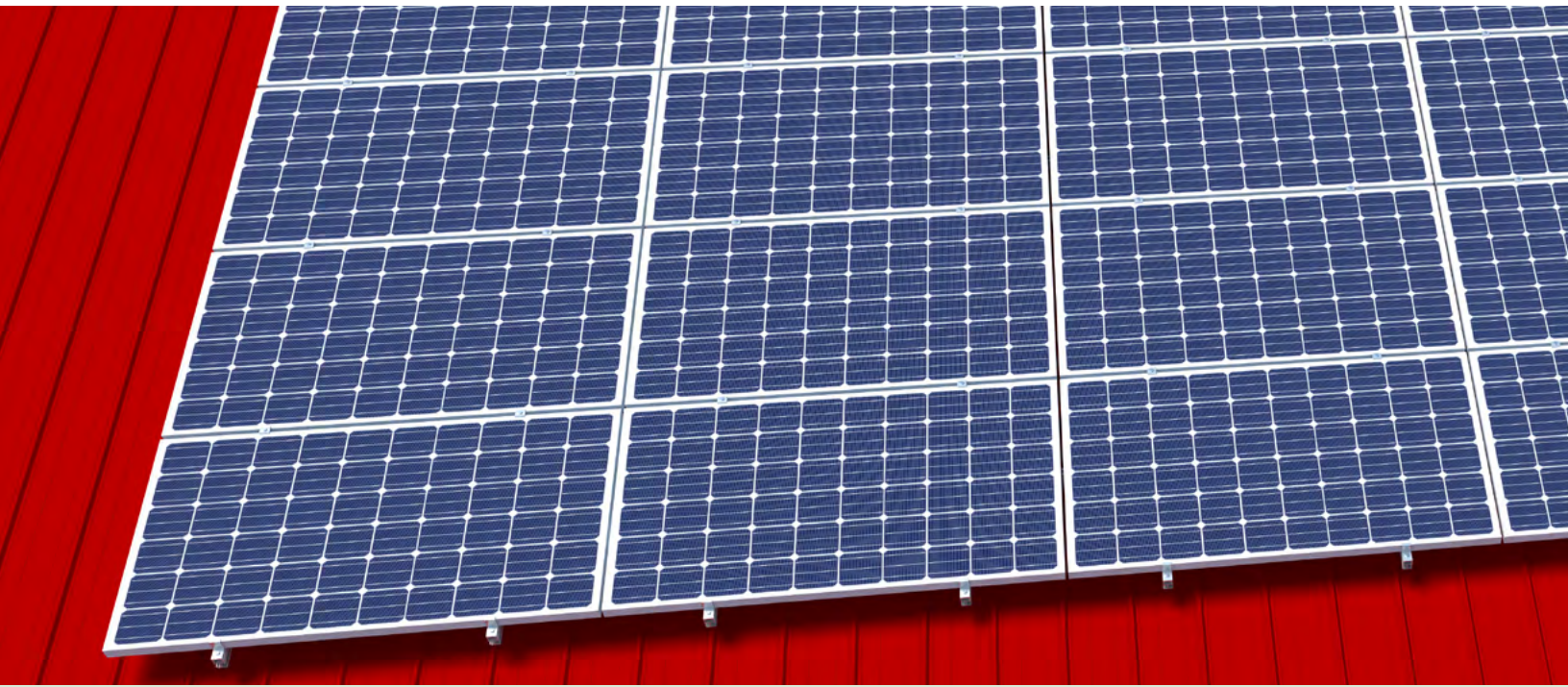


SUNRAIL LITE[®] 2 LAYERS

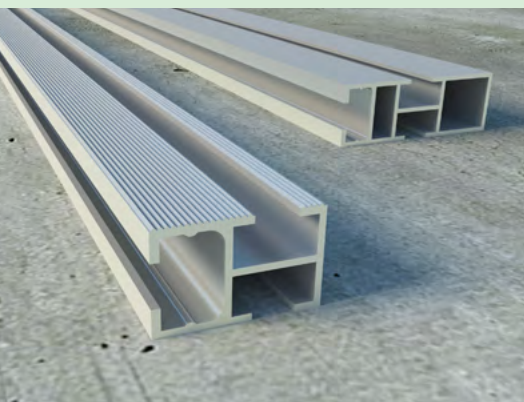
TILTED ROOF MOUNTING SYSTEM



SUNRAIL LITE[®] TILTED ROOF MOUNTING SYSTEM



SUNRAIL LITE[®] EXTRUSION



Distinct, smaller extrusion.

