

Programming Toolset User Manual



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1. INTRODUCTION

The high grade of intelligence and flexibility behind Programmable LED drivers and the “Living Energy” philosophy adopted by ENEDO, permitted us to develop the most innovative, flexible and “environmentally friendly” constant current LED drivers. The aim of ENEDO programmable LED drivers and Programming Toolset (‘Toolset’ to simplify) is to meet the latest technological requirements in terms of flexibility, energy saving and light optimization. Using these programmable features, lighting manufacturers are now free to personalize the drivers to help make their products unique.

The PC software is used in combination with either wired (USB) or wireless (RFID) tools to program the ENEDO programmable LED drivers. Wired programming requires the LED Driver be powered by the AC input, whereas wireless programming is accomplished with the driver unpowered, either as a single unit, or multiple units while still in the multi pack shipping container. The table below (Table A) summarizes the programming tools and features which can be programmed using the software.

NOTE: The software is NOT compatible with the Meso 25 series of LED Drivers.

Table A

Programming Tools and Features		Driver Series						
		Meso 50		Ozone 70	Ozone 150	Strato Evo 40		
		Analog	Digital			S-Case	D-case analog	D-case digital
Programming Tools								
Wired	Analog Programming Tool RHPS354 RSOZ070-PTOOL	✓	✓	✓	✓	✓ ****	✓	
	DALI Programming Tool RHPS368 RSOZ070-PDALI		✓	✓ ***	✓			✓
Wireless	Single Unit RHPS465A ROALSET-Single	✓	✓		✓ *	✓ *	✓	✓
	Multiple Unit RHPS465 ROALSET-Multi	✓	✓		✓ *	✓ *	✓	✓
Features								
Driver Settings								
Output Current Settings		✓	✓	✓	✓	✓	✓	✓
Fade Time		✓	✓	✓	✓	✓	✓	
0-10 Dimming Type		✓	✓	✓ ***	✓	✓	✓	
PUSH-STEP Selection		✓ **	✓ **				✓	
PUSH Recovery Status		✓	✓				✓	
DALI Port Input Signal			✓	✓	✓			
DALI Dimming Type				✓ ***	✓			
DC Emergency Level (DC Models only)		✓	✓					
Adjustable Dimmer		✓	✓	✓	✓			✓
Constant Light Output		✓	✓	✓	✓			✓
Driver Diagnostics				✓ ***	✓			

* -RF Model only

** PUSH-STEP Dimming not available on DC Input models

*** From Ozone 70w FW3.0 and Ozone toolset v.1.5

**** Only possible in Unlocked mode without PC software (see par. 6.1)

The PC software is comprised of four main areas:

The “Driver Settings” function lets the user set the main parameters of the LED Driver such as I_{OUT} , Fade time, DALI/PWM and multiple dimming options, permitting the driver to adapt to a variety of possible final installations/applications.

The “Adjustable Dimmer” function permits fast and easy custom outdoor light management of up to five (5) dimming levels for a custom night-light profile, synchronized to worldwide time zones. Focused on large area lighting applications, like parking lots, shopping centers and urban spaces, it allows companies or municipalities to optimize their costs, taking better care of the environment. Just turning the lighting fixture ON/OFF with a photocell on the AC input, the custom light profile will be self-synchronized to the real-time zone without any clock setting in the installation area.

The “Constant Light” function guarantees a constant light flux along the entire product life-cycle, compensating for the LED’s efficiency losses due to product aging.

Finally, the “Driver Diagnostic” feature gives lighting manufacturers the ability to easily identify issues during luminaire assembly, while the “Historical Diagnostic” feature gathers information and provides the history of the driver and the connected LED module.

2. MINIMUM PC REQUIREMENTS AND LICENSE AGREEMENT

1. Operating System: Windows XP SP3 / Windows Vista / Windows 7/Windows 10 (x64 only)
2. Microsoft.NET Framework 4 Client Profile (x64)
3. The Toolset PC Software is the property of ENEDO Spa and is managed and distributed only by ENEDO.
 - The Toolset PC Software can be installed in any number of computers
 - The Toolset program file cannot be modified in any way
 - The Toolset may be sold exclusively by ENEDO Spa or its authorized distributors

The PC software and related documentation are provided without any kind of warranty. This software does not warrant that its functions or documentation will meet your requirements, or that the software operation will be error-free or complete, or that defects in the software or documentation will be corrected.

Under any circumstances, including negligence, the Toolset PC Software and related documentation shall not be liable for any lost revenue or profits or any incidental, indirect, special, or consequential damages that result from the use, or inability to use, the Software or related documentation.

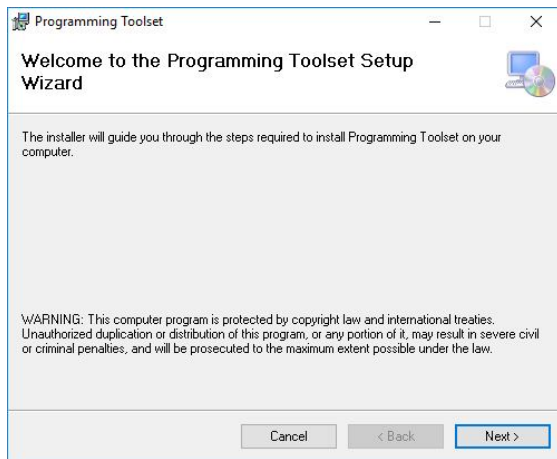
3. SOFTWARE INSTALLATION PROCEDURE

1. To take the software [CLICK HERE](#)
(<https://enedo.sharepoint.com/teams/extranet/StandardProducts/Digital%20Light/Programming%20Manual>)
2. Login → username: **customers@enedopower.com** password: **Enedo4guest**
3. Unzip "Programming Toolset vX_X.zip" in your dedicated PC folder. Two files will be generated: 'Programming toolset setup.msi and 'Setup.exe'.
4. Execute 'Programming toolset setup.msi'

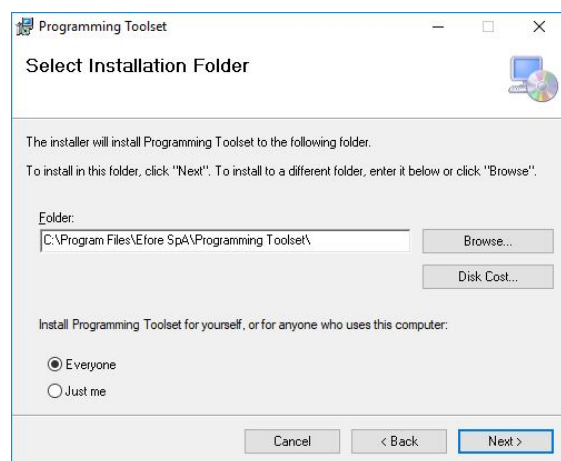
It is required to install the "Microsoft .NET Framework 4 Client Profile" in your PC system. If it is already installed in your computer, the procedure will automatically continue.

If not, the installation procedure will download it directly from the Microsoft website (this could take several minutes and it may require a system restart).

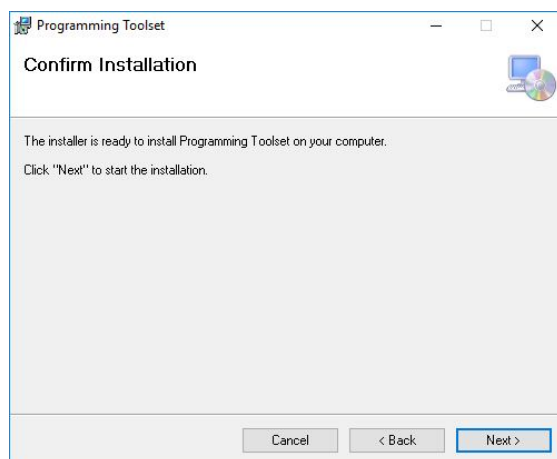
5. Once the Microsoft .NET Framework 4 software is installed (or skipped if already present), click "install" and run the following wizard.



01: Select 'Next'

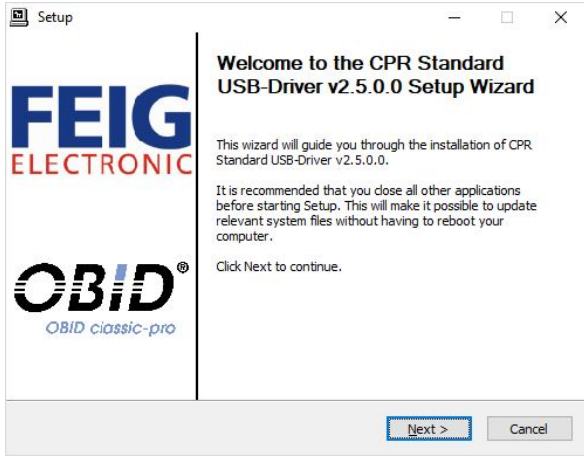


02: Select 'Next'

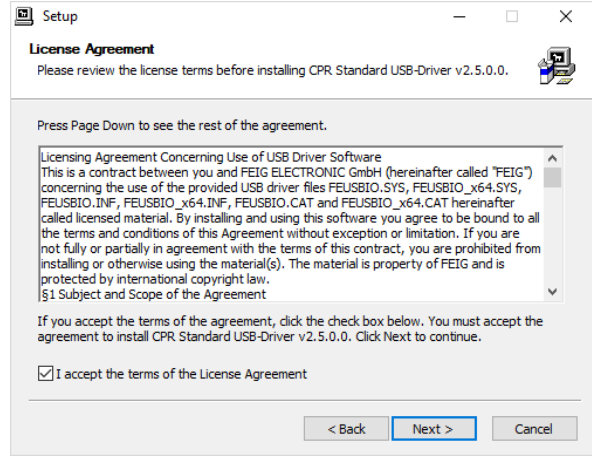


03: Select 'Next'

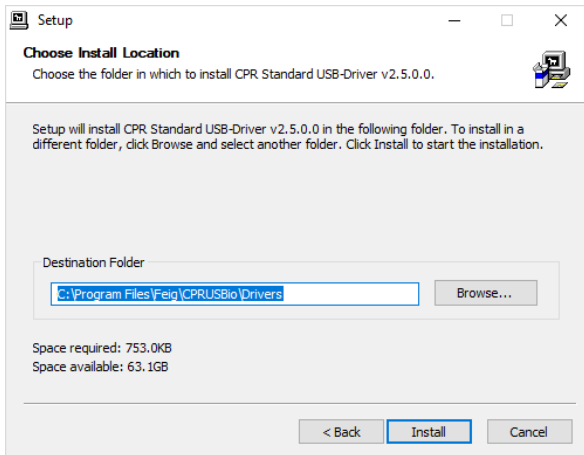
6. Automatically the USB device drivers for both FEIG RFID, ROALSET-SINGLE and ROALSET-MULTI, will start:



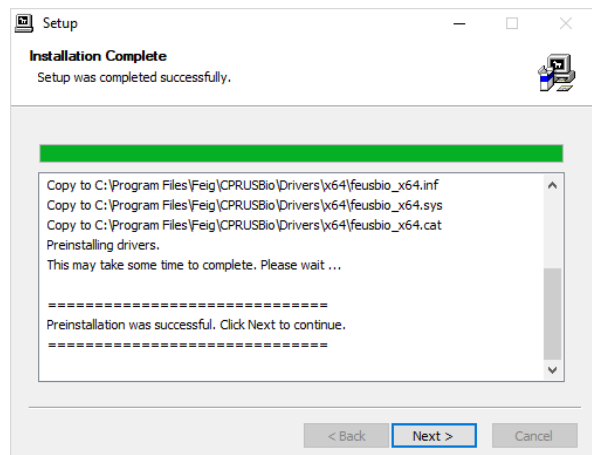
04: Select 'Next'



05: Tick the terms of license and Select 'Next'



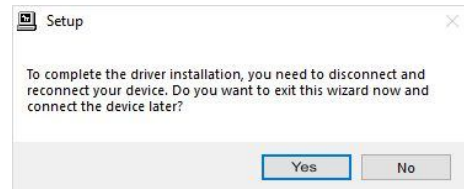
06: Select 'Install'



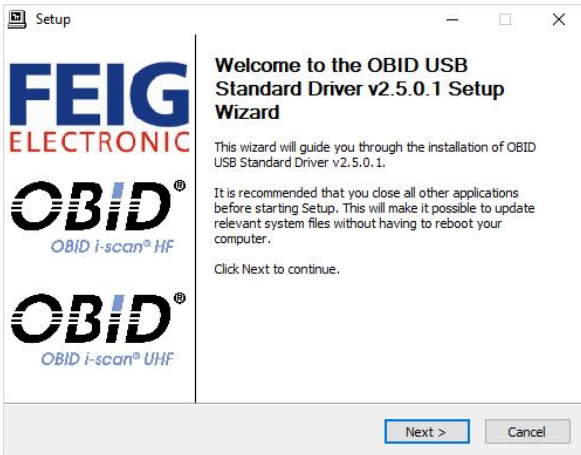
07: Select 'Next'



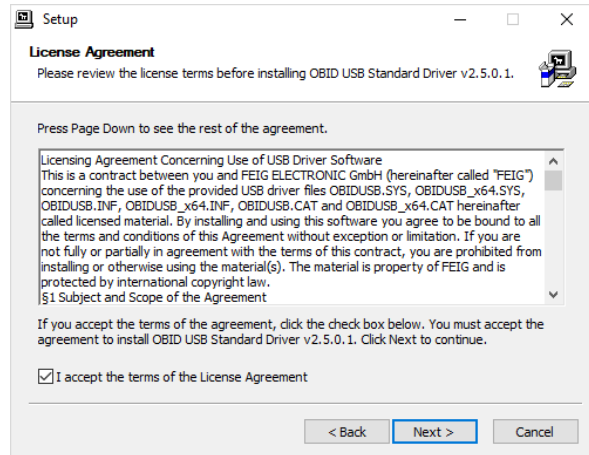
08: Select 'Finish'



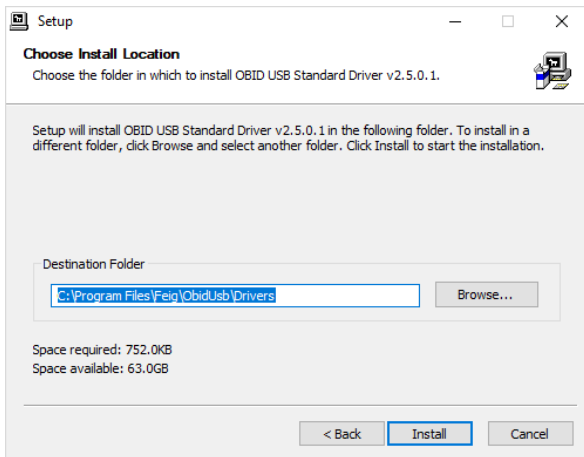
09: Select 'Yes'



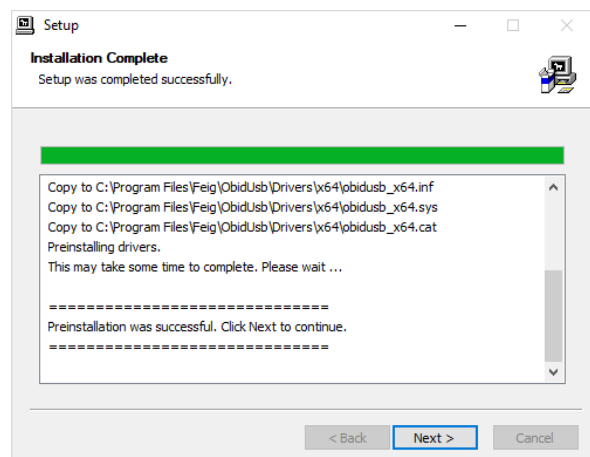
10: Select 'Next'



11: Tick the terms of license and select 'Next'



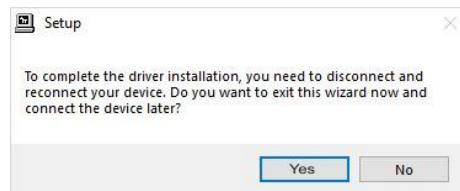
12: Select 'Install'



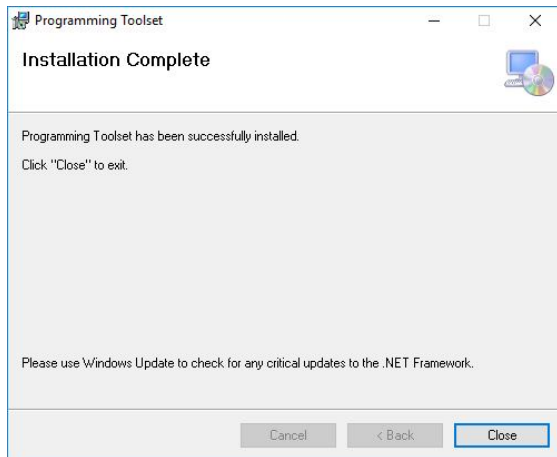
13: Select 'Next'



14: Select 'Finish'



15: Select 'Yes'



16: Select 'Close'

7. A new dedicated desktop icon and start menu folder will be created for direct software execution:



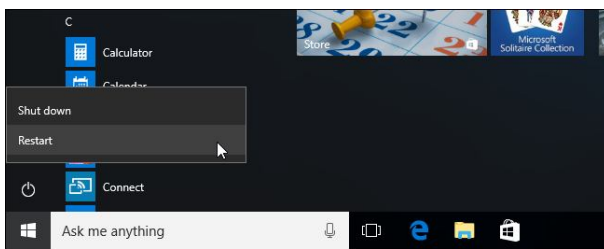
4. USB DRIVER INSTALLATION PROCEDURE

In case that customer's application needs to use the RSOZ070-PTOOL/RSOZ070-PDALI communication devices the USB device driver for programming tools has to be installed

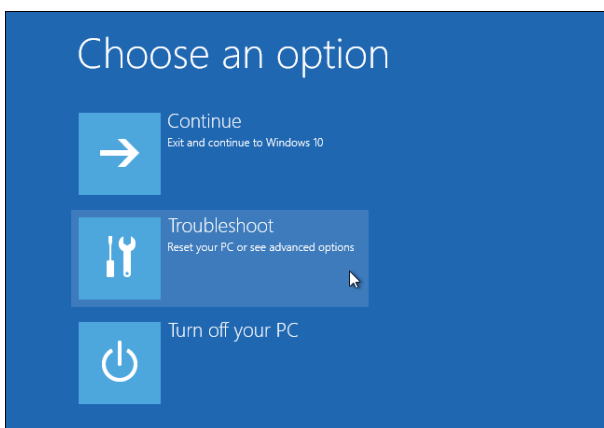
- [CLICK HERE](https://enedo.sharepoint.com/teams/extranet/StandardProducts/Digital%20Light/Programming%20Manual) to take the driver for the USB wired programmer (<https://enedo.sharepoint.com/teams/extranet/StandardProducts/Digital%20Light/Programming%20Manual>)
- Login → **username: customers@enedopower.com** **password: Enedo4guest**
- Use the driver for wired programming tools (Programming Tool or DALI Programming Tool)
- Unzip "USB Driver for ENEDO Programming Tools.zip" in your dedicated PC folder. The file "OzoneDriverSetup.exe" will be generated.
- **NOTE for Windows 10:**
This is a windows kernel mode unsigned driver and Win10 could block it.
So, if you are running Win10, in case of issue, we suggest you to temporarily bypass this protection by executing the following procedure, before launching "OzoneDriverSetup.exe":

You can use the advanced boot options menu to boot Windows 10 with driver signature enforcement disabled. This isn't a permanent configuration change. The next time you restart Windows, it will boot with driver signature enforcement enabled—unless you go through this menu again.

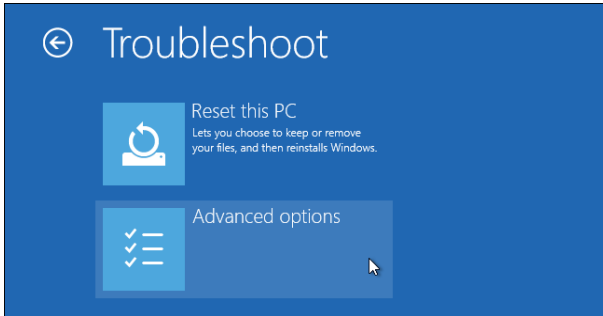
To do this, get to the Windows 8 or 10 advanced boot options menu. For example, you can hold down the Shift key while you click the "Restart" option in Windows. Your computer will restart into the menu.



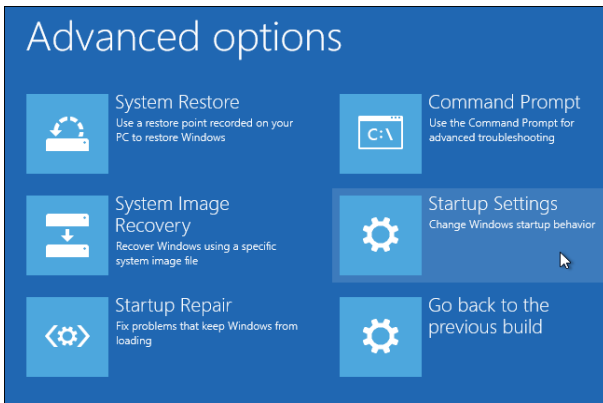
Select the "Troubleshoot" tile on the Choose an option screen that appears.



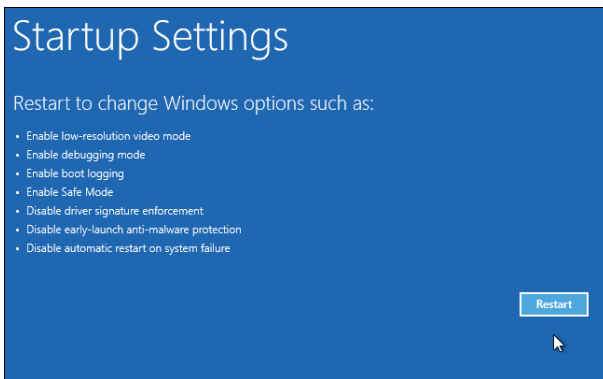
Select "Advanced options".



