

## INTRODUCTION

Meso50 LED Driver stands for an extremely flexible LED Driver, designed for fast and easy configuration.

This Application Note “AN3\_Meso50 Setting” illustrates the setting options of the Meso50 LED driver using the legacy wired programming tool, RSOZ070-PTOOL. Other programming options are available, including RFID wireless (for details refer to the “UM2\_Programming Toolset User Manual”).

An external dedicated and portable Programming Tool (available as optional hardware) permits users to customize different Meso50 LED driver key parameters. This guarantees extreme flexibility during the final products (lamps) production process, permitting all the OEMs to directly personalize their products, avoiding managing different LED driver models and their stocking inventory.

## PROGRAMMING TOOL

Meso50 LED driver can be set using the same Programming Tool available for Ozone and Strato EVO LED Drivers (ordering code: RSOZ070-PTOOL).

The battery powered unit (see Figure 1), is a user-friendly remote programmer that permits the user to manage the following settings:

- Output Constant Current Setting
- Light Fade Time Setting
- 0-10V or 1-10V analogic dimming option
- Push or Step dimming option



**Figure 1:** Ozone Programming Tool (Code RSOZ070-PTOOL)

## PROGRAMMING CONNECTIONS

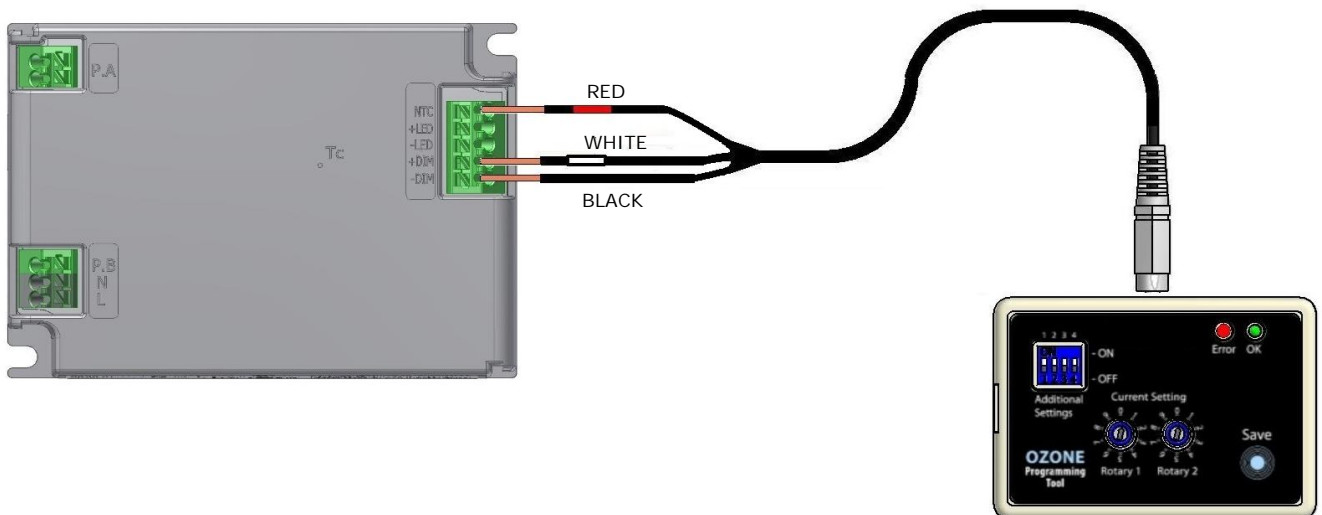
The Ozone Programming Tool is easily connected to the Meso50 LED driver by the 3-wire cable (Figure 2) provided together with the tool.

The programming wires are identified by coloured collars placed near the metal end terminals.

Follow the connection table below for a correct programming connection between the programming wires and the Meso output terminals.

Meso50 OUTPUT	Programming Wire
NTC (pin 1)	RED collar wire
+DIM (pin 4)	WHITE collar wire
-DIM (pin 5)	BLACK wire

**Table 1:** External programming tool connections correspondence

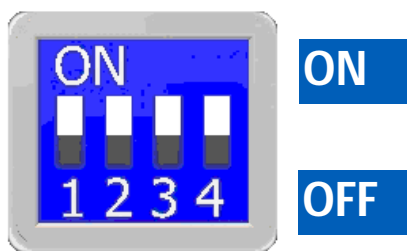


**Figure 2:** Programming wires connection to the LED Driver

## DIP-SWITCH SETTINGS (FADING TIME AND DIMMING SETTINGS)

The 4-position dip-switch on the programming tool permits to set the fade time and the analog dimming options (0-10V or 1-10V & Push or Step).

