TECHNICAL DATASHEET

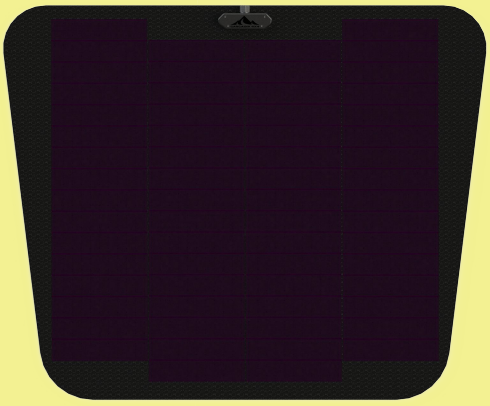
CASCADIA 4X4
THE OFF-ROAD ANOMALY

VSS SYSTEM™ 2.0 | CHF158 | 92W

The Cascadia 4x4 VSS System™ 2.0 is the latest iteration of the world's first vehicle specific hood solar panel system, and it's packed with new technology. The solar panel attaches directly to the vehicle hood using Cascadia 4x4's SolarClasp™ Technology, enabling it to be removable, and creating an insulative air-pocket for cooling.

Cascadia 4x4's vehicle hood solar panel provides high-efficiency, clean energy generation on otherwise empty space. It uses the power of the sun to keep the vehicle battery fully charged.

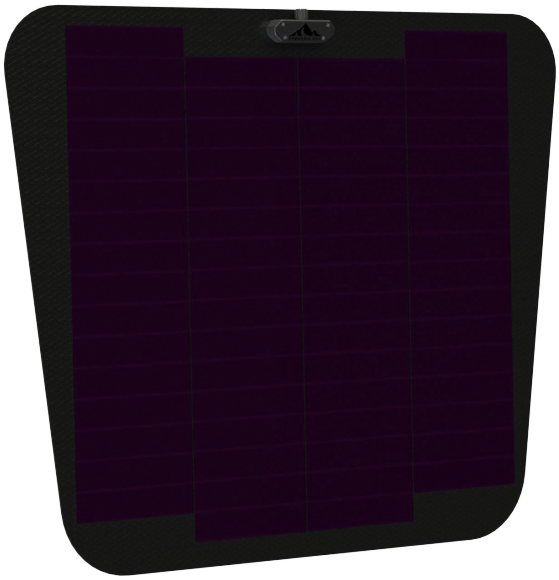
The system is capable of powering solar generators, fridges, handheld devices, emergency devices, lights, tools, and overlanding accessories without any maintenance or setup beyond initial installation. System monitoring and programming is available via the CascadiaTether™ Bluetooth app.



Hood Solar Panel [CHF158]

APPLICATIONS (CHF158 | 92W)

MAKE MODEL	YEARS
Lexus LX 450	1995 - 1997
Lexus LX 470	1998 - 2007
Lexus GX 470	2003 - 2009
Nissan Frontier	2005 - 2021
Nissan Xterra	2005 - 2015
Toyota 4Runner (non-hood scoop)	2003 - 2024
Toyota Land Cruiser J80	1990 - 1997
Toyota Land Cruiser J100	1998 - 2007
Toyota Land Cruiser J250	2024 - 2025
Toyota Tacoma (non-hood scoop)	2005 - 2015
Toyota Tundra	2000 - 2006



Hood Solar Panel [CHF158]

KEY FEATURES

- Top-Grade Monocrystalline Solar Cells (~23% Efficiency)
- Removable and Replaceable via SolarClasp™ Technology
- Sealed Air Gap Beneath Solar Panel for Cooling
- Bluetooth App for Monitoring and Programming
- High Efficiency Contiguous Cell™ Technology
- High Impact, Abrasion, and Cut-Through Resistance
- Anti-Glare Properties from Matte ETFE Top Sheet
- Excellent Chemical and UV Resistance
- Extreme Temperature Operational Range
- Flexible Construction Conforms to Vehicle Bodywork
- Sleek OEM-Adjacent Design
- Impact Resistant Junction Box
- Self-Cleaning Low Friction Surface
- 2 Year Warranty (Optional 5 Year)
- Made in Canada with Globally Imported Parts