Opsun's patented* SunRail Lite[®] extrusion composes the entire mounting system, allowing contractors the flexibility, on-site control and familiarity of wood construction beams.

Optionally, custom length pre-cut rails add convenience, reduce waste and minimize labor time.

COMPLETE X/Y MATRIX



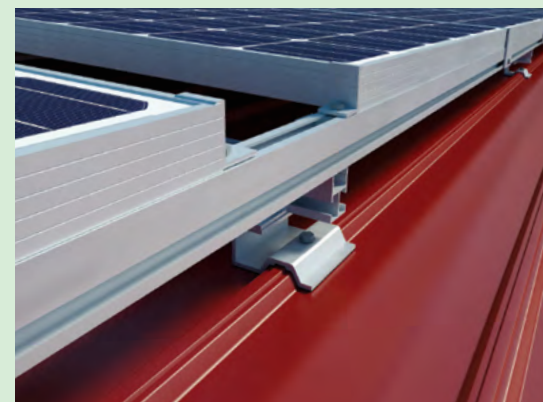
Flexible fixture and rail positioning.

With both vertical and horizontal rails, the SunRail Lite[®] commercial tilted roof mounting system seamlessly conforms to virtually any roof truss structure and orientation.

- The vertical rails support the panels on both sides.
- The horizontal rails connect the system to the roof fixtures.

This configuration allows complete freedom in the positioning of roof fixtures, both on the X-axis and the Y-axis.

HEAT EVACUATION



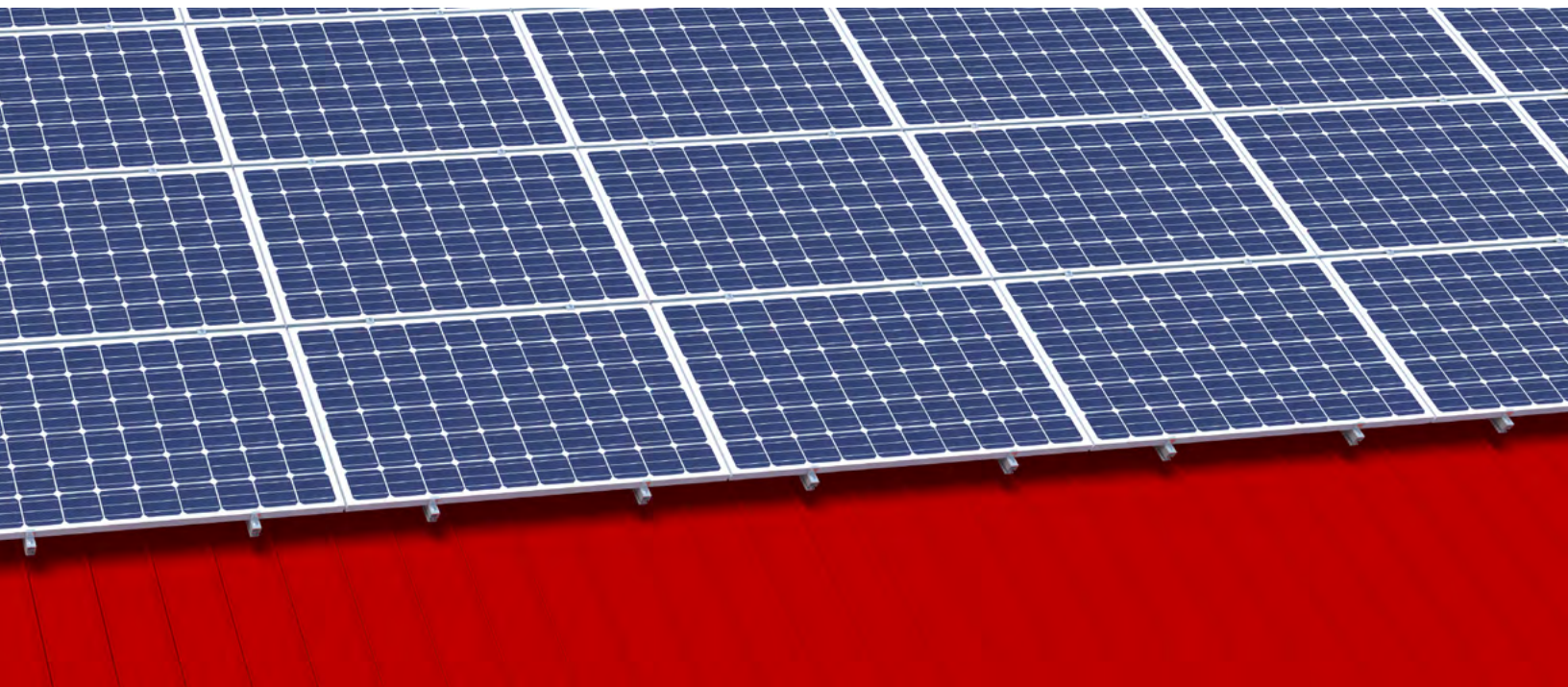
Optimized thermal management.

