



FluxTool

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1. Getting started

How to connect a TOOLbox pro and TOOLbox adapter

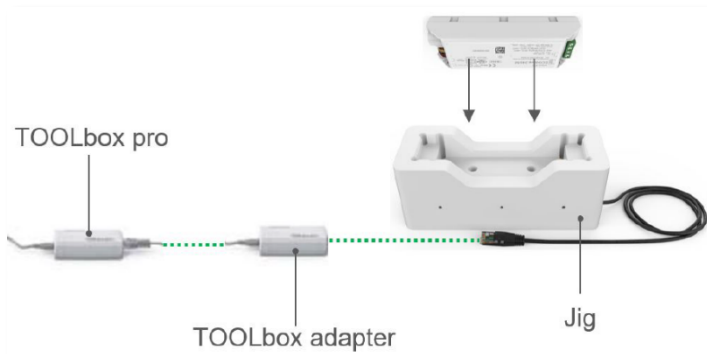
1) Connect the TOOLbox pro to the PC

Connect the TOOLbox to the PC using the supplied USB cable.



2) Connect the TOOLbox adapter

Connect the optional TOOLbox adapter to the TOOLbox using the supplied RJ45 to RJ45 cable. This adapter enables programming drivers without AC power and is required in order to use configuration jigs.



3) Connect to LEDcode or DMX on the driver

Depending on driver type, connect either LEDcode or DMX from the pigtail to the driver.



LEDcode connection



DMX connection

2. FluxTool layout

2.1. Program tab

This is how the **Program tab** looks:

Menu tabs Status window Label printing
This section is to print labels App update notification area
The ▲ symbol indicates that updates are available Permission level selector
To switch to an other mode

The screenshot shows the FluxTool application window. On the left is a dark sidebar with 'Menu tabs' (Program, Profiles, Settings). The main area is divided into three panes. The top status bar shows 'Status: Ready', 'POWERdrive 561', 'Driver Connected', 'TOOLbox Connected', and buttons for 'Write', 'Auto-Write', 'Read', 'Auto-Read', and 'Print Label'. The 'Profiles' pane on the left contains a table of profiles. The 'Parameters' pane on the right shows settings for the selected profile and the connected driver.

Profiles Quick find

Name ▼	Driver Type ▼	Created ▼
SL560 /A	SOLOdrive 560	12 Aug 2019
PW 561 /A	POWERdrive 561	09 Jul 2019
SL 360 400mA	SOLOdrive 360	12 Mar 2019
DUAL 562/S DT8	DUALdrive 562	25 Jul 2019
Sales Demo	DUALdrive 1290	05 Jul 2019
SL 560 800mA	SOLOdrive 560	31 May 2019
561 test	POWERdrive 561	13 Aug 2019

Parameters Clear Comparison Compare Auto-Compare

Profile [561 test]

Drive

Current output group 1	700 mA
Current output group 2	700 mA
Current output group 3	700 mA
Current output group 4	700 mA

Control

Dimming curve	logarithmic
Group 1 scaling	255
Group 2 scaling	255
Group 3 scaling	255
Group 4 scaling	255
Interpolation	Off
Master dimmer value	255

Driver [Connected] Save as Profile Edit

Drive

Current output group 1	400 mA
Current output group 2	300 mA
Current output group 3	200 mA
Current output group 4	500 mA

Control

Dimming curve	logarithmic
Group 1 scaling	255
Group 2 scaling	255
Group 3 scaling	255
Group 4 scaling	255
Interpolation	Off
Master dimmer value	255