Follow the dip-switch settings combination table (Table 2) below to select the requested configuration. Each switch can stand in ON or OFF position; the combination of the four switch positions determines the product configuration as reported in the table



Sw. 1	Sw.2	Fade time (s)
OFF	OFF	0
ON	OFF	2
OFF	ON	5
ON	ON	10

Switch 3	Dimming Option
OFF	1-10V
ON	0-10V

Switch 4	Push/Step Option
OFF	Push
ON	Step

Red = factory preset values

Table 2: Dip-switch settings combinations

- **Fade Time**

Required time (in seconds) to raise linearly the output LED current from 0A (OFF state) to the nominal set current ( $I_{SET}$ ) and vice versa.

Fade Time will also affect the 0-10V linear dimming function. *Example considering a 10sec. fade time: if the user dims the output current down from 100% $I_{SET}$  to 50% $I_{SET}$ , the transition time will be 5 sec.*

The push dimmer is affected by the fade time only during short press (during turn on and turn off). The long press has its own fade time.

The step dimmer is affected by the fade time.

- **Dimming option**

This parameter sets the driver response to a dimmer voltage less than 1V. When selected 1-10V and the dimmer voltage is less than 1V the output current of the driver will be 3% of the maximum current rating of the driver.

When selected 0-10V and the dimmer voltage is less than 1V the current on the LED will be forced to zero.

- **Push/Step option**

This parameter sets the driver response to a signal coming from the Push/Step connector (for details see "AN2\_Meso50 Temp Sense & Dimming"). For the **Step** option the default step current value is 50% of the programmed current (it is possible to change the step current value using the "Ozone Toolset Software"). For the Push option the default operative mode is "Memory" (upon an AC power loss the driver will turn on at the latest Push dimming level set)

## ROTARY SWITCHES SETTINGS (OUTPUT CONSTANT CURRENT)

By combining the two 10-way rotary switches positions, it is possible to set the output constant current value. A very wide output current range of values, from 350 mA to 1400 mA, can be selected in 10 mA steps, for a 50W total maximum output power. See the table below to select the right rotary switches positions corresponding to the required output current.

Rotary 1	Rotary 2	RM50LD-700A-XX	RM50LD-1050A-XX	RM50LD-1400A-XX
		I <sub>SET</sub> (mA)	I <sub>SET</sub> (mA)	I <sub>SET</sub> (mA)
0	0	--	--	--
0	1	--	--	--
0	2	--	--	--
0	3	--	--	--
0	4	--	--	--
0	5	--	--	--
0	6	--	--	--
0	7	--	--	--
0	8	--	--	--
0	9	--	--	--
1	0	350	--	--
1	1	360	--	--
1	2	370	--	--
1	3	380	--	--
1	4	390	--	--
1	5	400	--	--
1	6	410	--	--
1	7	420	--	--
1	8	430	--	--
1	9	440	--	--
2	0	450	--	--
2	1	460	--	--
2	2	470	--	--
2	3	480	--	--
2	4	490	--	--
2	5	500	500	--
2	6	510	510	--
2	7	520	520	--
2	8	530	530	--
2	9	540	540	--
3	0	550	550	--
3	1	560	560	--
3	2	570	570	--
3	3	580	580	--
3	4	590	590	--
3	5	600	600	--
3	6	610	610	--
3	7	620	620	--
3	8	630	630	--
3	9	640	640	--
4	0	650	650	--
4	1	660	660	--
4	2	670	670	--
4	3	680	680	--
4	4	690	690	--
4	5	700	700	700
4	6	--	710	710
4	7	--	720	720
4	8	--	730	730
4	9	--	740	740

Rotary 1	Rotary 2	RM50LD-700A-XX	RM50LD-1050A-XX	RM50LD-1400A-XX
		I <sub>SET</sub> (mA)	I <sub>SET</sub> (mA)	I <sub>SET</sub> (mA)
5	0	--	750	750
5	1	--	760	760
5	2	--	770	770
5	3	--	780	780
5	4	--	790	790
5	5	--	800	800
5	6	--	810	810
5	7	--	820	820
5	8	--	830	830
5	9	--	840	840
6	0	--	850	850
6	1	--	860	860
6	2	--	870	870
6	3	--	880	880
6	4	--	890	890
6	5	--	900	900
6	6	--	910	910
6	7	--	920	920
6	8	--	930	930
6	9	--	940	940
7	0	--	950	950
7	1	--	960	960
7	2	--	970	970
7	3	--	980	980
7	4	--	990	990
7	5	--	1000	1000
7	6	--	1010	1010
7	7	--	1020	1020
7	8	--	1030	1030
7	9	--	1040	1040
8	0	--	1050	1050
8	1	--	--	1100
8	2	--	--	1150
8	3	--	--	1200
8	4	--	--	1250
8	5	--	--	1300
8	6	--	--	1350
8	7	--	--	1400
8	8	--	--	--
8	9	--	--	--
9	0	--	--	--
9	1	--	--	--
9	2	--	--	--
9	3	--	--	--
9	4	--	--	--
9	5	--	--	--
9	6	--	--	--
9	7	--	--	--
9	8	--	--	--
9	9	--	--	--