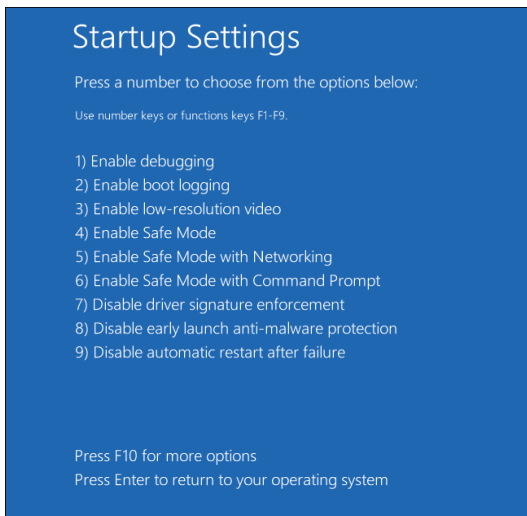
Click the "Startup Settings" tile.



Click the "Restart" button to restart your PC into the Startup Settings screen.



Type “7” or “F7” at the Startup Settings screen to activate the “Disable driver signature enforcement” option.



Your PC will boot with driver signature enforcement disabled and you’ll be able to install unsigned drivers. However, the next time you restart your computer, driver signature enforcement will be disabled—unless you go through this menu again. You’re now free to install drivers that haven’t been officially signed by Microsoft.

- Execute the file “OzoneDriverSetup.exe”
- Wait for the installation procedure to end
- Connect the Ozone Programming Tool or the DALI Programming Tool to the USB PC port and follow all the instructions to complete the driver setup

5. SOFTWARE UPDATE

1. Uninstall the old software version.

Go to: Start → Control Panel → Programs and Features → Programming Toolset → Click “Uninstall/Change” button.

2. Install the new software version, following the procedure from section 3.

6. CONNECTING TO TOOLS AND BASIC OPERATION

To utilize the PC software, it is required to connect the PC to one of the Programming Tools. Currently there are four different tools which can be used with the PC software:

- Programming Tool – Refer to 6.1
- DALI Programming Tool – Refer to 6.2
- ROALSET-SINGLE – Refer to 6.3
- ROALSET-MULTI – Refer to 6.3

The following sections describe the required connections and basic functionality. Sections 8, 9, 10 and 11 then describe the usage of the software in detail.

6.1 Programming Tool (RSOZ070-PTOOL)

The Programming Tool is designed to operate in 2 modes:

- **Unlocked Mode** (factory default):
Dip and **rotary** switches are enabled.
Programming Tool cannot be programmed by PC software.
Settings can be manually modified (see “AN3_Ozone Setting” or “AN3 Meso Setting” or STRATO EVO Datasheet for details).
- **Locked Mode**:
Dip and **rotary** switches are disabled.
Programming Tool can be programmed only by Toolset software.
Settings cannot be manually modified.



The following procedures are for using the Programming Tool with the PC software in the locked mode. For details on using the tool in the unlocked mode, refer to the specific series application notes.

Using the Programming Tool connected to the PC, the following is possible:

- Read all settings stored in the Programming Tool (6.1.2)
- Read all settings stored in the LED driver (6.1.3)
- Transfer all settings from PC to the Programming Tool (6.1.4)

Using the Programming Tool alone, either locked or unlocked, the following is possible:

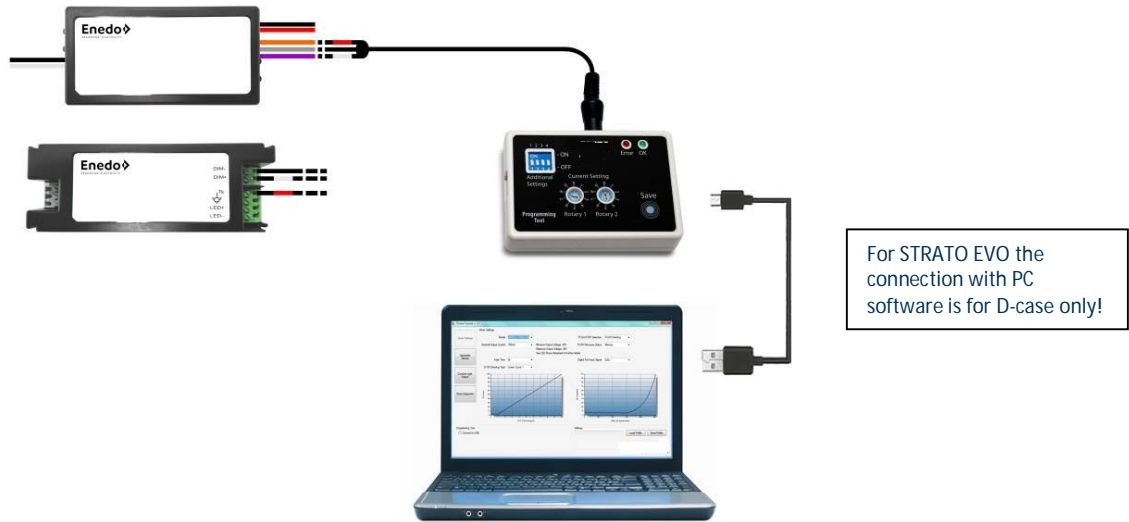
- Transfer all settings from Programming Tool to the LED driver

The following diagram shows all required connections from the PC to the tool and the corresponding LED Drivers Ozone 70W, 150W and Meso 50W:



Programming Wire	OZONE 70/150W	MESO 50W
RED collar wire	Ts	NTC
BLACK collar wire	RTN	-DIM
WHITE collar wire	0-10V Dimm	+DIM

The following diagram shows all required connections from the PC to the tool and the corresponding LED Drivers STRATO EVO S-Case (unlocked mode only) and D-Case (analogic version):



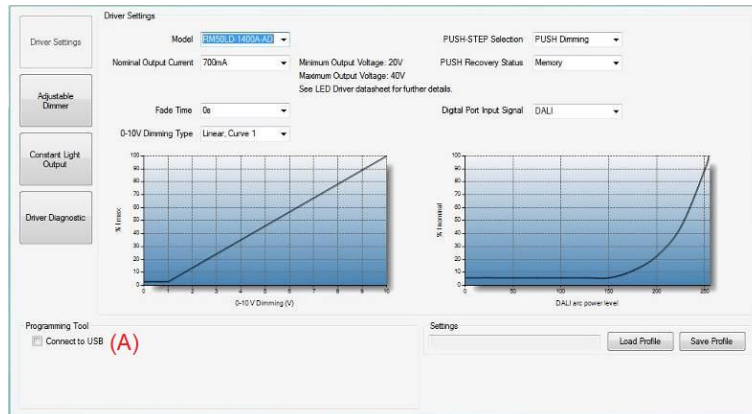
Programming Wire	STRATO EVO S-CASE	STRATO EVO D-CASE
RED collar wire	Orange wire	Ts
BLACK collar wire	Gray wire	-DIM
WHITE collar wire	Violet wire	+DIM

If the LED Driver is to be programmed only with the Program Tool using the Dip and Rotary switches or with a locked tool, the connection to the PC is not required. Refer to the specific series Application Notes for details.

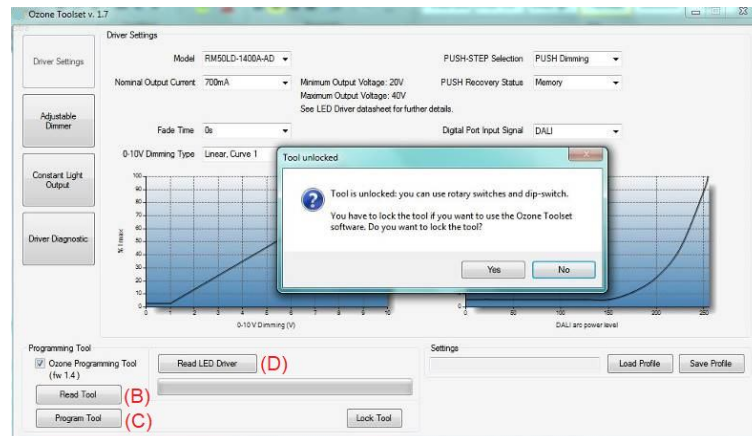
6.1.1 Connect Programming Tool to the PC and software:

This simple process is required to perform all functions of the Programming Tool with the Toolset software.

- Connect Programming Tool to the PC USB port and the LED driver. Power the LED Driver
- Start the Toolset Software
- Tick “Connect to USB” **(A)** to establish the communication between the PC and the Programming Tool



- A “Tool locked” or a “Tool unlocked” message will appear (the Programming Tool must be locked if you want to use the software) and the Programming Tool will be shown as connected. In the dialog box select “Yes” to lock the tool. A second window will open to confirm the tool is locked, click “OK”



6.1.2 Read all settings stored in the Programming Tool

- Complete steps from 6.1.1
- Click the “Read Tool” button **(B)**
- A window will pop up indicating success, click OK
- The PTOOLS characteristics will be read and displayed in the appropriate areas of the software

6.1.3 Read all settings stored in the LED Driver

- Complete steps from 6.1.1
- Click the “Read LED Driver” button **(D)**
- The display below the button will show the progress in reading the LED Driver. When complete a window will pop up indicating success, click OK
- The driver’s characteristics will be displayed in the appropriate areas of the software

6.1.4 To transfer all settings from PC to the Programming Tool:

- Complete steps from 6.1.1
- Select the appropriate settings for Driver Settings (Section 8), Adjustable Dimmer (Section 9), Constant Light Output (Section 10) and Driver Diagnostic (Section 11)
- Push the “Program Tool” button **(C)**: all enabled functions and settings will be stored in the Programming Tool’s non-volatile memory. A window will open indicating success, click “OK” to accept
- To program a driver, connect the tool to the driver and follow the instructions in the appropriate series application notes

6.2 DALI Programming Tool (RSOZ070-PDALI)

The drivers that can accept the DALI programming input (see Table A) can be programmed using the DALI Programming Tool. This tool cannot be used independently and requires connection to the PC and Toolset software to program the drivers.