The operating temperature of a solar system dramatically affects performance.

The SunRail Lite[®] is optimized for maximum heat evacuation and air cooling.

- Air gap up to 8.5 inches between the roof and panels allows air to flow freely underneath the system.
- System allows to add narrow or large gaps in the array to facilitate heat evacuation and maintenance.

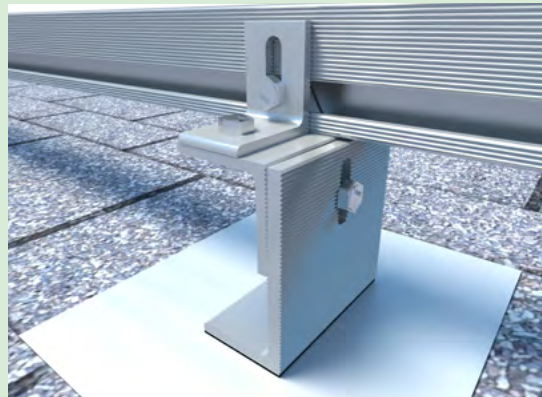
**US Patent US8387319



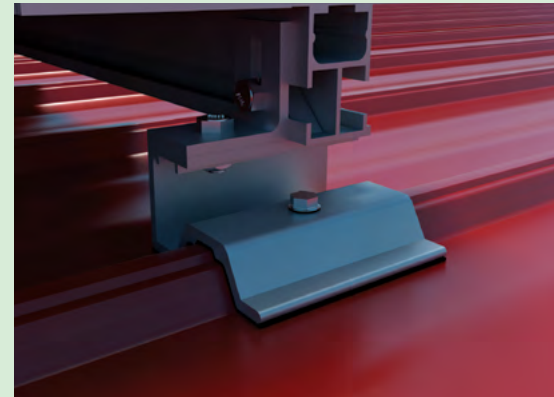
ENGINEERED DESIGN

- Slotted corner clamps allow a margin of error and facilitate installations on uneven roofs.
- Panel U-clamps are located inside the array and hold four panels each.
- Panel Z-clamps hold the array at the front, back and sides.

FLUSH MOUNT FIXTURE



SHEET METAL FIXTURE



Fast, convenient assembly.

All patented* clamps are strongly built and feature Opsun's lock nut for fast installations.

Structural Integrity.

Cross-linking rails create a new light-weight structure on the roof, minimize structural stress and distribute point loads on nearby fixtures.

Simple and effective.

Opsun's flush mount fixture is composed of a clamp and a flashing.

- The flashing goes under shingles and allows a level install where shingles overlap.
- Sealing with the roof can be done using Opsun's adhesive membrane or silicon caulking.
- Installer drills hole in desired position for easier alignment with roof trusses.
- Flashing is made of marine grade aluminum to ensure maximum reliability and durability.

Proper insulation on top of each flashing is ensured by Opsun's adhesive membrane and self-sealing stainless steel washers with bonded EPDM rubber seals.

The fixture is designed to allow up/down and sideways adjustments.

Engineered and tailored.

