited, being professional Structural Engineers within the meaning of the Building Code of Australia, hereby certify that we have carried out a review of the source code used by the 'Sunlock Commercial Framing Calculator', and that this work is in accordance with the relevant provisions of the Standard Building Codes and in accordance with accepted engineering practice and principles.

The review has been carried out based on the assumptions listed below, the standard Sunlock documentation appended and the calculator source code appended.

Assumptions:

- $M_1 = 1.0$ (Flat terrain)
- $M_2 = 1.0$ (No shielding)
- $M_3 = 1.0$ (Any wind direction)
- Maximum solar panel size 1680 mm x 1000 mm
- Sunlock Channel V2 Foot Capacity = 2.27kN
- Sunlock 5° and 15° Bracket Capacity = 1.28 kN
- Sunlock 10° Bracket Capacity = 1.70 kN

Relevant Australian Standards:

- AS/NZS 1170.0:2011- Structural design actions, Part 0: General principles
- AS/NZS 1170.1:2011- Structural design actions, Part 1: Permanent, imposed and other actions
- AS/NZS 1170.2:2011- Structural design actions, Part 2: Wind Actions
- AS/NZS 1664.1:1997- Aluminium Structures, Part 1: Limit State Design
- AS/NZS 4600:2005- Cold-formed steel structures

Relevant Documentation:

- Partridge Drawing: 2013S0075 / S6.1A: 'Sunlock Commercial Roof Bracket Framing System for a Sheeted Roof- MAX 10° pitch' attached.
- Calculator source code attached.

This certification extends to the design of the mounting system ONLY. The structural adequacy of the roof to support the additional loading from the solar array should be determined and certified by a suitably qualified structural engineer.

Signed,

Rob O'Reilly
BE(Hons) MIEAust CPEng NPER(Structural) RPEQ
Associate Director

For and on behalf of:
Partridge Structural Pty Ltd

Level 5, 1 Chandos Street, St Leonards NSW 2065 Australia
t 612 9460 9000 f 612 9460 9090 e partridge@partridge.com.au
www.partridge.com.au
Partridge Structural Pty Ltd - 73 002 451 925
Partridge Event Pty Ltd - 50 120 601 433
Partridge Remedial Pty Ltd - 89 145 990 521

J2013S-0075.008-rv1-commercial calculator