Using the DALI Programming Tool connected to the PC, the following is possible:

- Read all settings stored in the LED driver (6.2.2)
- Transfer all settings from PC to the LED Driver (6.2.3)



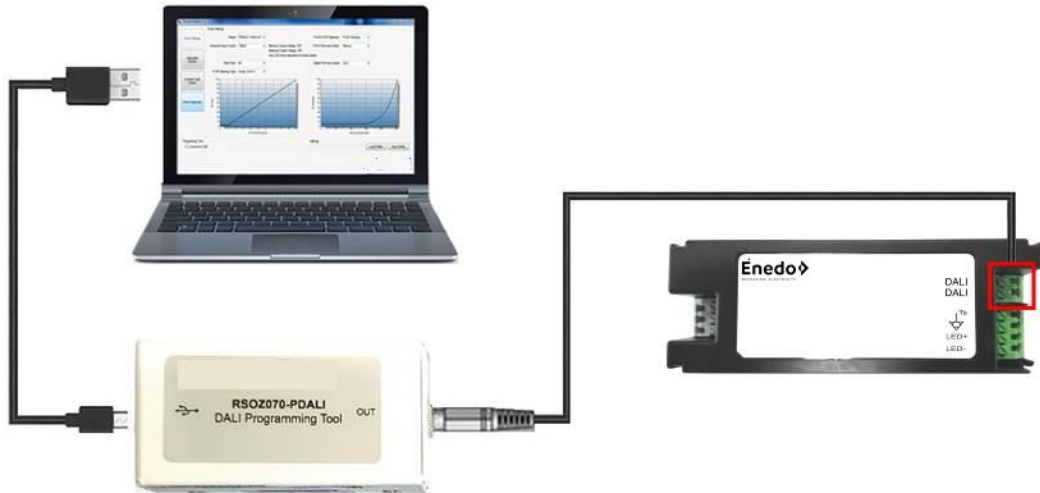
The following diagram shows all required connections from the PC to the PDALI tool and the corresponding LED Drivers Ozone 70W, 150W and Meso 50W:



Programming Wire	OZONE 70/150W	MESO 50W
RED wire*	DALI/PWM	P.A.
BLACK wire*	DALI/PWM	P.A.

(*) polarity respect not required

The following diagram shows all required connections from the PC to the PDALI tool and the corresponding LED Driver STRATO EVO D-case DALI:



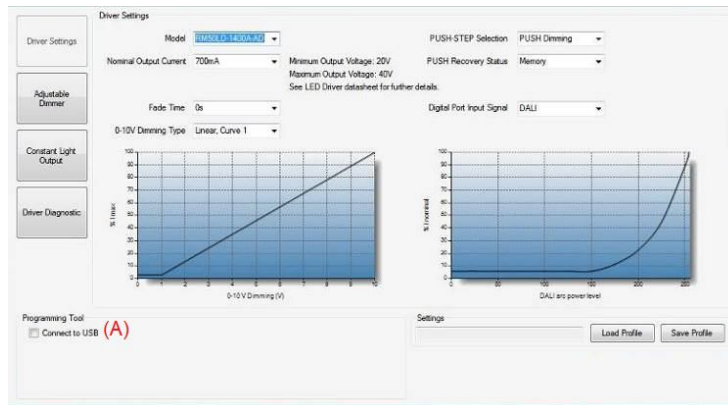
Programming Wire	STRATO EVO D-CASE DALI
RED wire*	DALI
BLACK wire*	DALI

(*) polarity respect not required

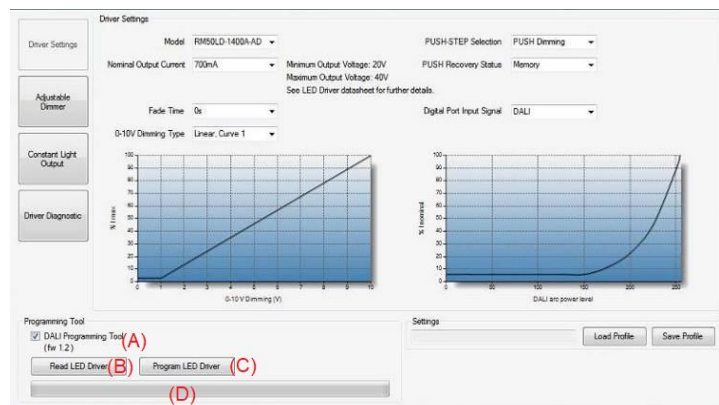
6.2.1 Connect DALI Programming Tool to the PC and software:

This simple process is required to perform all functions of the DALI Programming Tool with the Toolset software.

- Connect DALI Programming Tool to the PC USB port and the LED driver. Apply power the LED Driver
- Start the Toolset Software
- Tick “Connect to USB” **(A)** to establish the communication between the PC and the DALI Programming Tool



- The software will respond by indicating the DALI tool is connected **(A)**, and display the Read LED Driver **(B)** and Program LED Driver **(C)** buttons



6.2.2 Read all settings stored in the LED Driver

- Complete steps from 6.2.1
- Click the “Read LED Driver” button (B)
- The display below the button **(D)** will show the progress in reading the LED Driver. When complete, a window will pop up indicating success, click OK
- The driver characteristics will be displayed in the appropriate areas of the software

6.2.3 To transfer all settings from PC to the LED Driver:

- Complete steps from 6.2.1
- Select the appropriate settings for Driver Settings (section 8), Adjustable Dimmer (Section 9), Constant Light Output (Section 10) and Driver Diagnostic (Section 11)
- Push the “Program LED Driver” button **(C)**. The display **(D)** below the button will show the progress
- All enabled functions and settings will be transferred to the LED Driver. A window will open indicating success, click “OK” to accept
- Changes will be applied at the next power on of the LED Driver

6.3 RFID tools (ROALSET-SINGLE and ROALSET-MULTI)

The RFID PROGRAMMABLE Led drivers (see Table A) can be programmed by using the Toolset software (after V.1.5) and the ROALSET-SINGLE or ROALSET-MULTI RFID readers. This does not require the driver to be powered.

Using the ROALSET-SINGLE Tool connected to the PC, the following is possible:

- Read all settings stored in the LED driver(s) (6.3.2)
- Transfer all settings from PC to the LED Driver(s) (6.3.3)
- Auto-mode programming (6.3.6)

Using the ROALSET-MULTI Tool, the same features are possible, for the complete and unopened shipping box of LED Drivers. For MESO 50 this is 24 pieces, for OZONE 150 it is 16 pieces, for STRATO EVO S-CASE it is 20 pieces and for STRATO-EVO D-CASE it is 16 pieces

Connecting the ROALSET-SINGLE Tool

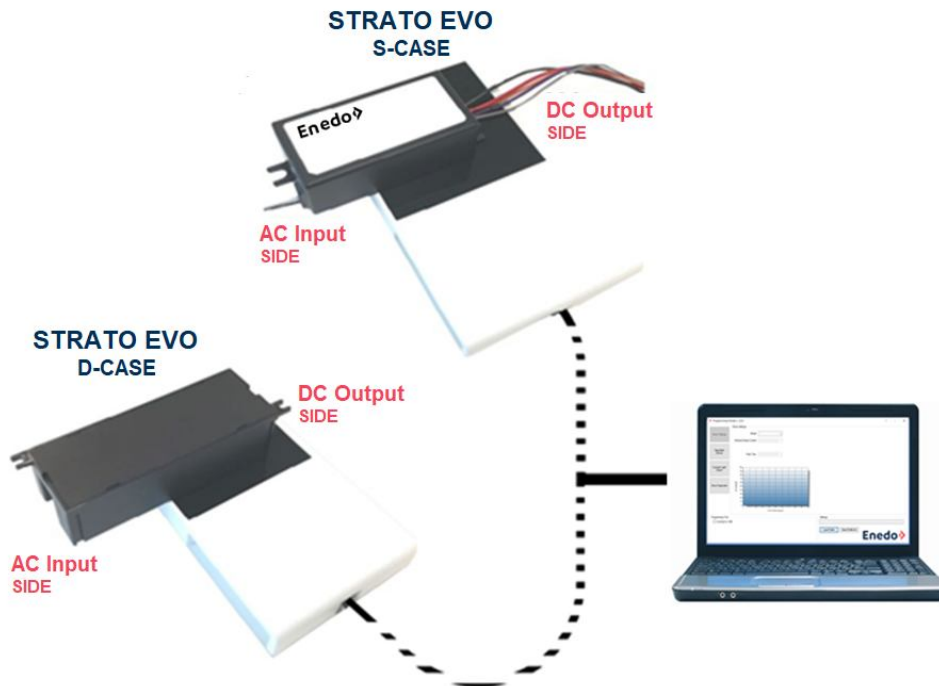
To connect the ROALSET-SINGLE tool, simply plug the included USB cable from the tool and attach to the PC. No connections are required to the LED Driver.



When using the ROALSET-SINGLE tool, the individual drivers MESO 50 and OZONE 150 must be placed on the tool in the orientation shown below:



When using the ROALSET-SINGLE tool, the individual drivers STRATO EVO S-case and D-case must be placed on the tool in the orientation shown below:



IMPORTANT: respect exactly the LED driver position (centering and orientation) on the antenna pad (as shown in the above image).

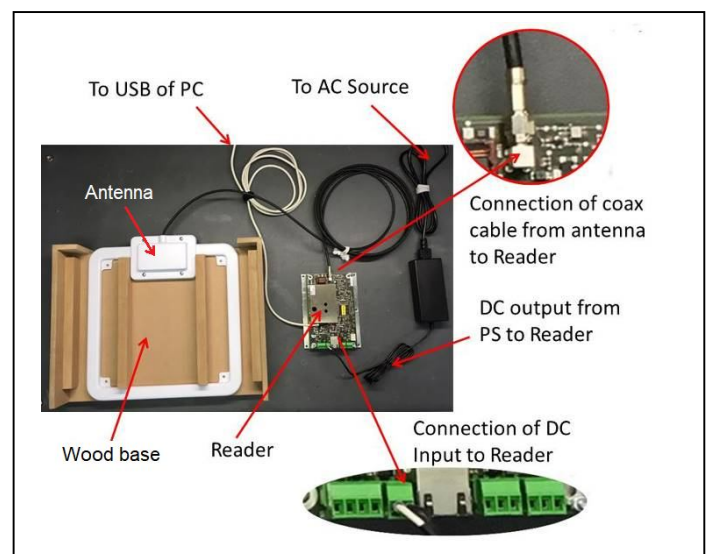
Centering: the antenna inside the LED driver is not perfectly centered in the plastic package, for this reason the required position on the antenna pad is little bit decentered.

Orientation: facing up (label on top) for S-case models and facing down (label on bottom) for D-case versions.

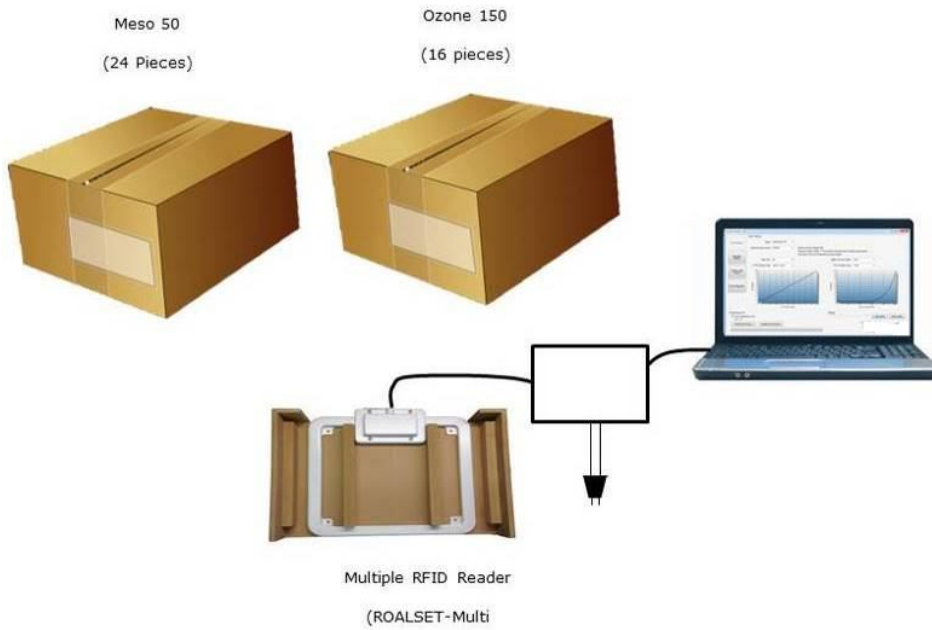
Connecting the ROALSET-Multi Tool

The ROALSET-Multi tool requires some assembly prior to the first use.

