

# 8 Channel MPPT SMU

infiniPV ApS offers a novel 8 channel SMU with full maximum power point tracking (MPPT) on all channels. This new series of products are excellent for solar cell research where you mandatorily need each device to be kept at MPPT continuously. Our SMU products range from the very large multiplexed systems with 16-64 channels, high voltage systems, systems with full device access, systems with possibilities to attach active loads as needed to small portable systems from 1-4 channels with MPPT. The 8 channel MPPT SMUs were developed as a cost-efficient system that essentially comprise 8 individual SMUs inside that can be used to maintain a position in the 4<sup>th</sup> quadrant or sweep the IV-curve either continuously or at regular intervals. It is very easy to control and set up experiments using our ISOS-software. The system is fully downwards compatible with our ISOSun solar simulator and its accessories such as the ISOS-L-3 chamber and ISOS-TC thermal cycling hardware. The system is powered by 110-240VAC (or simply 240 VAC) and is available in two versions the 8CH version that operates with our existing ISOS-L-3 chamber users and a 8+2CH version that has an additional set of relative humidity and temperature probes. This latter unit also has a touchscreen function.

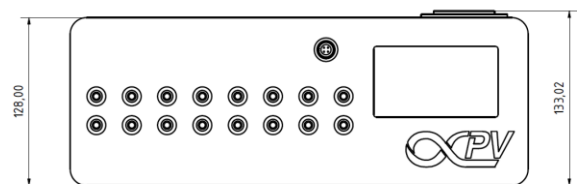
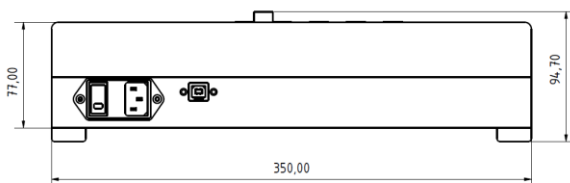


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## Key highlights:

infiniPV 8 channels MPPT SMUs are unique on several fronts:

- Compact size (350 mm x 133 mm x 95 mm)
- Banana plugs (4 mm) for robust and versatile connection to devices
- 16 bit resolution (operation range -4V to +4V / 40 mA)
- Operates from 110-240 VAC (or 240 VAC) or from the USB connection alone for field work
- Downwards compatible (with ISOS-L-3 chambers)
- Fully independent maximum power point tracking (MPPT) on all 8 channels
- Available with additional channels for temperature and humidity tests
- Available with touch screen
- Designed for continuous operation for many years
- Fully CE-approved and compliant
- Rugged milled aluminium enclosure
- Weather input is easily software configured to accepts a large range of weather probes (resistive, voltage, current, source V / measure I, source I / measure V)
- Free software available online with the most recent additions



## SMU Selection Guide

There are 2 overall SMU options: **Low Power SMUs** and **High Power SMUs**, each option with a high degree of customization. The **Low Power SMUs** are designed for laboratory PV devices and small modules with a voltage of up to 4 V and a current of up to 40 mA. The **High Power SMUs** can be applied for both small laboratory PV devices and large PV modules with high power output and a voltage of more than 1kV. See tables below for more detailed information:

### - Low Power SMUs:

	USB SMU	8CH MPPT SMU	16CH ISOS SMU
No. of channels	1 (up to 4 with active loads)	8	16
Active load for MPPT (4V/40MA)	Option	Integrated	Option
Voltage range [V]	-4 to +4	-4 to +4	-4 to +4
Current range [mA]	-40 to +4	-40 to +4	-40 to +4
IV scan in	3 <sup>rd</sup> to 4 <sup>th</sup> Quadrant	3 <sup>rd</sup> to 4 <sup>th</sup> Quadrant	3 <sup>rd</sup> to 4 <sup>th</sup> Quadrant
Resolution	16 bit	16 bit	16 bit
Source/Sink Limit	40 mA	40 mA	40 mA
Multiplexed	Optional	Yes	Yes
Weather channels	No	Temp. and humidity	Temp. and humidity
Compatible with ISOS Testing Laboratory	No	No	Yes
Touch screen control	No	Yes	Yes
PC control	Yes	Yes	Yes
Software	IV characterization and lifetime measurement with MPPT option	IV characterization and lifetime measurement with MPPT option	IV characterization and lifetime measurement with MPPT option
Stand alone	Yes	No	No

### - High Power SMUs:

	High voltage SMU	High power SMU	ISOS testing SMU
No. of channels	Up to 16	Up to 16	40
Active load option (4V/40MA)	Yes	Yes	No
Voltage range [V]	0 to 1000	up to 600	-20 to +20
Current range [mA]	-60 to 0	0 to 2500	0 to 1000
IV scan in	4 <sup>th</sup> Quadrant	4 <sup>th</sup> Quadrant	All Quadrants
Resolution	12 bit	12 bit	16 bit
Source/Sink Limit	<250 mA	<5 A*	1 A
Multiplexed	Yes	Yes	Yes
Weather channels	No	No	8 channels for indoor and outdoor weather measurements
Compatible with ISOS Testing Laboratory	No	No	Yes
Touch screen control	Yes	Yes	No
PC control	Yes	Yes	Yes
Software	IV characterization and lifetime measurement with MPPT option	IV characterization and lifetime measurement with MPPT option	IV characterization and lifetime measurement
Stand alone	No	No	No

\*Depending on version