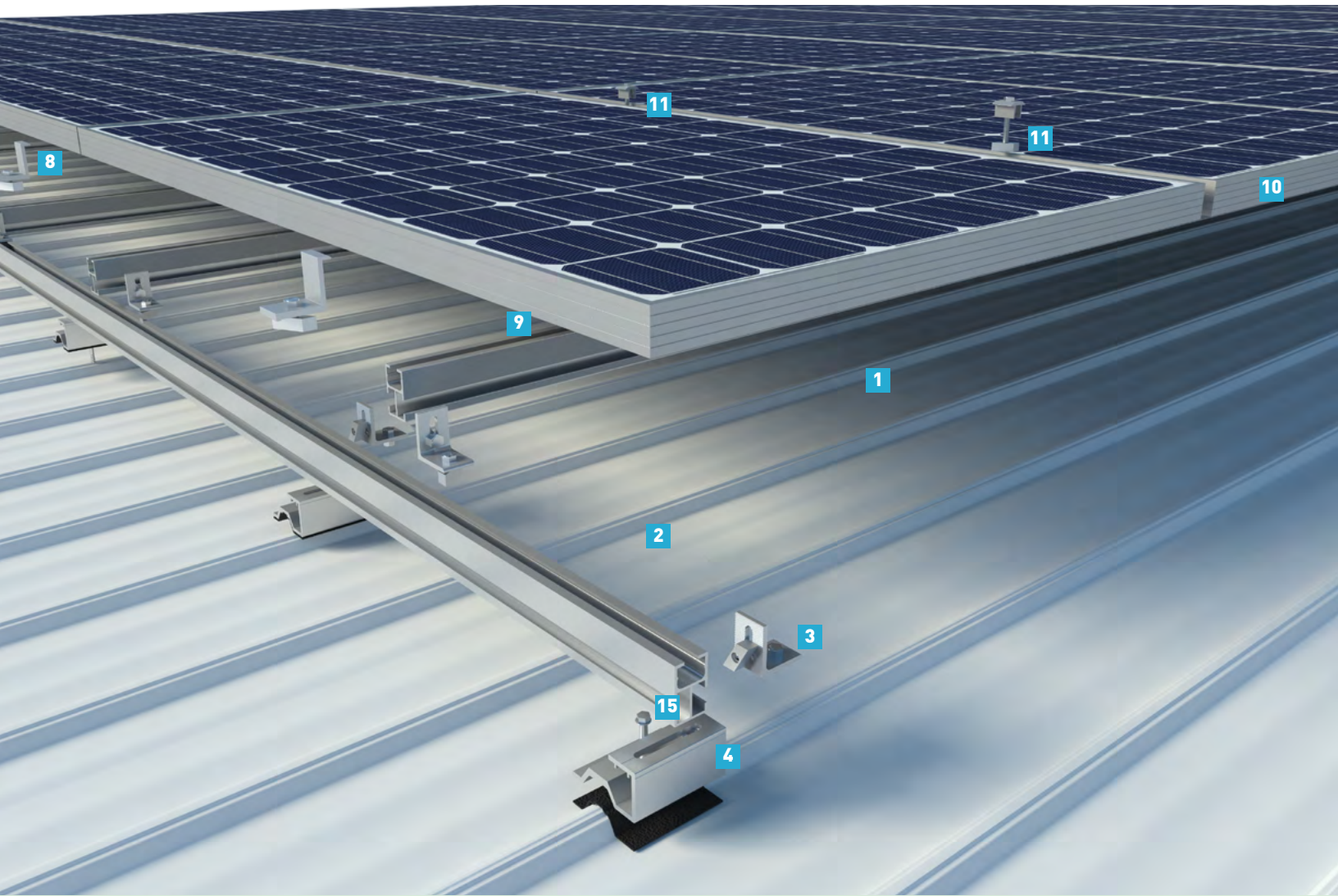
To ensure maximum strength and insulation, Opsun provides sheet metal fixtures that are extruded specifically to the shape of most sheet metal profiles.

The sheet metal fixture uses the existing screw holes on the ribs for fastening. The weight, however, is distributed on the flat furring strips.

Opsun's adhesive membrane is applied under the fixtures to create a strong bond with the roof and insulate. Self-sealing stainless steel washers with bonded EPDM rubber seals ensure proper insulation.

The fixture is designed to allow vertical and horizontal adjustments.