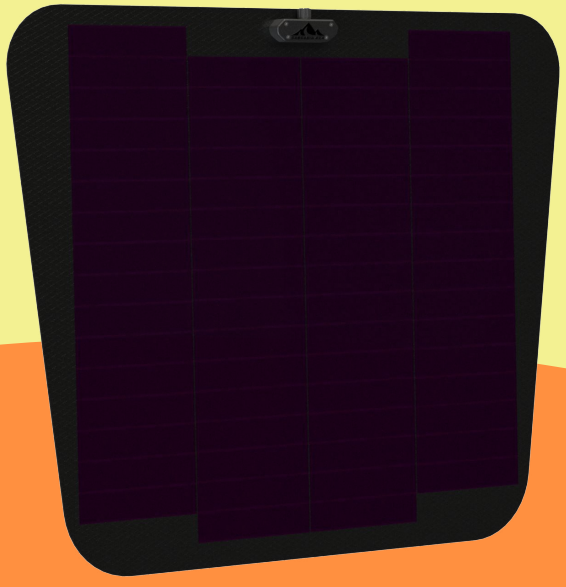
TECHNICAL DATASHEET

CASCADIA 4X4
THE OFF-ROAD ANOMALY

ELECTRICAL SPECIFICATIONS (CHF158 | 92W)

PARAMETER	VALUE
Maximum Power @ STC	92 W
Short Circuit Current (Isc)	5.18A
Open Circuit Voltage (Voc)	25.58 V
Optimum Operating Current (Imp)	4.33 A
Optimum Operating Voltage (Vmp)	21.27 V
Cell Efficiency	22.7% - 22.9%
Temperature Coefficient (Voc)	-0.36% / °K

- Our Production Facility has ISO 9001, ISO 14001, ISO 45001 and SA8000 Quality Management Certifications
- Our Solar Panels Comply with IEC 61215 and IEC 61730 Standards for Long Term Use in Open-Air, Terrestrial Environments
- CE Marking for European compliance
- RoHS (Restriction of Hazardous Substances) and REACH compliant to protect humans and the environment



Hood Solar Panel [CHF158]

MECHANICAL SPECIFICATIONS (CHF158 | 92W)

PARAMETER	VALUE
Solar Cell Technology	Contiguous Cell
Connector Type	MC4
Cable Length	190 cm \ 74.8 in
Top Sheet Material	ETFE
Packaged Dimensions (Panel Only)	[81 x 92 x 5 cm] \ [32 x 36 x 2 in]
Packaged Weight (Panel Only)	5.5 kg \ 12 lb

WARRANTY AND LIABILITY

Warranty Period: 2 years from the date of purchase. Extendable to 5 years

Liability: Cascadia 4x4 is not liable for damages resulting from improper installation or operation

