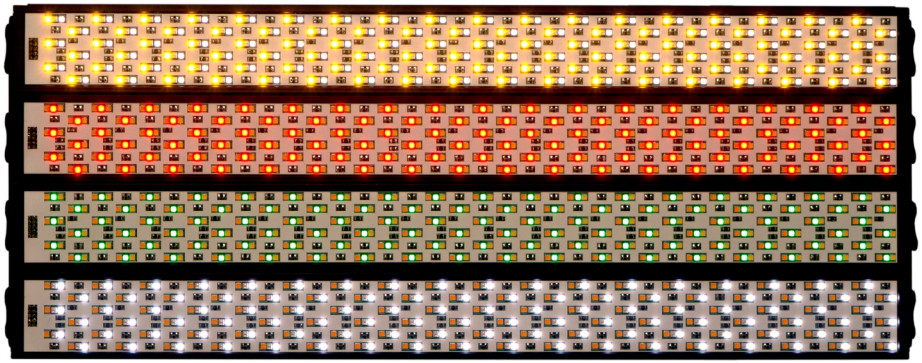
AKURAT
LIGHTING
SECTOR



AKURAT SECTOR - General Information

Akurat SECTOR is a modular RGBWW LED lighting system designed for photography, film and television. Due to its modular design, SECTOR offers an extraordinary range of applications.
SECTOR is also a light with perfect, close to nature color reproduction with the TLCI 99-100 index.

Components of Akurat Sector system

1. SECTOR Controller

The device allows you to control completely independently four sets (sectors) of RGBWW LEDs (Red, Green, Blue, White cold, White warm). The SECTOR Controller connected to four dedicated Akurat SECTOR LED modules allows you to obtain any white light with a CCT in the range of 2700K-6500K, with GM balance adjustment (green-magenta), or light of any color selected from the RGB or HSV palette (Hue, Saturation, Value) otherwise known as HSI (Hue, Saturation, Intensity).
The controller works in the CV (constant voltage) Fast PWM mode and can control both dedicated SECTOR LED modules and any LED sets, for example LED strips designed to work with constant voltage up to 24V.
The high frequency of the PWM signal eliminates the possibility of image flickering at standard FPS speeds(no flicker light).

SECTOR controller design

The view of the SECTOR controller is shown on Photo 1 and in Fig. 1 on the next page.

On the left cover of the controller there is a power socket (1), a power switch (2) and a Quick DMX input (3) for remote control*.

The front panel of the controller has a display, the buttons: SECTOR (4), MODE (5), TUN/GREEN (6), DAY/BLUE (7) and an encoder multifunction knob (8).

On the right cover of the controller there are four sockets to connect the LED sectors (9).

* (For more information about the DMX input of the SECTOR controller, see www.akurat.lighting or contact the manufacturer. The Quick DMX input has a 5V/1A USB power port and can be used to power dedicated USB devices. When the "Overload" diode is lit, the load of the port exceeds its capacity.)