SUNRAIL LITE[®] TILTED ROOF MOUNTING SYSTEM



SPECIFICATIONS

- Structural engineer stamped.
- Made in Ontario to meet OPA domestic content requirement.

Typical weight per surface: Mounting only: 2.61 kg/m² (0.53 lb/ft²)
With PV: 14.8 kg/m² (3.03 lb/ft²)

Rail weight: 1.335 kg per meter

Panel layout: Landscape or portrait

PV panel compatibility: Any panel with a 35-50mm frame

Maximum rail length: 24ft

Rail material: 6005-T5 aluminium with mill finish

Clamp material: 6005-T5 and 6061-T6 aluminum

Bolt material: Stainless steel

Finish: Mill finish or anodised (black or color)

Maximum wind load: 130mph

Panel height from roof : 8.5" air gap

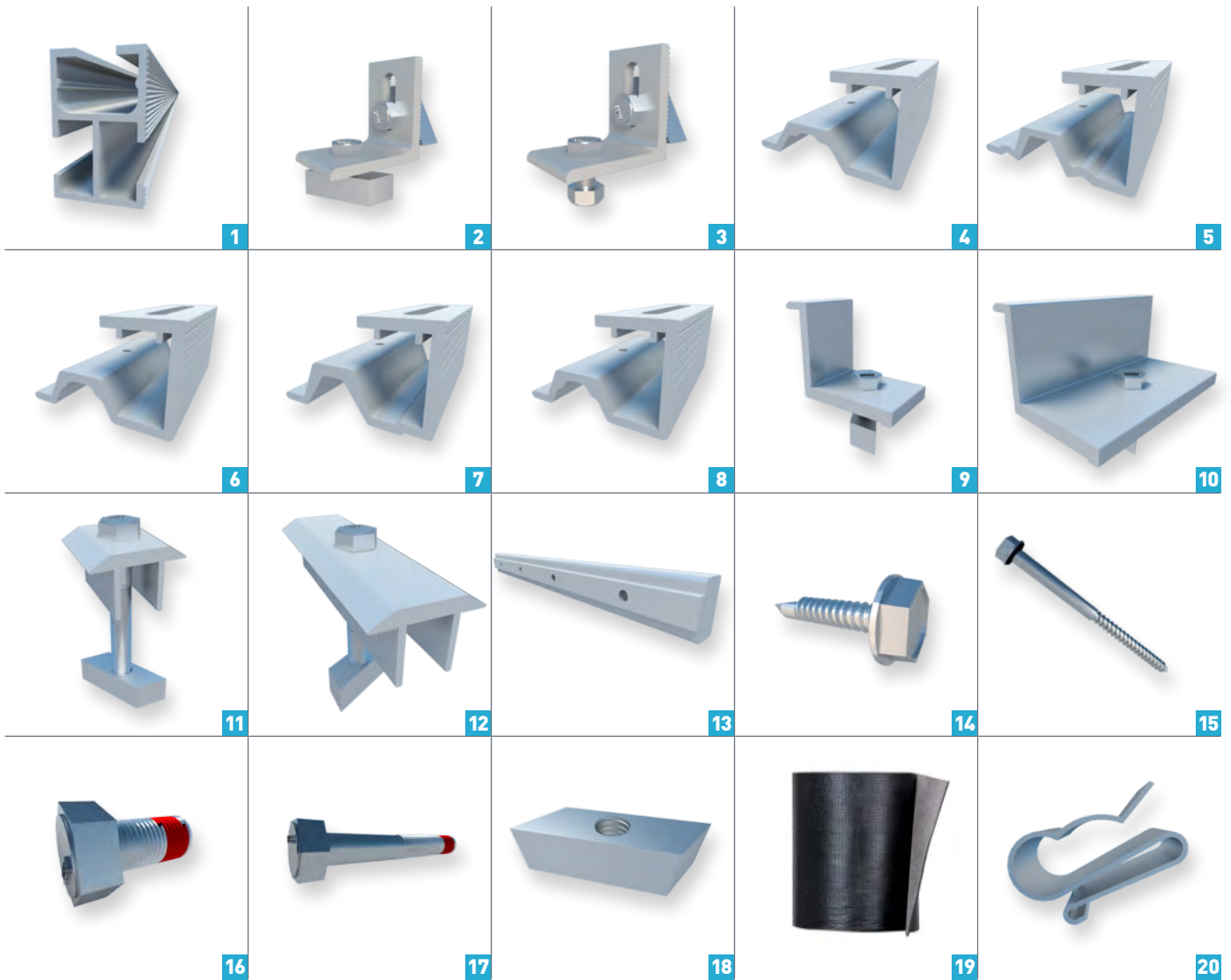
Contact Surface: Patented roof fixtures* are installed with adhesive membrane or flashing