**Table 3:** Output currents set points

## PROGRAMMING OPERATIONS SEQUENCE

Run the following 11-step sequence for Meso50 LED driver programming, using the “RSOZ070-PTOOL” external Programming Tool.

1. If connected, turn off the AC power to the Meso50.
2. If connected, unplug all wires from the secondary side (LED board, NTC, Dimming).
3. Connect the 3-wire cable of the external Programming Tool to the Meso50 output sections, as shown in Figure 2.
4. Select the correct Dip-switch setting combinations according to Table 2.
5. Choose the output Constant Current value and place the correspondent rotary switches positions, according to Table 3.
6. Apply the AC power to the Meso50.
7. Press “Save” push button.
8. Verify the green LED blinks (2 fast blinks followed by 1 longer blink).
9. Verify that the red LED remains OFF after the green LED blinking.
10. Power off the unit.
11. First disconnect the AC cable and then the 3-wire programming cable from the Meso50 output section.

Now the new settings are installed and they will be active at the next Meso power-on.

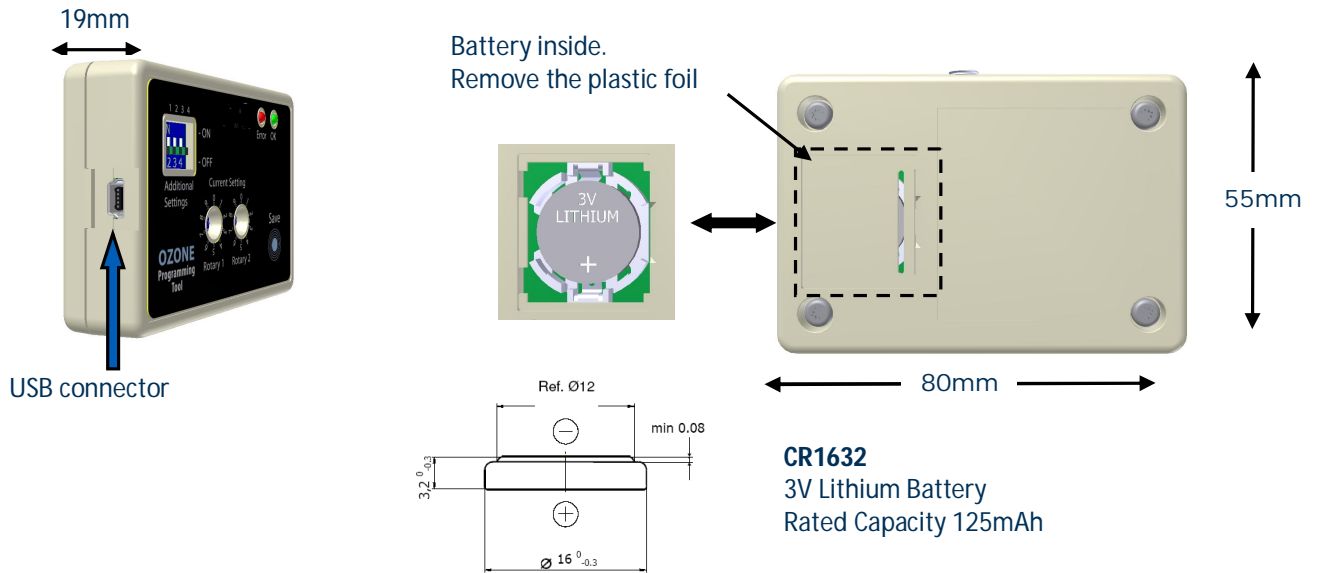
### **WARNINGS:**

If the red LED turns-on after the two green LED fast blinks, it means that the programming operation failed. In this case, repeat the programming sequence from the beginning paying particular attention to wires connections and rotary switches combination.

Any rotary switch combinations not shown in Table 3 must be considered as not allowed.

*Additional red LED fast blinks after the programming phase, indicate a low battery level.*

**MECHANICAL DIMENSIONS AND BATTERY REPLACEMENT**



**Figure 4:** Mechanical Dimensions and battery replacement

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