Photo 1
Sterownik SECTOR

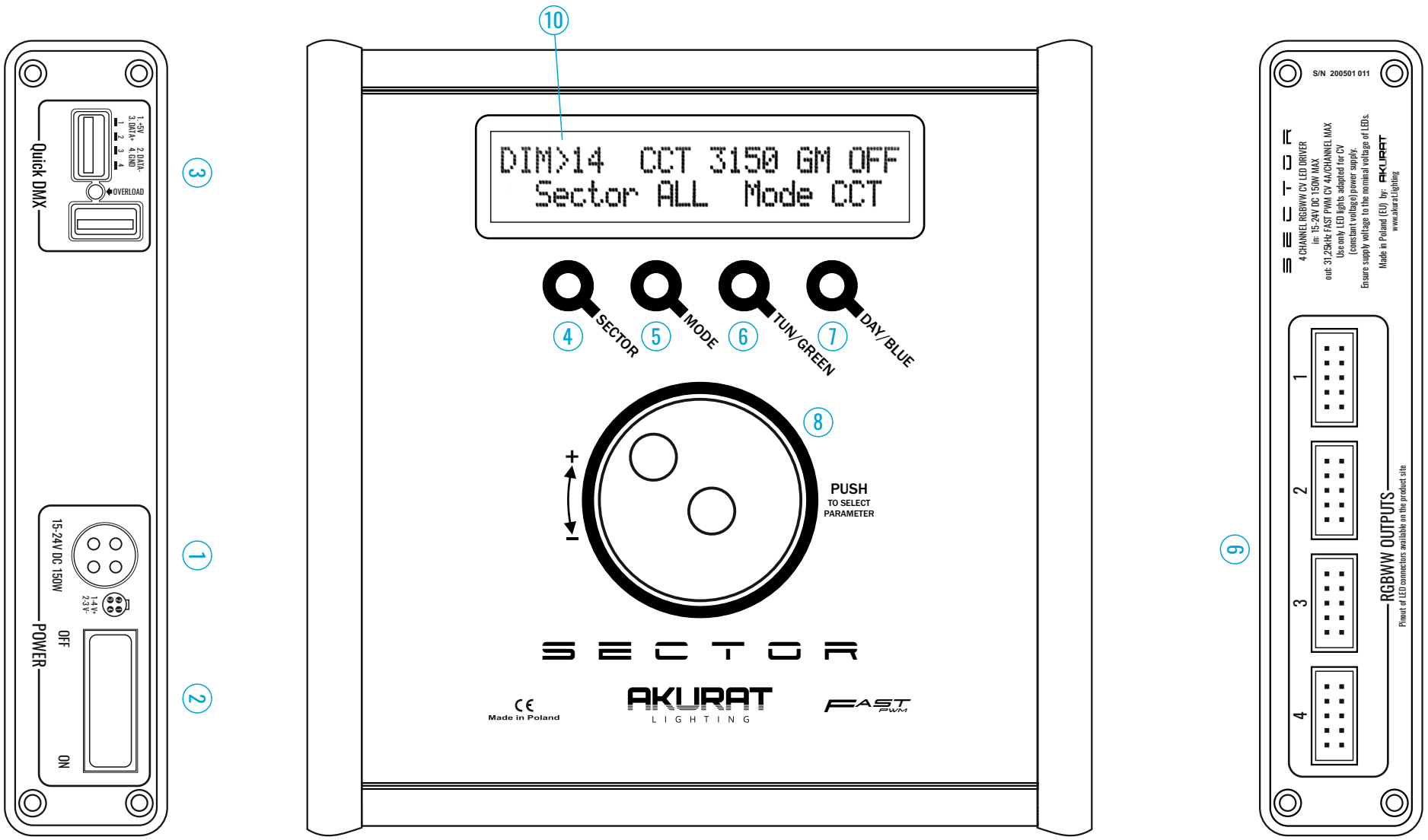


Fig.1
SECTOR Controller

One of the three editable light parameters is selected by pressing the encoder knob (8). The currently selected parameter is marked with ">"(10).

Turning the dial (8) changes the value of the currently selected parameter. Turning to the right increases the parameter and turning to the left decreases it.
Approximately two seconds after stopping turning the knob, the controller switches the automatically adjustable parameter to the default one. In CCT mode, the default parameter to edit is DIM, and in HSV mode, the VAL parameter. In RGB mode, automatic restore to default parameter does not work.

The encoder knob (8) has a dynamic precision control. Slowly turning the knob changes the adjustable parameter by one step, for each step of turning the knob.
Faster turning speeds up the regulation, with the number of regulation steps per knob step being dependent on the turning speed. This makes it possible to achieve the desired parameter value with a small knob stroke and at the same time to set the selected parameter precisely.

TUN/GREEN button function (6)::
- in CCT mode, pre-selects light tungsten CCT = 3200K GM = 0 (OFF), DIM - no change
- in RGB mode, it loads the green light: R = 0, B = 0, G - the maximum of the current RGB values
- in HSV mode, it loads the green light: HUE = 120°, SAT = 100%, VAL- the current value

DAY/BLUE button function (7):
- in CCT mode, it preselects daylight CCT = 5650K GM = 0 (OFF), DIM - no change
- in RGB mode, it loads blue light: R = 0, G = 0, B - the maximum of the current RGB values
- in HSV mode, it loads the blue light: HUE = 240 °, SAT = 100%, VAL - the current value