Required Tools

- 9/16 socket wrench
- Impact drill
- 5/16 socket wrench for drill
- Number 19 drill bit
- Heavy duty cutter
- Trestles
- Chopsaw with aluminum blade

*US Patent US8387319

COMPONENT LIST

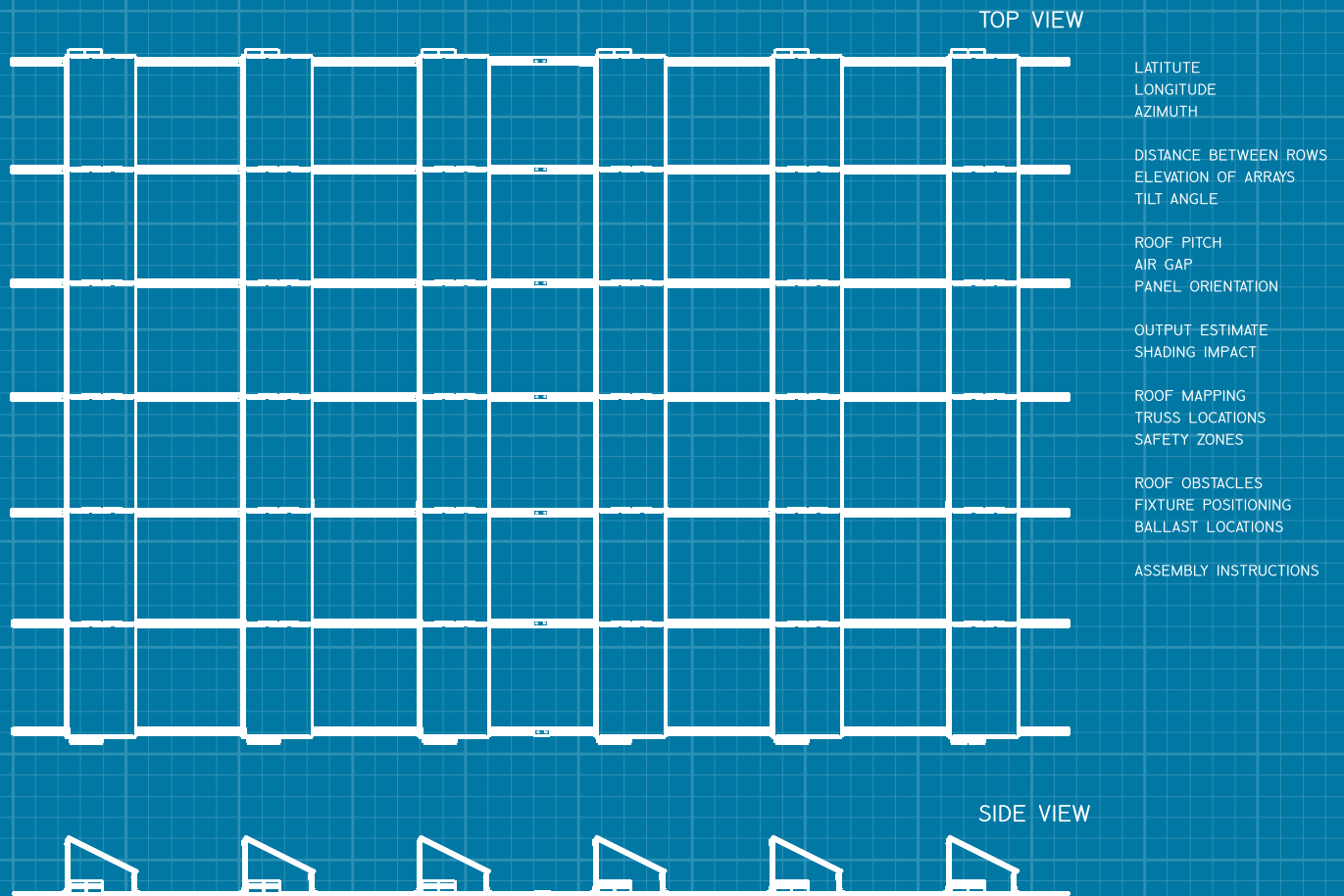


OPSUN SUNRAIL LITE®

All ordered clamps come with their respective bolts and locks.
Roof fixtures come with pre-applied adhesive membrane.