- Position the antenna on the wood base
- Connect the coax cable from the Antenna to the Reader
- Connect the DC output from the power supply to the DC Input on the Reader
- Connect the USB cable from the Reader to the PC
- Connect the AC power cord from the Power Supply
- **Be sure the antenna and the reader are not in proximity to any metal surface or small parts (ideally put the antenna on wooden table)**



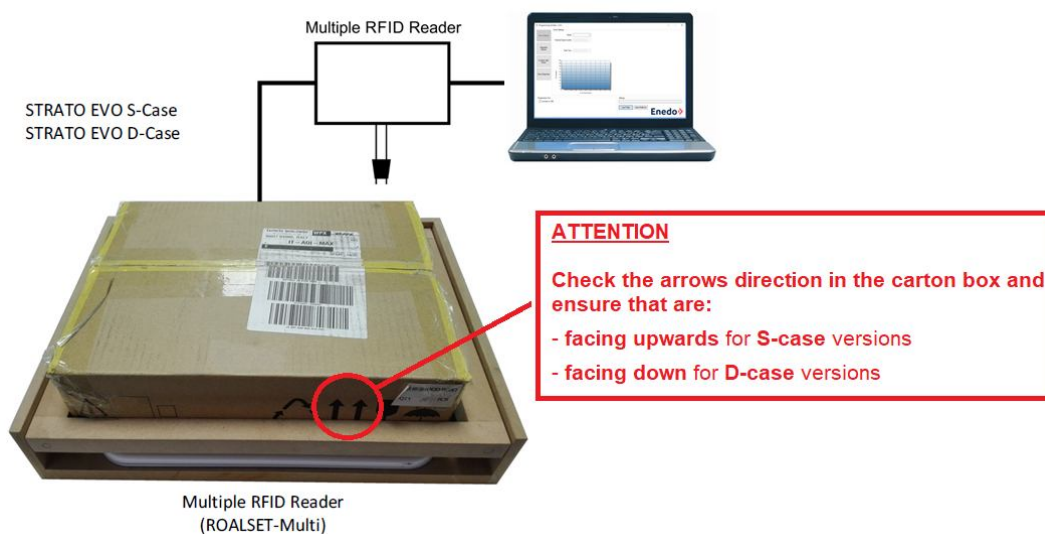
Once the ROALSET-MULTI tool is properly connected, it can be used with the Toolset Software. The multi pack shipping box is then placed onto the antenna/fixture as shown.



Position the adapter (**W**) on the antenna and the wood base, to adapt for the STRATO EVO boxes.



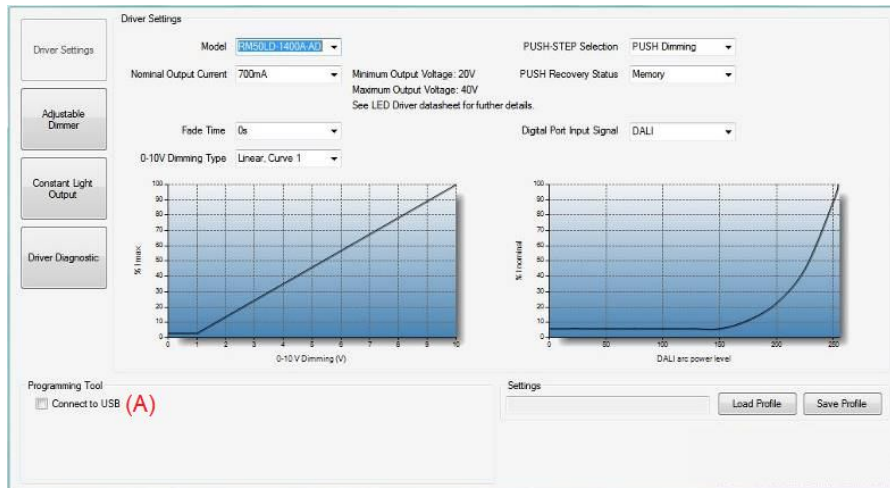
Once the ROALSET-MULTI tool is properly connected, it can be used with the Toolset Software. The multi pack shipping box is then placed onto the antenna/fixture as shown.



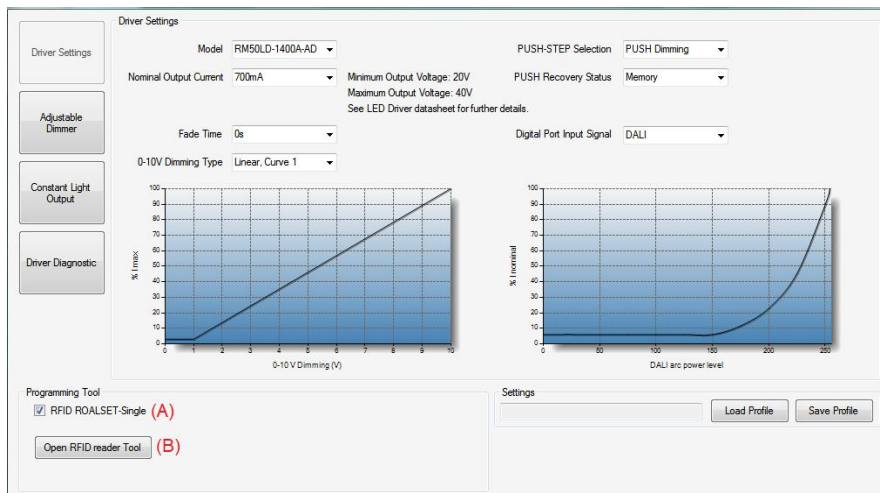
6.3.1 Connect ROALSET Tool to the PC and software:

This simple process is required to perform all functions of the ROALSET Tools with the Toolset software.

- Connect ROALSET-SINGLE or -MULTI Tool to the PC USB port
- Start the Toolset Software
- Tick “Connect to USB” **(A)** to establish the communication between the PC and the ROALSET Tool



- The software will respond by indicating the RFID Reader tool is connected **(A)**, and display the Open RFID reader Tool button **(B)**

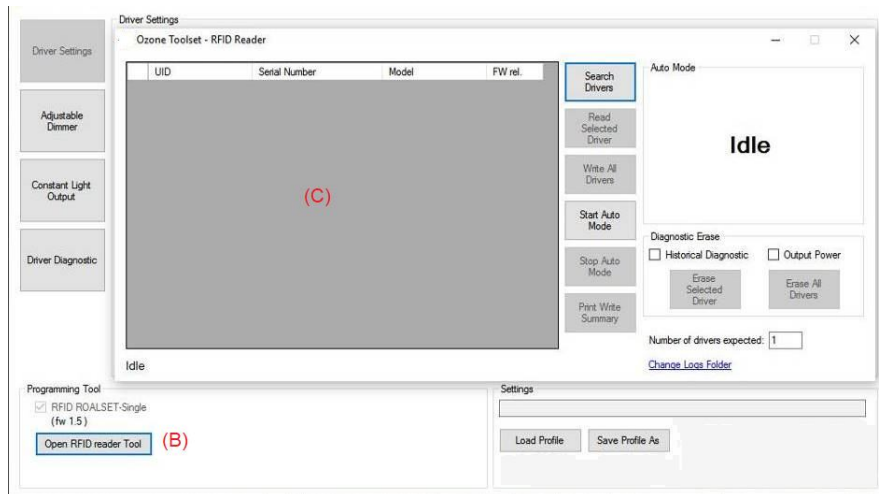


The Tool is now connected to the PC and software, and is ready for use.

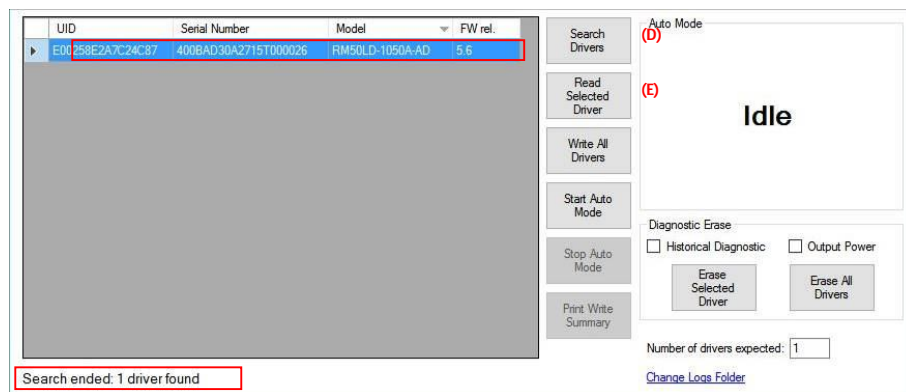
Refer to sections 8 through 11 for details on Driver Settings, Adjustable Dimmer, Constant Light Output and Driver Diagnostic tabs.

6.3.2 Read all settings stored in the LED Driver(s)

- Complete steps from 6.3.1
- Click the Open “RFID reader Tool” button **(B)**. The RFID reader will open in a second window **(C)**



- Place a single driver on the ROALSET-Single tool or a box of drivers on the ROALSET-Multi tool and click the “Search Drivers” button **(D)**

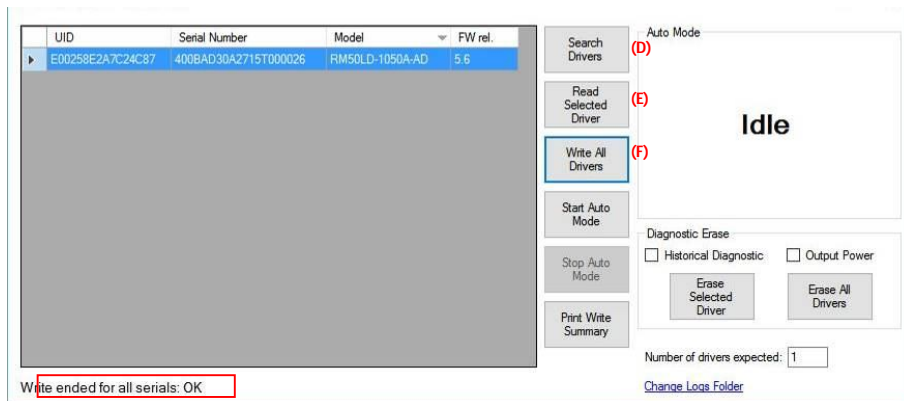


- The window will then display the basic details of the driver(s), such as Unit ID (UID), Serial Number, Model and FW Release
- In the lower right corner of the RFID Reader window, there is a box labeled “Number of drivers expected” and the default is 1. When searching multiple drivers, if this remains as 1, a pop up window will appear indicating the number of drivers found if it is different. To avoid this warning, enter the appropriate number of drivers expected (16 for OZONE 150, 24 for Meso50, 20 for STRATO EVO S-CASE, 16 for STRATO-EVO D-CASE for a complete box)
- By either moving the RFID window to the side, or clicking on the mainToolset window, the actual settings of the driver can be checked. If multiple drivers are listed, the first driver in the list will be shown in the mainToolset window. If it is desired to read a different driver in the list, select the appropriate driver in the list and then click the “Read Selected Driver” button **(E)**
- If the RFID Reader window is not in view, click the Open RFID Reader Tool button