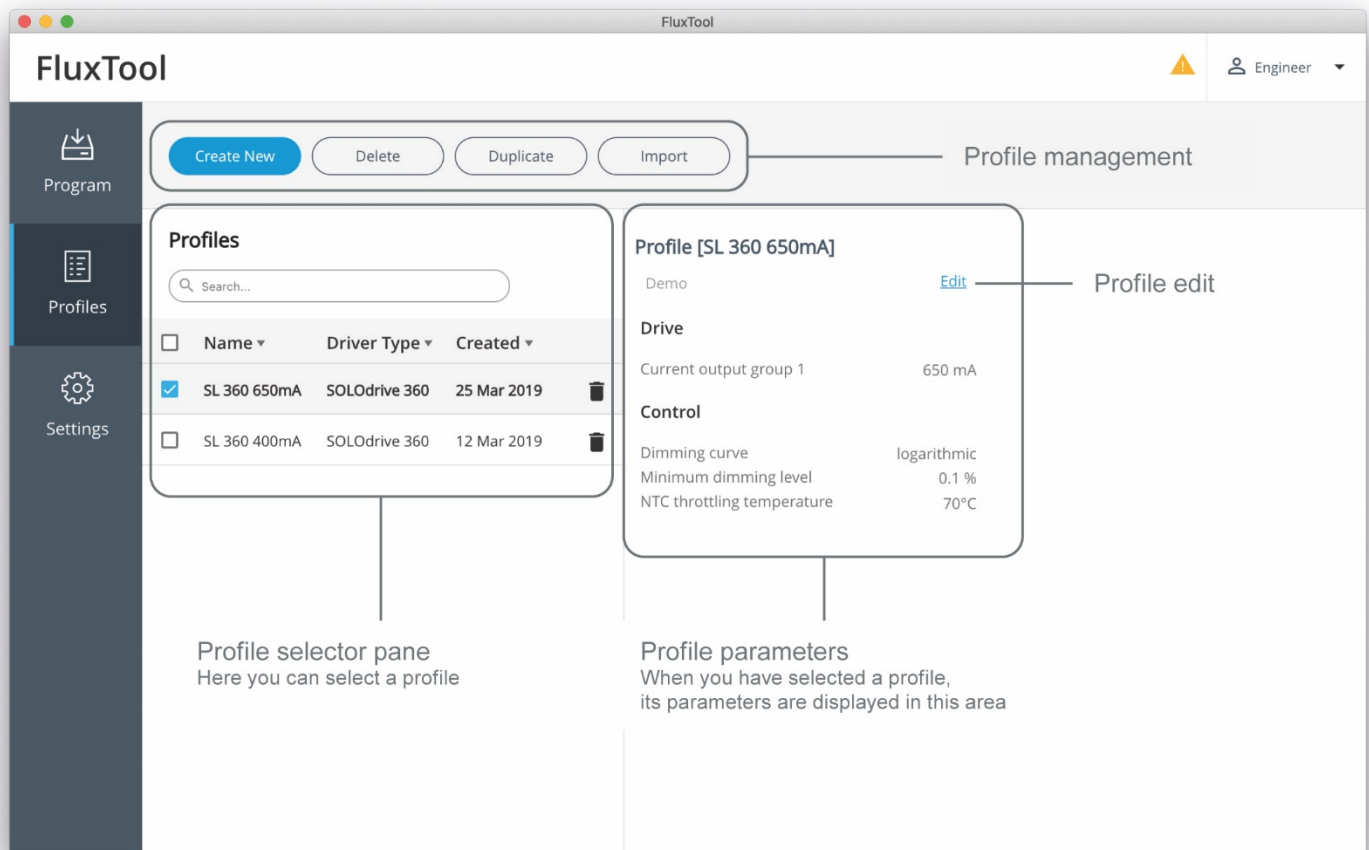
Profile selector pane
Here you can select a profile

Profile parameters
When you have selected a profile, its parameters are displayed in this area

Driver parameter pane
In this section the connected driver and its current parameters are displayed