1	SRL-18ft	SRL (SunRail Lite®) extrusion	11	SRL-UC2	U-clamp; type 2
2	SRL-CC-A1	SRL corner clamp; Assembly 1	12	SRL-UC1	U-clamp; type 1
3	SRL-CC-A2	SRL corner clamp; Assembly 2	13	SRL-RL5	SRL rail link; type 5
4	SRL-SMC1	Sheet metal fixture; type 1	14	SDS-SS-12-1	Stainless self drilling screw 12-1"
5	SRL-SMC2	Sheet metal fixture; type 2	15	LB-SS-1/4-3	Lag bolt with self-sealing washer
6	SRL-SMC3	Sheet metal fixture; type 3	16	BL-SS-0.75	Stainless 3/4" bolt with Loctite
7	SRL-SMC4	Sheet metal fixture; type 4	17	BL-SS-2.5	Stainless 2-1/2" bolt with Loctite
8	SRL-SMC5	Sheet metal fixture; type 5	18	LN1-SS	Stainless lock nut
9	SRL-ZC50-ER	Z-clamp End-row (38, 40, 42, 45 or 50mm)	19	OPS-M	Opsun Sealing Membrane
10	SRL-ZC50	Z-clamp (38, 40, 42, 45 or 50mm)	20	WCC	Wiley cable clip

TOTAL SUPPORT



FEASIBILITY STUDY AND PLANNING

Structural and environmental assessments help clients determine the feasibility of a proposed project before investing too much time and money into it. Geo-localisation is used to model neighbouring buildings and evaluate shading issues.

SYSTEM OPTIMIZATION

PVSyst calculations and simulations are run for complete and accurate output estimates. Opsun provides their clients optimized solutions that ensure a maximum return on investment for every system.

ENHANCED CODE-COMPLIANCE

Data from wind tunnel tests of Opsun's SunRail™ system and engineering calculations, in addition to the building code, help structural engineers determine the correct required amount of ballasting/anchoring. The evaluation of wind zones as per the building code and load analyses that takes account of snow and wind loads streamline the rubber stamping process.