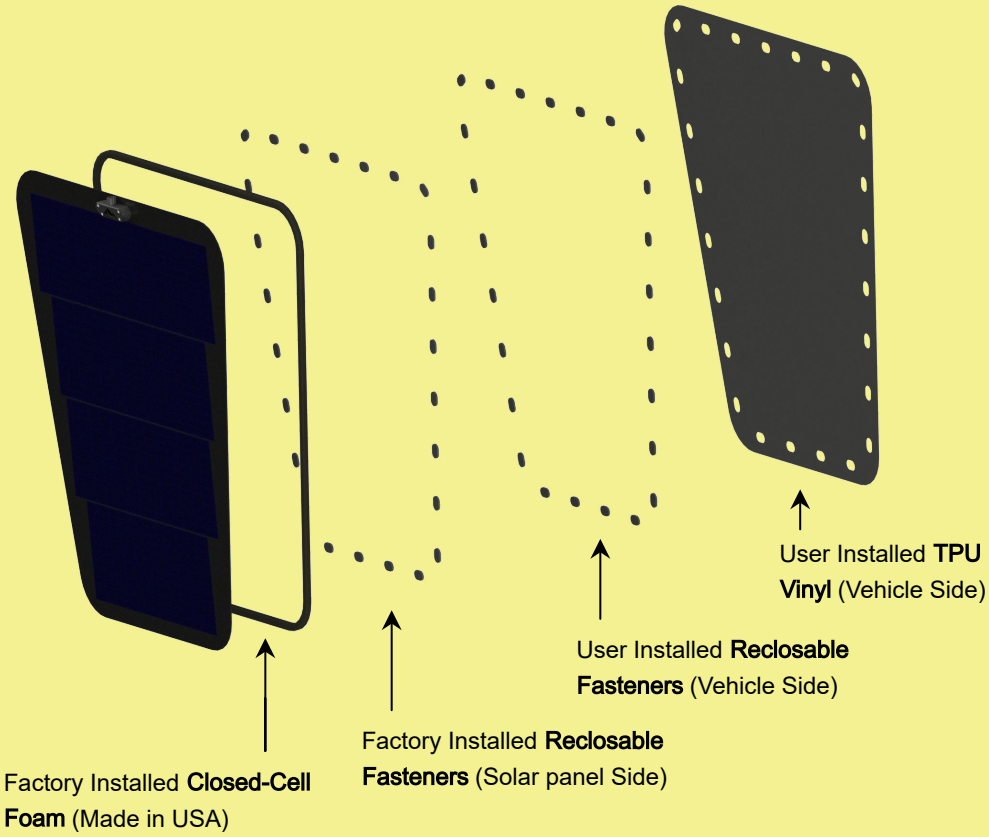
SOLARCLASP™ TECHNOLOGY

The VSS System™ 2.0 utilizes Cascadia 4x4's SolarClasp™ Technology to affix the solar panel onto the vehicle. 3 years of R&D led to us perfecting this novel method of securely attaching solar panels.

**Patent Pending*

BENEFITS

- **Removable**
- **Replaceable**
- **Transferable**
- **Air Cooling**
- **Higher Efficiency**
- **Longer Service Life**

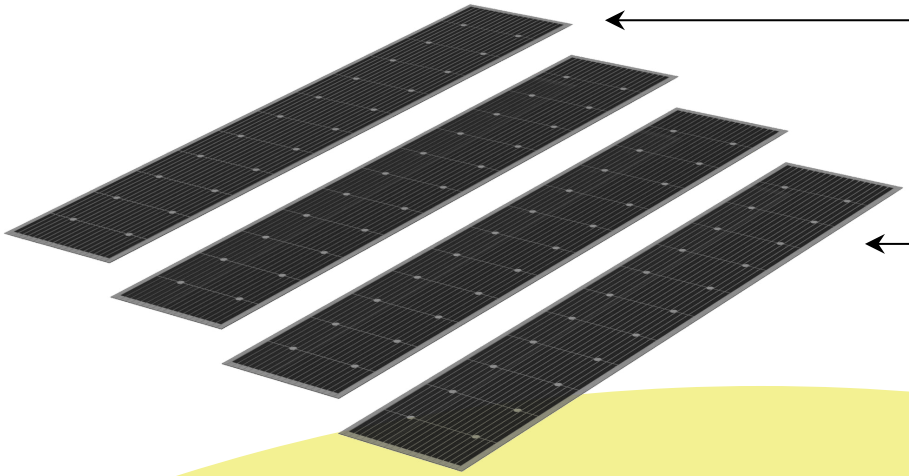


SolarClasp™ Technology employs an array of commercial-grade reclosable fasteners, and a closed-cell foam perimeter to create a securely attached, yet still easily removable solar panel. This allows the solar panel to be transferred between vehicles, or easily replaced in the case of damage or repair. SolarClasp™ also creates a thermally-insulative air gap between the solar panel and the vehicle. This limits thermal bridging and keeps the solar panel cooler, extending its service life and efficiency.

CONTIGUOUS CELL™ TECHNOLOGY (CCT)

Cascadia 4x4's Contiguous Cell™ Technology (CCT) is used on all VSS System™ 2.0 solar panels. CCT is a new type of solar panel assembly technique whereby solar cells are attached directly to each other using an electrically conductive adhesive along the entire length of the cell.

This removes the weak connections that are common points of failure on traditional semi-flexible solar panels. It also allows solar cells to be placed without any space between them, reducing the unproductive surface area of the solar panel.



Each Solar Cell Strip is Contiguously Attached Using an Electrically Conductive Adhesive.

Solar Cells are Laser-Cut into Strips, and then Reassembled Using Cascadia 4x4's Automated, and Patented Manufacturing Process.

"CCT does away with traditional busbar connections in favour of a much more robust, and efficient system."