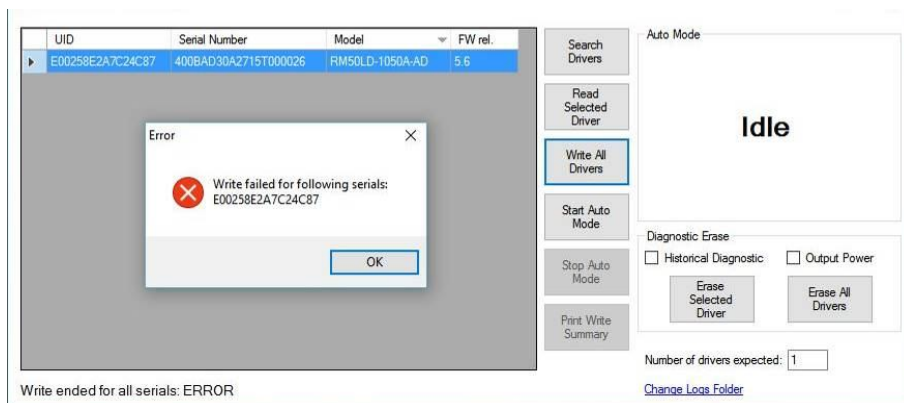
Refer to sections 8 through 11 for details on Driver Settings, Adjustable Dimmer, Constant Light Output and Driver Diagnostic tabs.

6.3.3 To transfer all settings from PC to the LED Driver:

- Complete steps from 6.3.1
- On the main Toolset Software screen, select the appropriate settings for Driver Settings (Section 8), Adjustable Dimmer (Section 9), Constant Light Output (Section 10) and Driver Diagnostic (Section 11)
- Click the Open RFID Reader Tool button, or select the window if already open
- If a list of drivers is not present, click the Search Driver button
- For a single or multiple drivers programming click the “Write All Drivers” button **(F)**



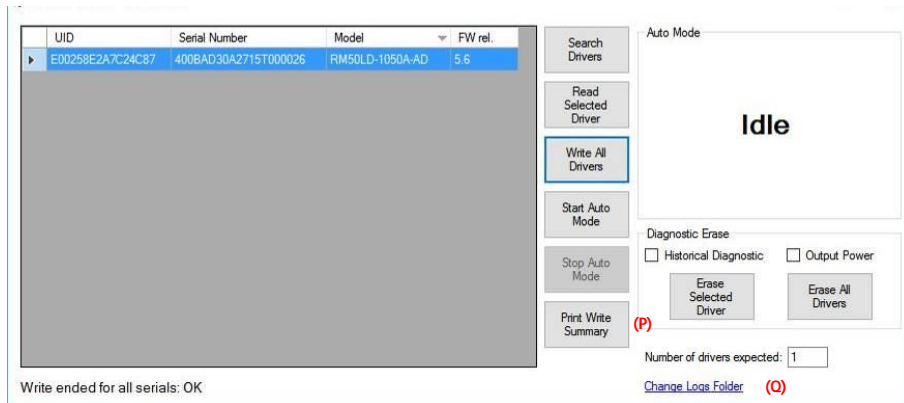
- When complete, a note will appear at the bottom of the window indicating the programming was OK
- An error window will pop up if the programming was not successful. In this case, repeat the programming attempt



6.3.4 Report Printing

The RFID Reader Tool allow you to print out a report once a single unit or multiple units have been successfully programmed. This option is available after choosing "Write All Drivers" option once the units have been successfully programmed, this option is not available when the "Auto Mode" is selected (6.3.6).

- Complete steps from 6.3.3
- Click "Print Write Summary" button (P)



The report provides a summary of the characteristics for all the listed units after each programming sequence. The document can be stored in order to have an history LOG for the programming activity.

20/02/2017 11:51:06

ENEDO Programmable Driver Summary

UID	Serial Number	Model	FW rel.
E00258E2A7C24C87	400BAD30A2715T000026	RM50LD-1050A-AD	5.6

Nominal Output Current 500mA
Fade Time 10s
0-10V Dimming Type Linear, Curve 2
PUSH-STEP Selection PUSH Dimming
PUSH Recovery Status Memory
Digital Port Input Signal DALI
Adjustable Dimmer Enabled
Constant Light Output Enabled

Programmed 1 drivers out of 1 expected

This information summarizes the characteristics which are programmed into the listed drivers. Please use this information to identify the drivers characteristics in a manner appropriate for your application. The markings in the drivers represent factory settings and may be different from the configuration of the programmed drivers.

If the number of units expected does not match the number of units listed, a warning message will be showed at the end of summary report.

Warning: programmed 1 driver (UID E00258E2A7C24A25) out of 1 found and 2 expected

6.3.5 Logs files

Each RFID programming operation is stored in Logs files written in CSV format with columns values delimited with semicolons ";".

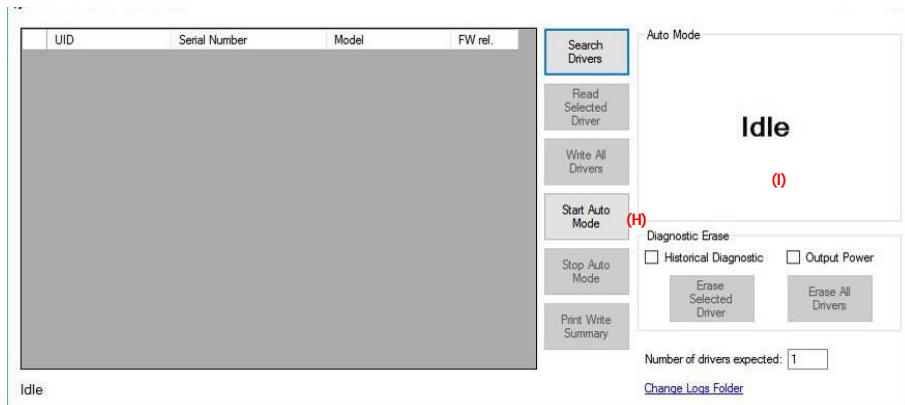
The Logs files names have the following format "YYYY_MM_DD.csv", every day a dedicated file is created in order to keep trace of the programming history of a specific computer. The default folder for the Logs file is

"C:\Users\<username>\Documents\Programming Toolset Log". It is also possible to redefine the default Logs directory by pressing the option "Change Logs Folder" (Q).

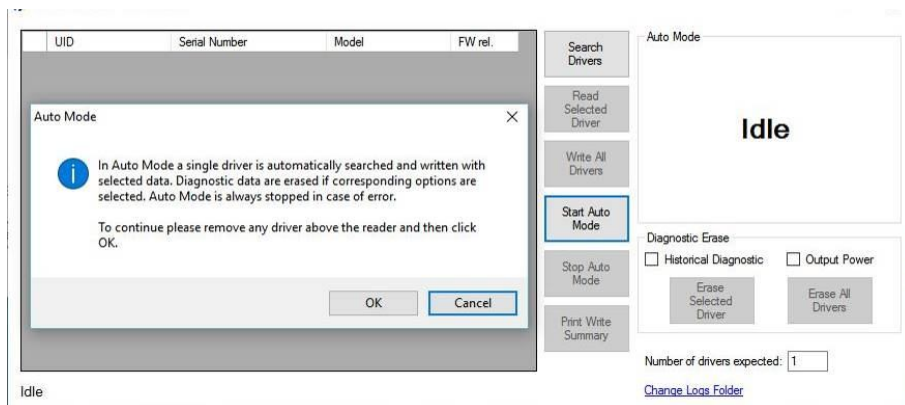
6.3.6 Auto Mode

Auto mode is used mainly with the ROALSET-Single tool when multiple drivers are to be programmed to the exact same settings. The software will automatically search for a single driver and when found will program the driver to the settings entered.

- Complete steps from 6.3.1
- On the main Toolset Software screen, select the appropriate settings for Driver Settings (Section 8), Adjustable Dimmer (Section 9), Constant Light Output (Section 10) and Driver Diagnostic (Section 11)
- Click the Open RFID Reader Tool button, or select the window if already open
- Click the Start Auto Mode button **(H)**



- A window will pop up with a warning and confirmation of Auto Mode. Click OK to continue



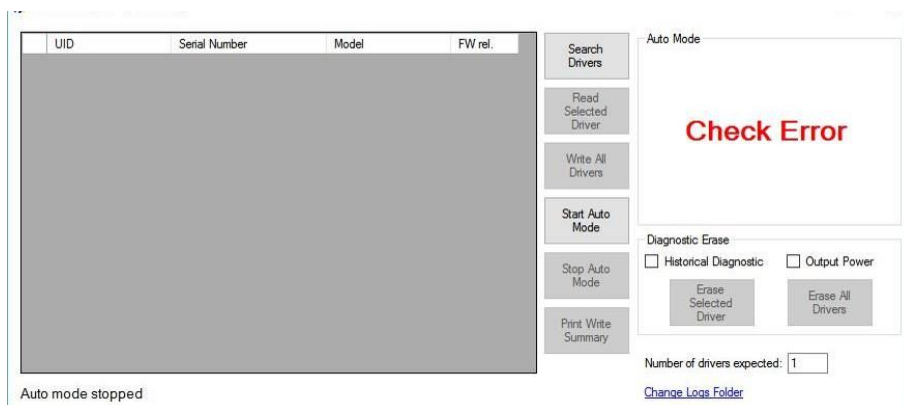
- The Auto Mode area of the window **(I)** will then change from Idle to Searching...



