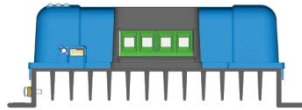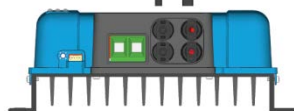# BlueSolar charge controllers with screw- or MC4 PV connection
MPPT 150/45   MPPT 150/60   MPPT 150/70
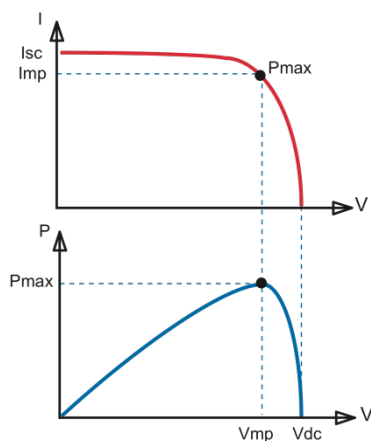
www.victronenergy.com

**Solar charge controller
MPPT 150/70-Tr**

**Solar charge controller
MPPT 150/70-MC4**

Maximum Power Point Tracking

Upper curve:
Output current (I) of a solar panel as function of output voltage (V).
The maximum power point (MPP) is the point Pmax along the curve where the product I x V reaches its peak.

Lower curve:
Output power P = I x V as function of output voltage.
When using a PWM (not MPPT) controller the output voltage of the solar panel will be nearly equal to the voltage of the battery, and will be lower than Vmp.

Ultra-fast Maximum Power Point Tracking (MPPT)
Especially in case of a clouded sky, when light intensity is changing continuously, an ultra-fast MPPT controller will improve energy harvest by up to 30% compared to PWM charge controllers and by up to 10% compared to slower MPPT controllers.

Advanced Maximum Power Point Detection in case of partial shading conditions
If partial shading occurs, two or more maximum power points may be present on the power-voltage curve.
Conventional MPPT's tend to lock to a local MPP, which may not be the optimum MPP.
The innovative BlueSolar algorithm will always maximize energy harvest by locking to the optimum MPP.

Outstanding conversion efficiency
No cooling fan. Maximum efficiency exceeds 98%.

Flexible charge algorithm
Fully programmable charge algorithm (see the software page on our website), and eight preprogrammed algorithms, selectable with a rotary switch (see manual for details).

Extensive electronic protection
Over-temperature protection and power derating when temperature is high.
PV short circuit and PV reverse polarity protection.
PV reverse current protection.

Internal temperature sensor
Compensates absorption and float charge voltage for temperature.

Real-time data display options
 - Apple and Android smartphones, tablets and other devices:
   see the VE.Direct to Bluetooth Smart dongle
 - ColorControl panel

BlueSolar charge controller
MPPT 150/70

PV
3915 W

Battery
57.10 V   67.20 A
Bulk charge
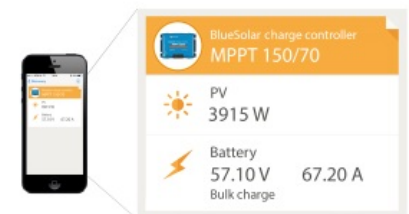
BlueSolar charge controller	MPPT 150/45	MPPT 150/60	MPPT 150/70
Battery voltage	12 / 24 /48 V Auto Select (software tool needed to select 36 V)		
Rated charge current	45 A	60 A	70 A
Maximum PV power, 12V 1a,b)	650 W	860 W	1000 W
Maximum PV power, 24V 1a,b)	1300 W	1720 W	2000 W
Maximum PV power, 48V 1a,b)	2600 W	3440 W	4000 W
Maximum PV open circuit voltage	150V absolute maximum coldest conditions 145V start-up and operating maximum		
Maximum efficiency	98 %		
Self-consumption	10 mA		
Charge voltage 'absorption'	Default setting: 14,4 / 28,8 / 43,2 / 57,6 V (adjustable)		
Charge voltage 'float'	Default setting: 13,8 / 27,6 / 41,4 / 55,2 V (adjustable)		
Charge algorithm	multi-stage adaptive		
Temperature compensation	-16 mV / °C resp. -32 mV / °C		
Protection	Battery reverse polarity (fuse, not user accessible) PV reverse polarity / Output short circuit / Over temperature		
Operating temperature	-30 to +60°C (full rated output up to 40°C)		
Humidity	95 %, non-condensing		
Data communication port and remote on-off	VE.Direct (see the data communication white paper on our website)		
Synchronized parallel operation	Not possible		
ENCLOSURE			
Colour	Blue (RAL 5012)		
PV terminals 2)	35 mm² / AWG2 (Tr models), or Dual MC4 connectors (MC4 models)		
Battery terminals	35 mm² / AWG2		
Protection category	IP43 (electronic components), IP22 (connection area)		
Weight	3 kg		
Dimensions (h x w x d)	200 x 250 x 95 mm		
STANDARDS			
Safety	EN/IEC 62109		

1a) If more PV power is connected, the controller will limit input power to the stated maximum.
1b) PV voltage must exceed Vbat + 5V for the controller to start.
    Thereafter minimum PV voltage is Vbat + 1V
2) MC4 models: several splitter pairs will be needed to parallel the strings of solar panels