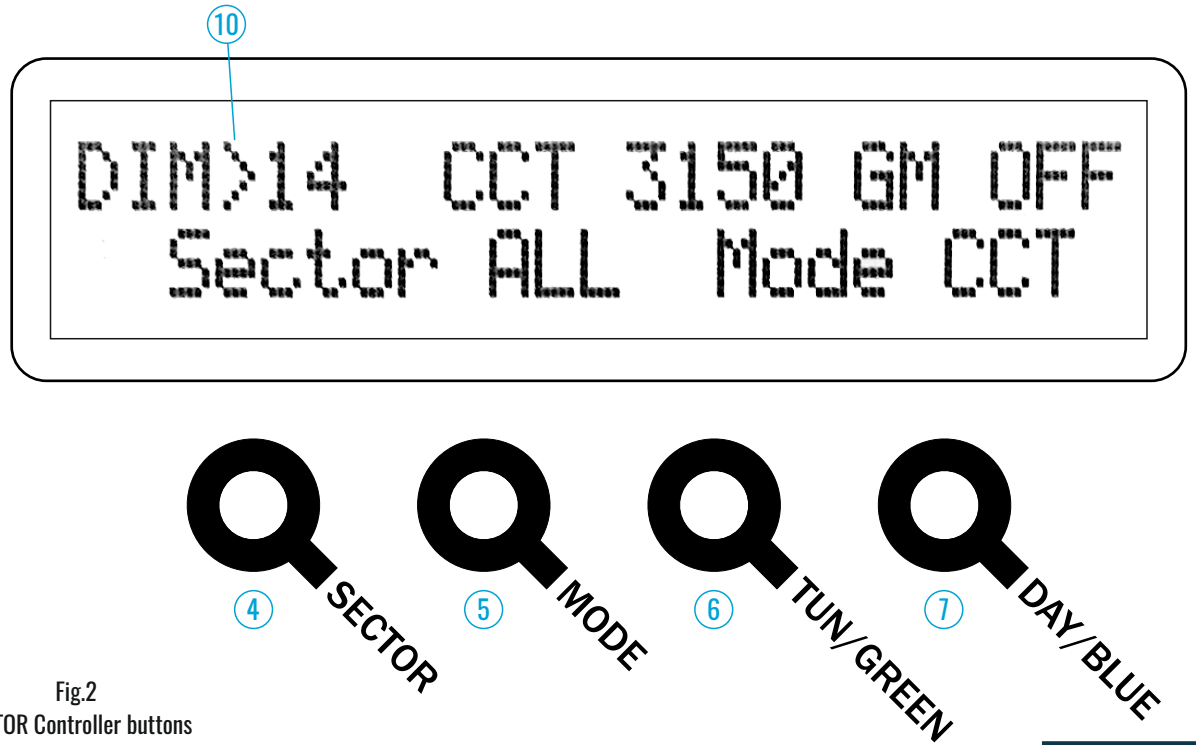


Fig.2
SECTOR Controller buttons

2. SECTOR 4 Panel Grip

This grip allows you to connect four SECTOR LED modules, attach the SECTOR controller and mains adapter, or V-Lock Power Plate for SECTOR, to create an LED panel and attach it to a standard lighting tripod.

Photo 2 shows a Panel 4X SECTOR assembled using this grip.

The LED sectors are attached to the grip by means of sliders with pins (1), locked with knobs (2).
Advanced two-sided Velcro fasteners were used to attach the power supply and the controller (the position of the Velcro fasteners is shown in Figure 3). Additionally, these components are secured against accidental disconnection with Velcro straps (4). This method of fastening enables very quick assembly or disassembly of individual components. To dismantle the power supply or controller, disconnect the Velcro straps and use the tearing force to disconnect the component from the grip. Reassembling requires entering Velcro fasteners on components in their counterparts on the grip, pressing the component down and securing it with a Velcro strap.

The grip is equipped with a mandrel (5) and a grip head (6) which allows it to be attached to a tripod and the panel to be positioned in any plane and at any angle. It is also equipped with a handle (7) to make it easy to set up and move the panel.

Photo 2
Panel 4X SECTOR

3. SECTOR 8 Omni Grip

This grip allows up to eight SECTOR LED modules to be connected at a 45° angle to form an omnidirectional panel. Adjusting the light of each LED module separately allows you to differentiate the light in different directions.
The SECTOR LED modules are fixed by means of movable locks (1) which are locked by means of knobs. To electrically connect the modules to the SECTOR controller, special Sector Ribbon Cables long are required, which are numbered for easy identification of individual sectors. The cables are sold in sets of 4, numbered from 1 to 4 or 5 to 8.
The cable should be connected before placing the SECTOR LED module on the mounting pins of the grip. Securing knobs lock the cables against accidental disconnection.

SECTOR 8 OmniGrip is equipped with a holder (2) for attaching a 60cm paper lantern (3), which is a good diffuser for LED modules, but which can also make such an omnidirectional panel visible in the frame as a glowing element of the scenery.