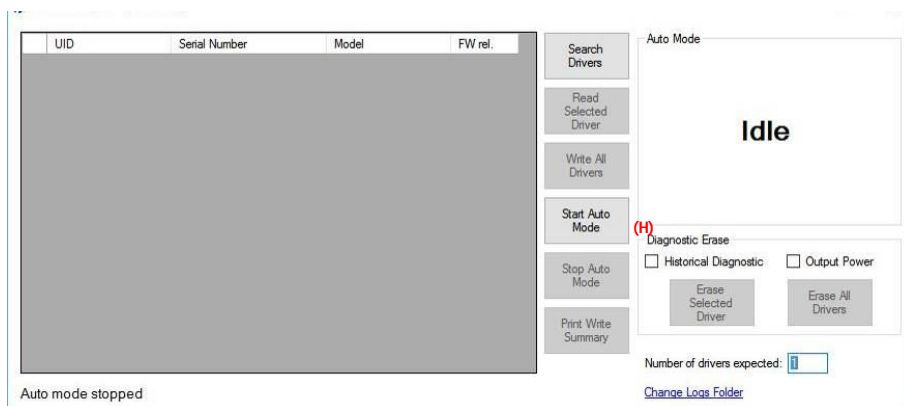
- With the driver in the proper orientation, move the driver over the ROALSET-Single reader. It can be moved from the side or from above. As it gets within range of the reader (~ 1 inch), the Auto Mode Area (I) will indicate "In Progress..." and then "Write OK"



- The driver is now programmed and can be set aside. Other drivers can be programmed in the same way
- If the driver is not programmed properly, the Auto Mode Area (I) will indicate an error, and the status will indicate Auto Mode stopped



- To continue programming in Auto Mode, the Start Auto Mode button must be clicked again

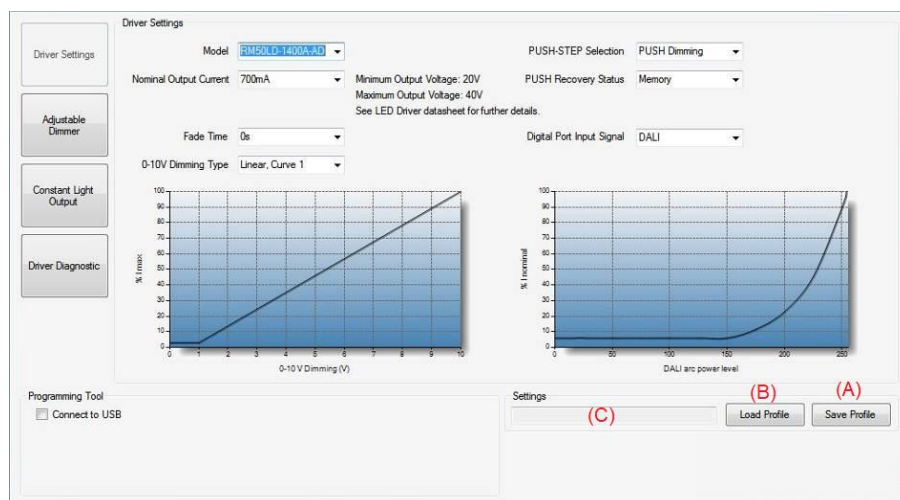


7. SAVE / LOAD PROFILES

The Toolset Software has a feature which permits the saving and loading of profiles. This allows a unique program to be input to the software, saved and used for production updating so all hardware is programmed the same without having to reenter the information multiple times, thus preventing errors.

7.1 Saving a Profile

- Load the Toolset Software
- Enter the settings for the driver using one of the below methods:
 - Using a driver with the appropriate settings, read the characteristics (refer to 6.1.3 for Ozone PTOOL, 6.2.2 for PDALI tool or 6.3.2 for ROALSET-SINGLE or –MULTI)
 - Enter the driver settings in each tab (Driver Settings, Adjustable Dimmer, Constant Light Output)
- Click the Save Profile button **(A)**



- A Save Profile window will open. Select a file location and enter a filename, then click Save. The file path will then show up in the Settings box **(C)**

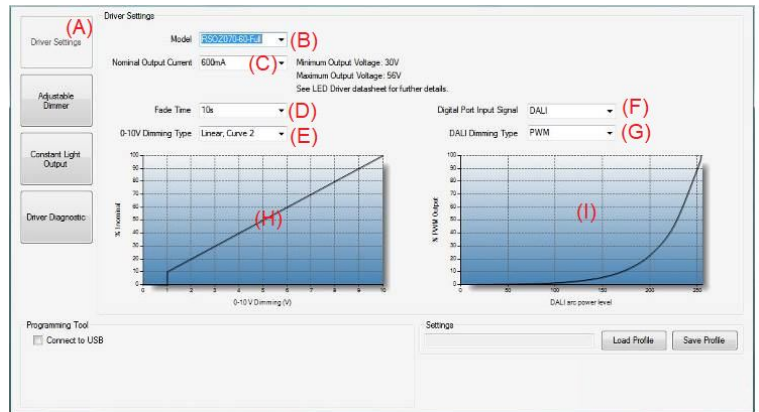
7.2 Loading a Profile

- Load the Toolset Software
- Click the Load Profile button **(B)**
- A Load Profile window will open. Locate the file to be used and click Open. The file extension will be “.ozt”.
- The complete file path will be shown in the Settings Box **(C)**
- To program the driver or tool, follow the instructions in section 6.1.4 for the Programming Tool and 6.2.3 for the PDALI tool. For the ROALSET tools, it is recommended to use the Auto Mode (6.3.4) to program the driver

8. LED DRIVER SETTINGS

The LED Driver Settings window permits the user to set the driver's features.

- Select the "Driver Settings" window by pushing button **(A)**
- Select the driver model **(B)**
- Set the nominal output current* **(C)**
- Set the fade time **(D)**
- Set the 0-10V Dimming Type **(E)**
- Chose the digital port input signal **(F)**
- Ozone 150W only: if DALI has been selected, choose the DALI dimming type **(G)**

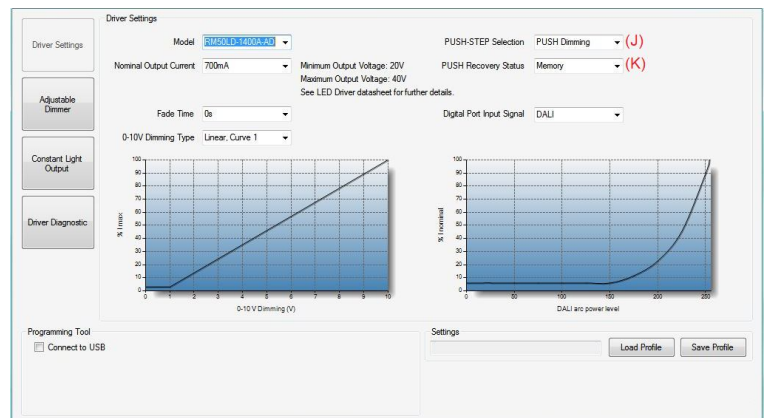


*High current settings may cause max output voltage level reduction due to power limitation (see driver datasheet for details).

Based on selection done in **(E)**, you will see a graphical representation of your 0-10V dimming selection in **(H)**. Based on selections done in **(F)** and **(G)**, you will see a graphical representation of your digital dimming selection in **(I)**.

For Meso 50 Only:

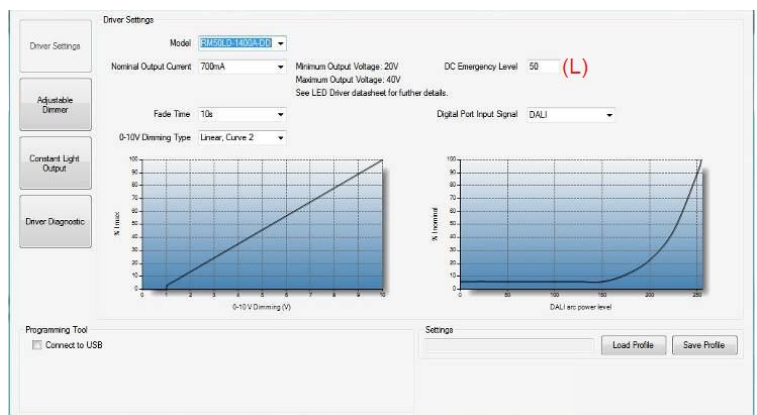
- Choose between PUSH dimmer and STEP dimmer **(J)**
- For Push Dimming, select Push Recovery Status **(K)** as Memory or Safe
- For Step Dimming, select STEP Dimming level **(K)**



Meso 50 DC models only:

- Set the DC emergency level **(L)**

When enabled, if a DC waveform is detected at the main input terminals, the output current can be set as a percentage of the programmed current. All the other dimming features (0-10, DALI, Constant Light Output) will be disabled.



9. ADJUSTABLE DIMMER SETTINGS

The Adjustable Dimmer function allows users to schedule up to five (5) dimming levels for a custom night-light profile, synchronized to worldwide time zones.

The self-updating LED driver embedded firmware determines the night real time without an internal real time clock: instead it calculates a “virtual clock time” determined by duration of operation of the driver in the night. This means no battery inside, therefore no field maintenance. Just turning the lighting fixture ON/OFF with a photo cell, the custom light profile will be self-synchronized to the real-time zone, without any clock setting in the installation area.

To create a new custom night light profile:

- Select the Adjustable Dimmer window by pushing button (A)
- Tick to Enable the function (B)
- Starting from “Period 1” up to “Period 5” (C), adjust all light levels (D) and all period durations (E) by using the two dedicated sliders
- Select the location (F) of the installation place
- Now you will see a graphical representation of your night light profile in (G)



At the very first turn-on, the LED driver will start executing the night light profile from “Period 1”. The custom light profile will be synchronized with the local time (installation place) after the first valid night cycle.

If the unit turn-on is below three (3) hours, it will not be considered as a valid night cycle, so it will not be used for the local time calculation.

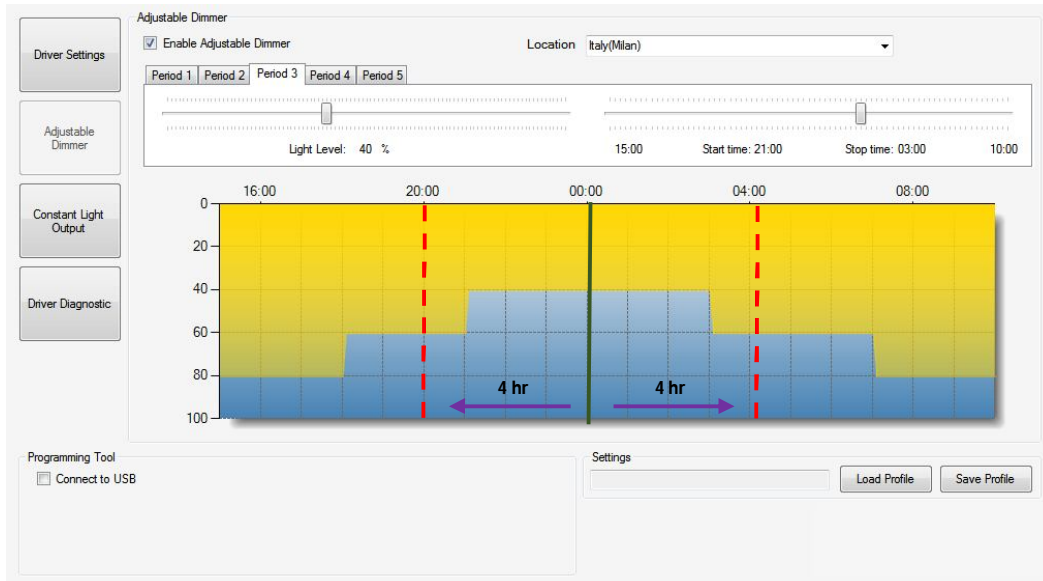
The driver calculates the virtual clock time each time it starts up, so it is capable of adjusting to seasonal changes, where the driver ON-time varies gradually over the year.