BUILDING INTEGRATED SOLUTION

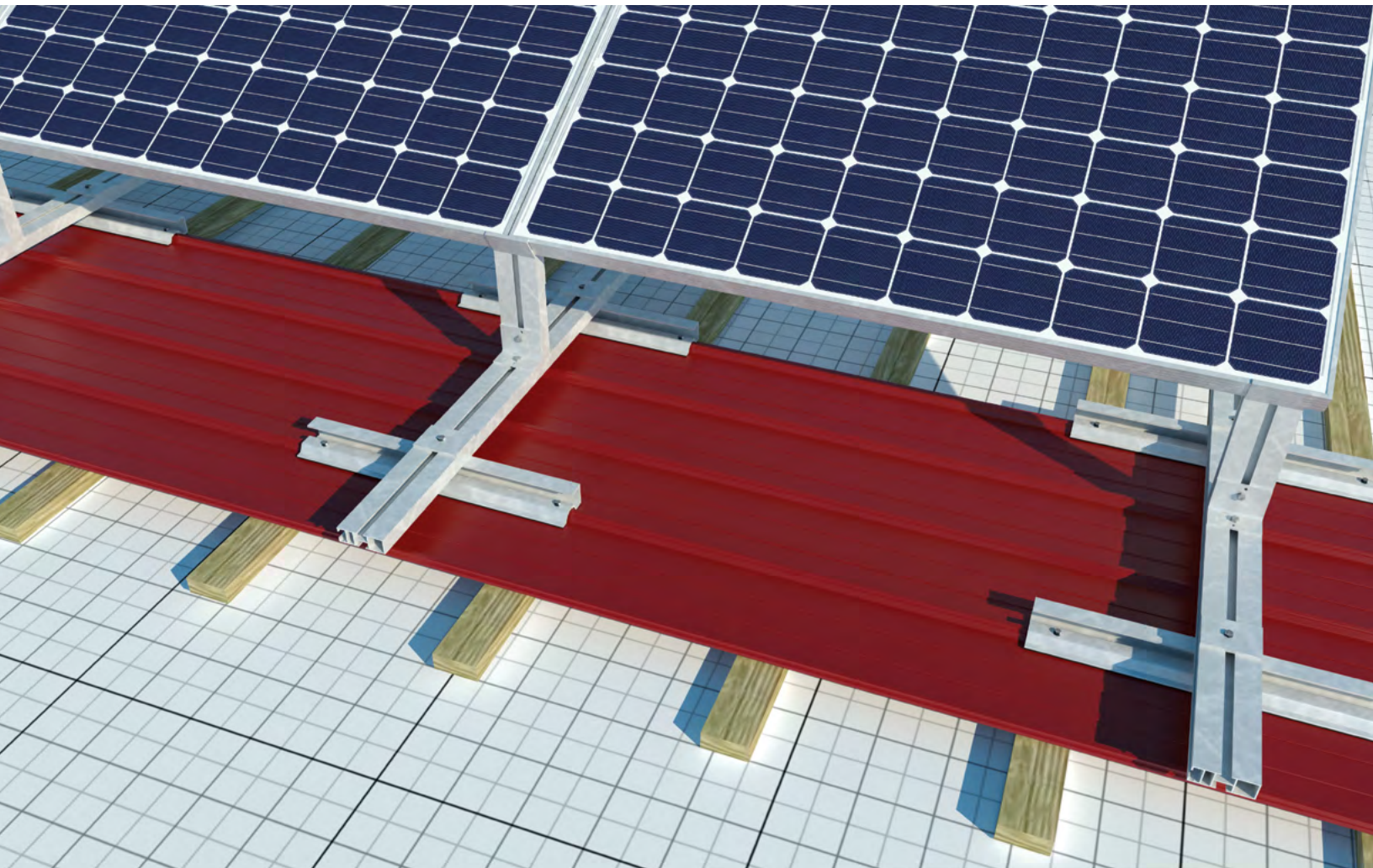
Opsun team's can custom design a solar solution integrated to your old or new building.

TOTAL SUPPORT IS STILL SUPPORT

Opsun's Total Support service is quite comprehensive, yet Opsun remains a pure player manufacturer. Opsun is the ideal partner for integrators, developers, installers and distributors and **does not engage** in the following services:

- ∅ Direct installation
- ∅ OPA FIT applications
- ∅ Connection impact assessments
- ∅ Project management
- ∅ System financing
- ∅ Rooftop prospection

TOTAL SUPPORT



TECHNICAL ASSISTANCE

Opsun works together with clients to determine the optimal layout and configuration of solar systems as required.

- Accurate technical drawings and 3D renderings of building with solar array.
- Project-specific technical drawings with precise measurements to facilitate installations, reduce on-site costs, avoid unexpected issues and limit risk as much as possible.

TECHNICAL SOLUTIONS

Most of Opsun's technological innovations are customer demand-driven. Opsun's well-developed solutions to structural challenges increase the range of feasible projects.

Examples of specialized applications:

- Tilt panels on a sloped roof.
- Install panels on a low-pitched East-West roof.
- Minimize ballasting to avoid using anchors.

Opsun aims to have unique and precisely shaped extruded roof fixtures for every sheet metal profile in the North-East.

LOGISTICAL SOLUTIONS

Control of manufacturing and logistics grants Opsun flexibility and creates value for partners and clients.

- Pre-assembly of components for faster on-site installations.
- Just-in-time on-site delivery of all components according to client requirements.
- Transportation and warehousing solutions.

INSTALLATION SUPPORT

Opsun's engineering staff is expert on everything related to solar equipment and the installation of a solar array.

- Training of installation teams and maintenance staff.
- Coaching of early installations to ensure flawless execution.
- Expert, personalized phone support for technical assistance during installations to help resolve issues when they arise.

FOR MORE INFORMATION ABOUT
OUR PRODUCTS AND SERVICES PLEASE VISIT
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