Photo 3
SECTOR Ribbon Cables long

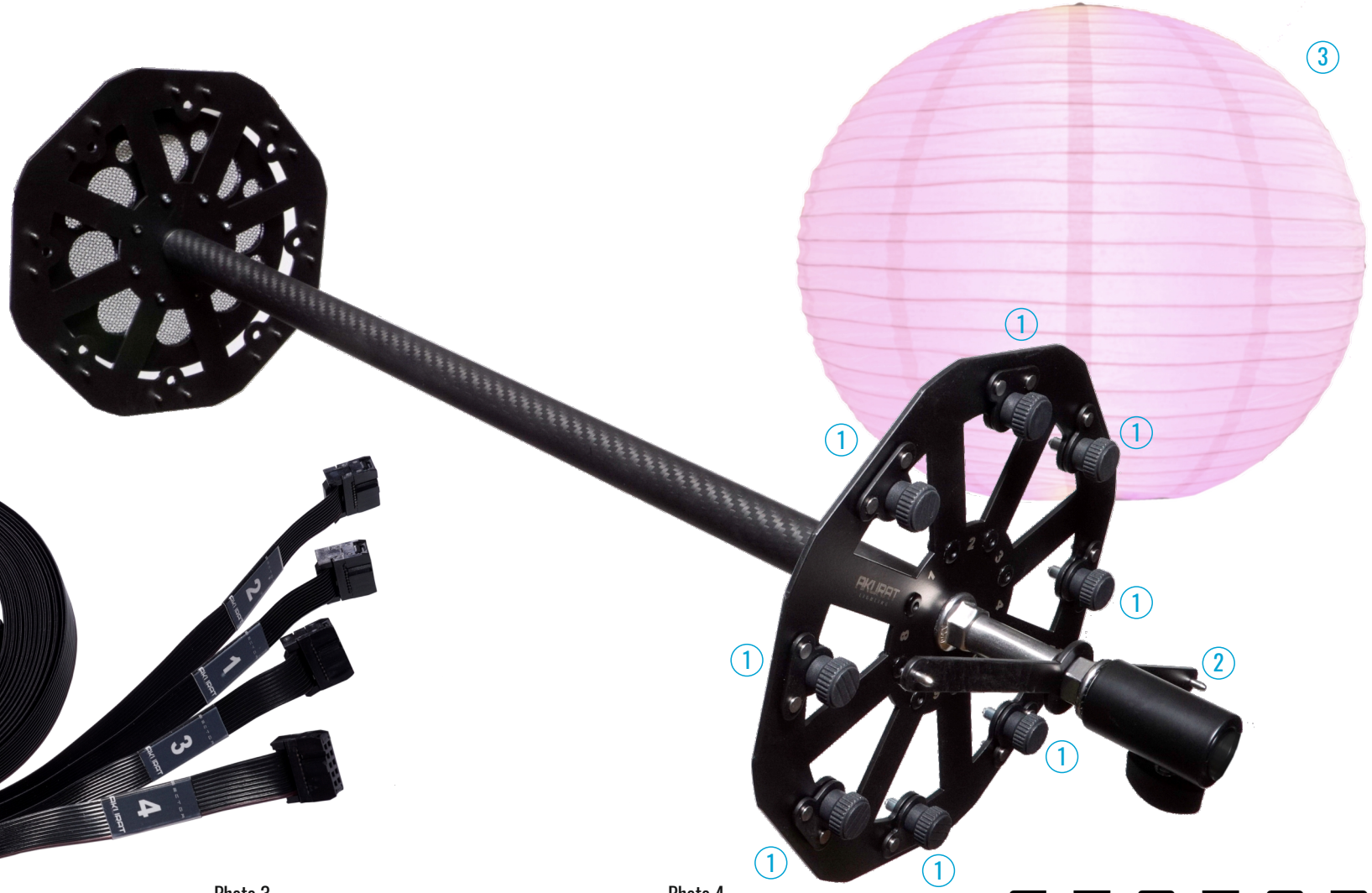


Photo 4
SECTOR 8 Omni Grip

SECTOR

4. SECTOR V-Lock Power Plate for SECTOR Controller

The plate allows the SECTOR controller to be powered from a V-Lock battery. To do this, connect the cable (1) to the SECTOR power supply socket and plug a charged battery into the V-Lock socket.
Due to the significant power, we do not recommend using low capacity batteries.
Inside the PCB, there is a slightly warm electronic system which raises the voltage, so it is necessary to ensure free air flow through the ventilation slots (2) in the plate body.
The board is equipped with Velcro fastenings (3) which allow to install it to SECTOR 4 Panel Grip in place of the power supply. To secure the plate with Velcro strip, unscrew the V-Lock socket fixing screws (4), insert and fasten the Velcro strips underneath the socket and then tighten the socket again.

Photo 5
SECTOR V-Lock Power Plate

SECTOR

AKURAT LIGHTING

All components of SECTOR system have been designed and are manufactured in Poland by:
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