NOTE: The “Adjustable Dimmer” function allows for programming of a maximum 19 hours light profile. If the lamp remains powered for a time longer than 19 hours, during the additional hours (over 19 hours) the light level will remain at the “Period 5” level.

NOTE: If you use the “Adjustable Dimmer” function, all the other dimming functions (0-10V, DALI/PWM, Constant Light) can be used at the same time: the final dimming level will be the product of all dimming levels. For example, if the “Adjustable Dimmer” level is 80% and the “Constant Light” level is 110%, the final level will be 88%.

NOTE: Please refer to the driver datasheet to understand the minimum dimming level allowed.

Example: *The location is set in Italy (Roma) and the midnight point is accordingly placed by the program. After the first night, a working time of 8 hours is calculated. Starting from the second night the software will center the working time on the midnight point, therefore the real starting point (when the driver is turned on by the AC photocell) will be placed 4 hours before and the initial light profile will be the one set for that time. The end of the dimming operation (when the driver is turned off by the AC photocell) is similarly placed 4 hours after the midnight point. From the third night on, the working time will be calculated as the average of the two previous working times.*



10. CONSTANT LIGHT OUTPUT SETTINGS

The Constant Light Function, available in the Meso50, in the Ozone models and in the STRATO EVO D-case DALI version starting from the firmware revision 1.4, programs the driver to define a current compensation versus time so that the Driver increases the output current to compensate for the LEDs performance depreciation.

This function ensures the driver will meet stringent requirements at the LED Lamp level when a Constant Light along the Lamp life is required.

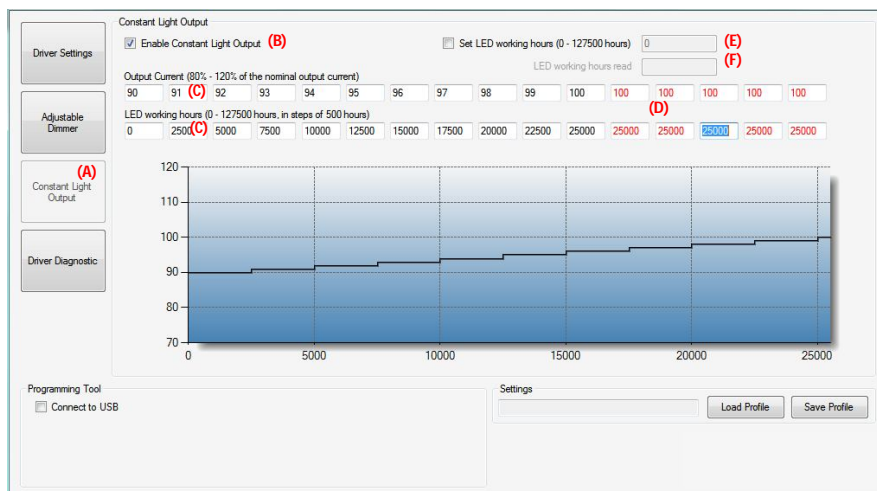
The Output current compensation depends on the LEDs characteristics and the actual working conditions (temperatures, power, etc.). The "Toolset" software, the Constant Light function allows to create a fully customizable output current profile along the time in order to meet all LEDs characteristics and all possible working conditions.

If this function is not used, the LED Driver provides a Constant Current output along the time.

Note: If you use the Constant Light function, all dimming functions can be used at the same time.

10.1 To create a new "Constant Light" profile:

- Select the Constant Light window by pushing button **(A)**
- Tick to Enable the function **(B)**
- The custom current profile along the time is defined by inputting the proper values into the $I_{OUT}/I_{max}\%$ and the timing boxes **(C)**
- The minimum I_{OUT} is 80% I_{max} , the max I_{OUT} is 120% I_{max}
- The timing scale can reach 127500hrs in increments of 500hrs. Red values indicate that they will not be used in the actual constant light profile **(D)**
- In case of replacement of an LED Driver it is possible to set the working hours of the LED Board **(E)**. In case of a new LED board, the same space can be used to reset the value introducing zero hours
-



When reading the driver settings directly from the LED drivers (see sections 6.1.3, 6.2.2 and 6.3.2), **(F)** will show the actual working hours of the LED Board.

NOTE: If you use the Constant Light function, all the other dimming functions (0-10V, DALI/PWM, Adjustable Dimmer) can be used at the same time: the final dimming level will be the product of all dimming levels. For example, if the Constant Light level is 110% and the Adjustable Dimmer level is 80%, the final level will be 88%.

11. LED DRIVER DIAGNOSTIC

The Ozone family allows the user to read some information relating to the driver diagnostic features. Through the use of any of the 3 programming methods it is possible to access the past history of the driver's protection features (Historical Diagnostic). With the PDALI tool, it is also possible to access the present status (Actual Diagnostics) of the protection features as well as measuring the actual output current and power.

11.1 To access the driver's diagnostics:

- Connect the programming tool and read the drivers information: refer to para 6.1.3 (PTOOL), 6.2.2 (PDALI) or 6.3.2 (ROALSET tools) Ozone 150W only.
- Click on the Driver Diagnostic button **(A)**



- The Historical Diagnostic area **(B)** lists the possible protection features
- If any event has occurred, the box will be checked
- Next to the checkmark the hour of the latest event only will be displayed
- The LED Board Output Power graph **(C)** indicates the output power distribution (in terms of working hours) during the life of the driver

11.2 Erasing Diagnostic Data

When using the PTOOL or PDALI programming methods:

- Press the Erase Historical Diagnostic button **(E)**
- A window will pop up indicating the data has been erased from the driver’s memory
- Press the Erase Output Power Data button **(F)**
- A window will pop up indicating the data has been erased from the driver’s memory

WARNING: There is no alert prior to the data being erased. Once the button is pressed, the data will be erased.

When using the ROALSET tools, the erasing of the diagnostic data is performed in the RFID Reader window.

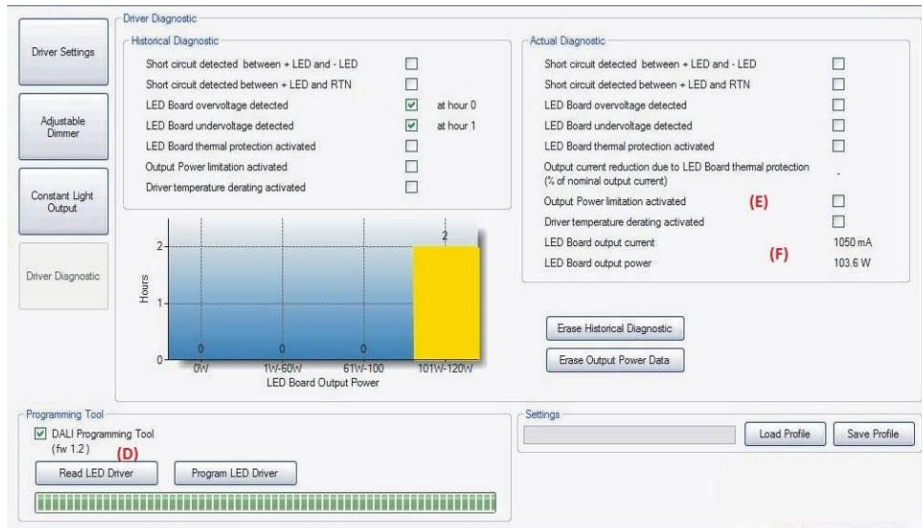


- Locate the Diagnostic Erase area of the RFID Reader window
- Click the Historical Diagnostic button **(B)** and/or the Output Power button **(C)** to select the features to be erased
- To erase the diagnostic data for a single driver, ensure the proper driver is selected and press the Erase Selected Driver button **(D)**
- To erase the diagnostic data for all drivers when using the ROALSET-Multi tool, press the Erase All Drivers button **(E)**

11.3 Additional diagnostics for PDALI tool

When using the PDALI tool, in addition to the historical diagnostics described above, it is possible to obtain more timely status and data:

- After clicking the Read LED Driver button **(D)**, the Actual Diagnostic area **(E)** will be available.



- This area shows the present status of the protection features. Please note that this is not an active live representation of the status, it is a picture of the status when the driver was read. To refresh the status, click the Read LED Driver button (D)
- It also shows the actual output current and power **(F)**

12. FIRMWARE AND SOFTWARE REVISION OVERVIEW

All the programmable features of the LED drivers can be set according to the revision levels of the product's firmware, the Programming Tool firmware and the PC Software.

The firmware revision of the LED drivers is indicated by a dedicated label placed as shown in the pictures below (for each driver), while the revision of the Programming Tool is reported on the back side of the tool.



OZONE 70W

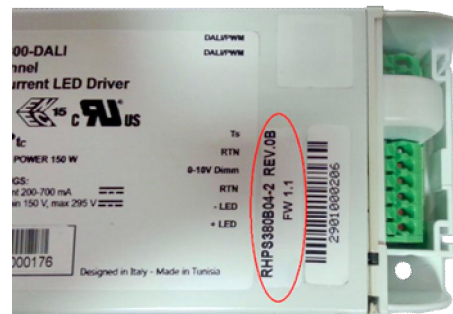


Ozone Programming Tool (RSO2070-PTOOL)

Note: No label is reported at rev.1.1



MESO 50W



OZONE 150W

The Constant Light feature has been introduced with the “Ozone Toolset v1_0” software version, and is available for Ozone 70W drivers at firmware level 1.4 or later and Ozone Programming Tool at level 1.2 or later.

Support for the Ozone 150W family and the DALI Programming Tool have been introduced with the “Ozone Toolset v1_4” software version.

The 0-10V Dimming Type, the DALI Dimming Type and the Driver Diagnostic features have been introduced with the “Ozone Toolset v1_4” software version, and they're available with Programming Tool at level 1.3 or later.

The ability to use the Software with the Meso50 drivers has been added in the “Ozone Toolset v.1.5”.

The ability to use the software with the Strato Evo drivers has been added in the new “Programming toolset v.2.3” that replace the “Ozone Toolset” and it's backward compatible with all ENEDO programmable drivers.

For any firmware revision, the proper match with the Programming Tools and the Software revisions is reported in the following table.

Features available	Ozone 70W FW rev	Ozone 150W FW rev	Ozone P. Tool RSOZ070-PTOOL rev	DALI P. Tool RSOZ070-PDALI rev	Ozone PC Software Pack
General hardware settings Fade time, DALI/PWM, current setpoint & Adjustable Dimmer	1.3	NO	1.1 1.2 and later (only unlocked mode; Adjustable dimmer not available)	NO	"Ozone Adjustable Dimmer v1_1" NO
General hardware settings Fade time, DALI/PWM, current setpoint, Adjustable Dimmer & Constant Light	1.4 and later	NO	1.1 1.2 and later	NO	"Ozone Adjustable Dimmer v1_1" "Ozone Toolset v1_0" and later
General hardware settings Fade time, DALI/PWM, current setpoint, Adjustable Dimmer & Constant Light	1.4 and later	ALL	1.2 and later	NO	"Ozone Toolset v1_4"
Full Driver Settings & Driver Diagnostic	NO	ALL	1.2 and later	ALL	"Ozone Toolset v1_4"