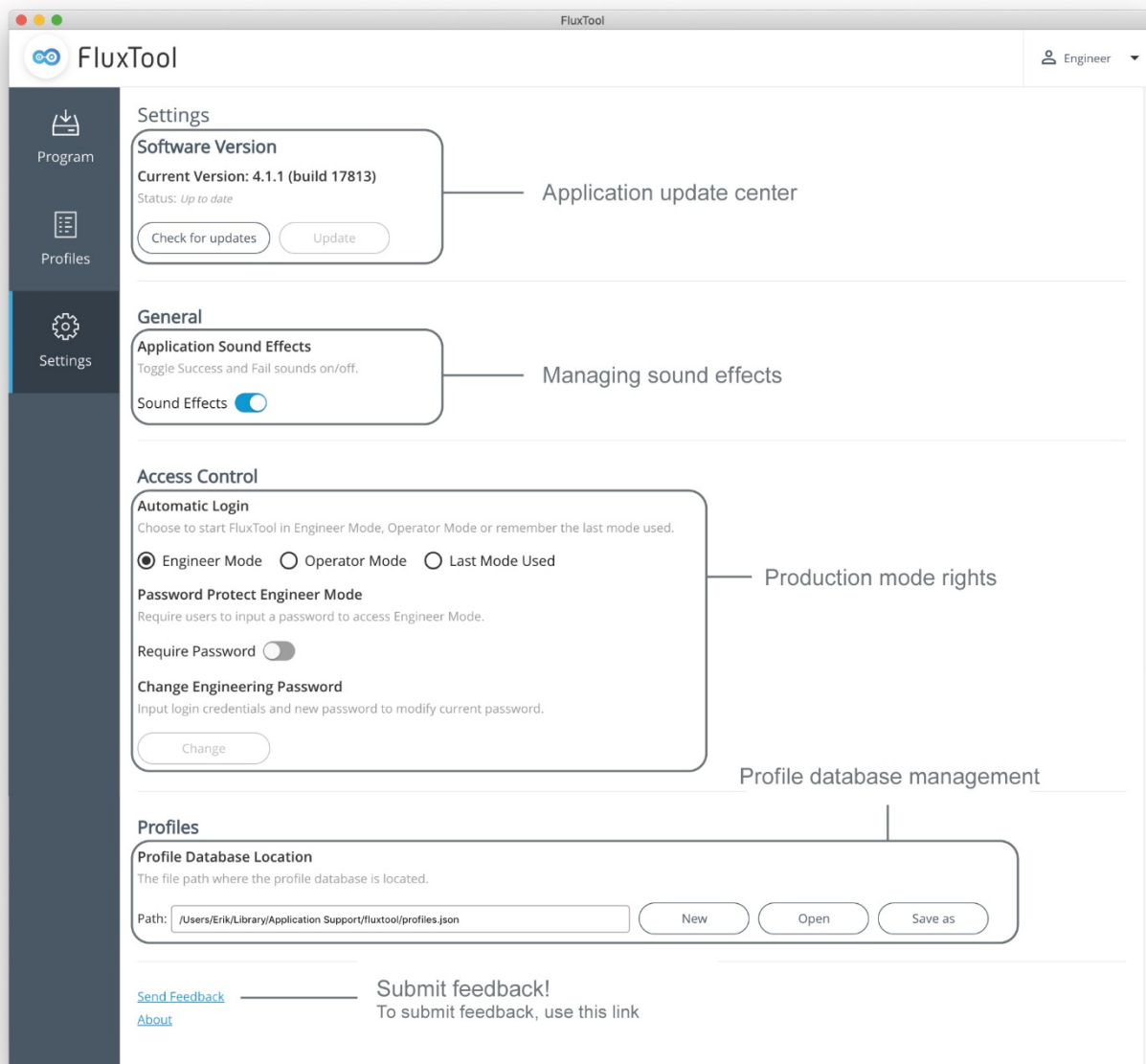
2.2. Profiles tab

This is how the **Profiles tab** looks:



2.3. Settings tab

This is how the **Settings tab** looks:

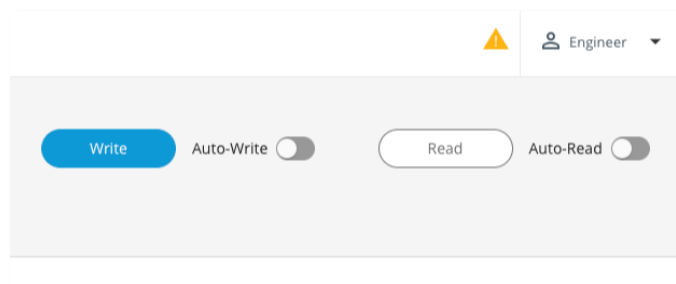


3. Program tab

3.1. How to program a driver (without a profile)

1) Read a driver's parameters

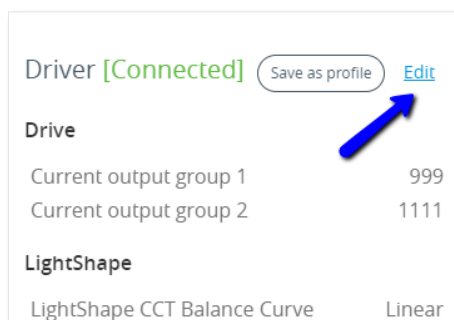
With a driver connected, click **Read** on the Program tab.



