



Reference Control Settings for Compliance Verification

COMMISSION DELEGATED REGULATION (EU) 2019/2015 of 11 March 2019 specifies in Annex V article 3 that “Information to be displayed on the supplier’s free access website” shall include: “(a) The reference control settings, and instructions on how they can be implemented, where applicable”. The applicability of this requirement is further explained in Annex I: “If the out-of-the-box value is deliberately set differently to the reference control setting (e.g. at low power for safety purposes), the manufacturer shall indicate in the technical documentation how to recall the reference control settings for compliance verification”.

“Reference control settings”, abbreviated to RCS, is defined in Annex I as: “settings such that the full-load condition is obtained”. The “full-load condition” is defined as “the condition of a light source, within the declared operating conditions, in which it emits the maximum (undimmed) luminous flux”.

Other information required to be displayed on the supplier’s free access website is “(b) Instructions on how to remove lighting control parts and/or non-lighting parts, if any, or how to switch them off or minimize their power consumption”. Also this requirement is aimed at providing the necessary instructions for how to achieve circumstances suitable for compliance verification.

Based on the above, this document specifies:

1. How to obtain the RCS for light source products for which the RCS are different from the out-of-the-box settings. If a product is not mentioned in this document, the RCS can be obtained by simply powering on the device.
2. How to remove lighting control parts and/or non-lighting parts, if any, or how to switch them off or minimize their power consumption. If a product is not mentioned in this document, it does not contain any lighting control parts or non-lighting parts, or they cannot be removed, switched off, or minimized in power consumption.

Model Number(s)	How to obtain RCS and/or how to minimize lighting control parts and/or non-lighting parts
RS 227 T, RB 249 T, RB 279 T	RCS is 5000K at 100% dim level, which can be achieved by setting the light to its coolest white using a Zigbee controller or Zigbee system and app. Lighting control parts cannot be switched off, but power consumption is minimized automatically when in a stable state.
RB 247 T, RB 272 T, RF 271 T, RF 273 T, RF 274 T	RCS is 6500K at 100% dim level, which can be achieved by setting the light to its coolest white using a Zigbee controller or Zigbee system and app. Lighting control parts cannot be switched off, but power consumption is minimized automatically when in a stable state.
PL 110 puck, RSL 115 spot, OLS 210 bulb	To perform measurements on 1 light, simply take one and power it with a 24 VDC constant voltage power supply. On the white cable of the puck/spot, the wire with black marking is the +. On the OLS 210 bulb, the tip of the E27 screw base is the +.
RCL 240 T strip	RCS is 3330K at 100% dim level, which can be achieved by using a Zigbee controller to put the product in that state. Measurements should be done with the LED strips and the control box (containing control gear + lighting control parts) outside of the RCL 240 T containing product. To perform measurements on 1 LED strip, unscrew and extract the control box and LED strips with diffuser from the containing product, pry/click out the LED strips from the diffuser, desolder from the first LED strip the 2 wires to the second LED strip, desolder from the last LED strip the single wire to the control box, and solder that single wire to both output points of the first LED strip. In order to measure power consumption of the light source in RCS state but without the lighting control parts, measure on the inputs to the light source. Do not use the light strips with constant voltage power supplies during verification as this may lead to thermal runaway in the LEDs and render them defective.



Model Number(s)	How to obtain RCS and/or how to minimize lighting control parts and/or non-lighting parts
RCL 110 strip	To perform measurements on 1 LED strip, disconnect the incoming and outgoing cables from one of the LED strips and extract the LED strip from the containing product. Use a constant voltage power supply to power the LED strip with 24 VDC. The LED driver included in the containing product may be used for this. The LED controller also included in the containing product must then NOT be used: unscrew and extract LED driver and controller from the containing product, pry open the controller, and desolder the wires coming from the LED driver.
FL 1x0 C strip	RCS is 5000K at 100% dim level, which is the default state after power on of the FL 1x0 C strip in isolation (without control box). For evaluation, take the LED strip + control box from the packaging, cut the cable between the control box and the LED strip, strip the outer isolation of the cable to free the 5 wires, strip some isolation of each wire, cut the LED strip to 50 cm (the FL 1x0 C strip can be cut per piece of 16.67 cm, so cut the strip at the third cut point from the beginning), and power the 50 cm LED strip with a 24VDC constant voltage power supply. The yellow wire is +, connect this to the + of the power supply. Connect the 4 other wires to the - of the power supply.
FL 1x2 C strip	RCS is around 3000K white, which can be achieved as follows: <ul style="list-style-type: none"> • Power up the device (power adapter, control box, and 50cm strip). • Then press and hold the reset button of the control box for 8 seconds. The reset button can be pressed by inserting a paperclip in the little hole next to the DC jack receptacle. • The light will blink once at 8 seconds; release the button at that moment. • The light will now assume the RCS state. If power is disconnected after being set to RCS, repeat the sequence to return to RCS.
OPL 130 CP OSL 130 C spot	RCS is cool white @6250K at 100% dim level, which is the default state after power on of the OPL 130 CP in isolation. For evaluation, power the pedestal with a 24 VDC constant voltage power supply. The middle pin of the 5-pin connector is the 24V+ pin, connect this pin to +24V of the power supply. Connect all other pins to the - of the power supply.
OFL 1x2 C strip OGL 130 CG OPL 132 CP OSL 132 C spot OSL 140 C spot	RCS is a greenish white at 100% dim level, which can be achieved by connecting the light source with its cable and connector to the output cable and connector of the control box, then connecting the control box input cable to the power supply, then waiting > 5 seconds, and then disconnecting and reconnecting the control box from/to the power supply 8 times, with each connection time ~0.5 second, and the eighth time leaving it connected. The light should turn greenish white. If the product is factory new, the light will blink at every power-on; this can be disregarded. If the power is disconnected after being set to RCS, the sequence must be repeated to return to RCS. Newer models may have a control box with magnet sensor, which can be seen by the “reset” graphic on the front of the control box. These models can be set to RCS as follows: <ul style="list-style-type: none"> • Power up the device (power adapter, control box, and strip). • Hold a magnet close to the “reset icon” on the control box (bottom left corner on the front). The light will blink once when the magnet is detected. • Keep the magnet in position there for 8 seconds. The light will blink once again at 8 seconds. • Then remove the magnet. The light will now assume the RCS state.
Additional information for indoor and outdoor LED strips	For evaluation of LED strips, take the LED strip, control box, and power supply from the packaging, cut the LED strip as described below, connect the product and put it in RCS state as described above. For measuring on-mode power, insert measurement points between control box and LED strip; the middle pin of the 5-pin connectors is the 24V + pin. Any 24 VDC constant voltage power supply > 10W can be used to power the (connected) light source. An Innr LED strip can be cut per piece of 12.5 cm or 16.67cm, please check the instruction manual or packaging. For an outdoor LED strip, for evaluation only, carefully cut open the silicon tube at a bit over 50 cm from the beginning. Cut the LED strip at the right cut point to obtain a 50 cm strip for evaluation purposes.



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