–Tom Dyakowski, Product Architect, Cascadia 4x4

More Power

More Durability

More Wattage Per Unit Area

Stronger Connections Between Cells

TECHNICAL DATASHEET

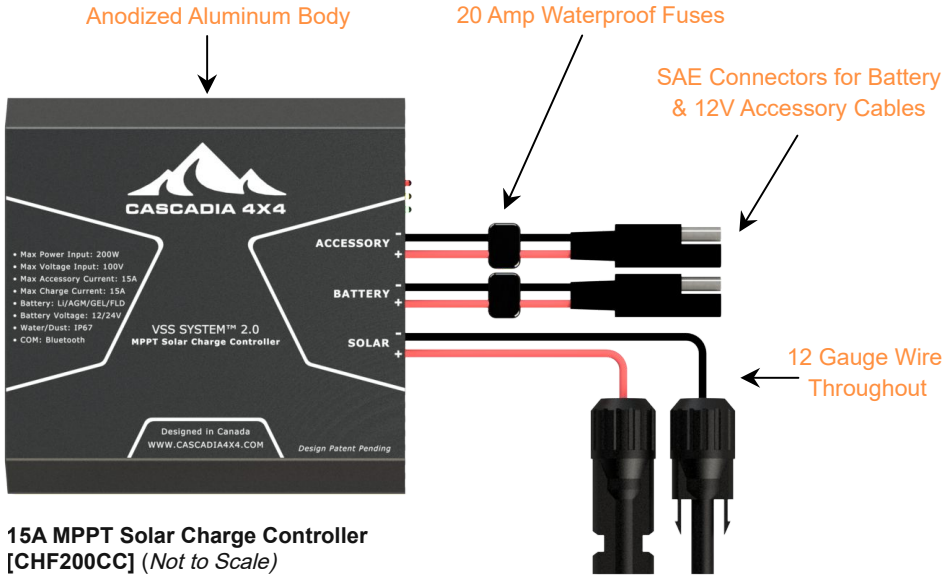
MPPT BLUETOOTH CHARGE CONTROLLER (15A) [CHF200CC]

The VSS System™ 2.0 features an optional MPPT Bluetooth Charge controller that was designed from the ground up to work seamlessly with Cascadia 4x4 solar panels for vehicle hoods, roofs, and rooftop tents. This unit is extremely rugged and has the capability of being mounted outside in wet, dusty, hot, or cold environments thanks to an IP67 waterproof rating.

Impact resistance and durability are provided by an extruded aluminum body. Plug-and-play wiring, and the CascadiaTether™ Bluetooth app make system setup and monitoring easier than ever before. Add the optional 12V Accessory Kit [CHF300] to power fridges, solar generators, power stations, smartphones, laptops, and more.

KEY FEATURES

- Bluetooth App for Monitoring and Programming
- Waterproof/Dustproof IP67 Rating
- Monitor via CascadiaTether App
- Plug-And-Play Wiring (12 Gauge)
- 5 Year Warranty
- Designed in Canada



15A MPPT Solar Charge Controller [CHF200CC] (*Not to Scale*)

1m / 3.3' Battery Cable (Included With CHF200CC) (*Not to Scale*)

MC4 Connectors

3m / 9.8' Battery/Accessory Extension Cable (Optional) [CHF302] (*Not to Scale*)

1m / 3.3' Battery/Accessory Extension Cable (Optional) [CHF301] (*Not to Scale*)

The CascadiaTether™ Bluetooth App

ELECTRICAL SPECIFICATIONS (CHF200CC)

PARAMETER	VALUE
Max Power Input	200 W
Max Voltage Input	100 V
Max Accessory Current	15 A
Max Charge Current	15 A
Battery	Li / AGM / GEL / FLD
Water / Dust	IP67
COM	Bluetooth

12V ACCESSORY KIT [CHF300]

The 12V Accessory Kit gives deeper functionality to the VSS System™ 2.0. It plugs into the Cascadia 4x4 MPPT Bluetooth Charge Controller (15A) and draws power directly from the battery being charged by solar. Users can program the voltage cut-off parameters via the CascadiaTether app to automatically cut power to the device when the battery reaches a user-defined voltage.

The 12V Accessory Kit features a USB-C (PD 65W), a USB-A (QC 3.0), a 12V power socket, and a digital voltmeter. Cascadia 4x4 uses 12 gauge wiring throughout to minimize efficiency loss. Waterproof port covers make the unit suitable for indoor or outdoor installation.

A 1m / 3.3' power cable is supplied, and Cascadia 4x4 offers extension cables that can be daisy-chained together depending on where the user wants to place the 12V Accessory Kit.

The 12V Accessory Kit is the easiest way to draw energy directly from the VSS System™ 2.0 to power fridges, solar generators, power stations, smartphones, laptops, and more.

12V Accessory Kit [CHF300]

KEY FEATURES

- USB-C, USB-A, and 12V Power Socket
- Digital Voltmeter/Ammeter
- Bluetooth App for Monitoring and Programming
- Plug-And-Play Wiring (12 Gauge)
- 5 Year Warranty
- Designed in Canada

CIRCLED
12V ACCESSORY KIT [CHF300]
(INCLUDES 3M / 9.8' POWER CABLE)