2) Enter profile-less programming mode

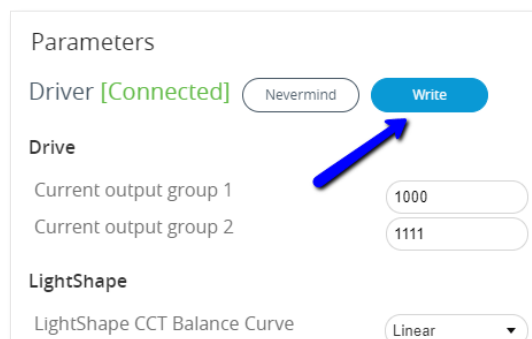
After reading the driver's parameters, click **Edit**.

Please note: You must be logged into *Engineer* mode to directly edit the driver parameters.



3) Edit parameters and write to the driver

Change the desired parameters and click **Write** when finished to program the driver.



3.2. How to write a profile to a driver

1) Select the desired profile

On the **Program** tab, use the Search bar or sort the list of profiles to find the correct one. Click the profile to load its details.

Name ▼	Driver Type ▼	Created ▼
DL560 High Lumen	DUALdrive 560	19 Feb 2019
DL560 Low Lumen	DUALdrive 560	19 Feb 2019

Parameters

DL560 Low Lumen

Drive

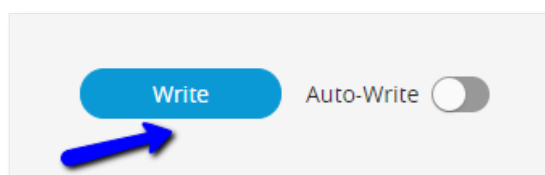
Current output group 1	365
Current output group 2	365

LightShape

LightShape CCT Balance Curve	Linear
------------------------------	--------

2) Write the profile to the driver

With a driver connected, click **Write** (also press spacebar) to program the driver with the selected profile. Alternatively, you can enable Auto-Write so that the driver is automatically programmed once detected.



You'll see a brief notification once programming is complete.

Status:

Success!

DUALdrive 560/L ● Driver Connected ● TOOLbox Connected

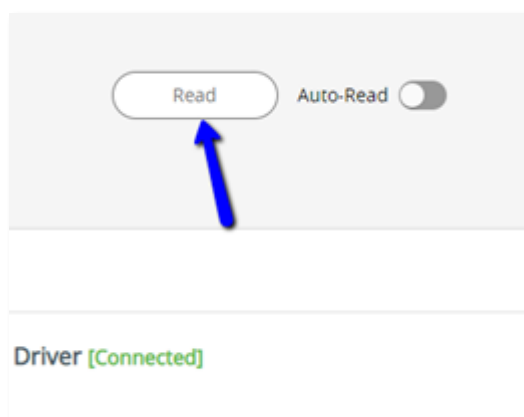
3.3. How to clone a driver (Save as Profile)

Save as Profile is intended to allow a user to easily copy the parameter settings from one driver to another. For instance, if you are servicing a luminaire and want to replace the driver but do not know how it was previously programmed, you can connect the driver, save its settings as a profile, and program a replacement driver with this profile.

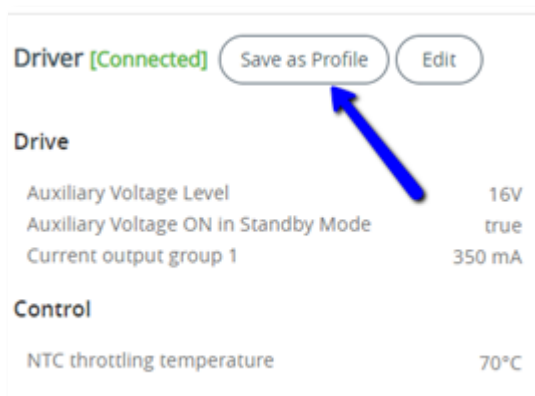
It's important to note that only those parameters that are available through a FluxTool profile are saved to the newly created profile. Also, if you create a profile based on a LightShape enabled driver, you cannot change the LightShape parameters of the newly created profile by design. The newly created profile contains a copy of the LightShape curves, which means the curve data will be saved and can be programmed into another driver. To get started, follow the steps below.

1) Connect a driver and read its parameters

With a driver connected, click **Read** to enable the **Save as Profile** button.



2) Click the Save as Profile button:



3) Give the new profile a name and click Save to save the profile in the database:

Save As Profile Never mind Save

Profile name
EC0568L4-001 Copy

Profile description
Copy of driver for project 001

Drive

Auxiliary Voltage Level 16V

Auxiliary Voltage ON in Standby Mode ☒

Current output group 1 350 mA

Control

NTC throttling temperature 70 °C

Once the profile is saved, return to the Program screen and select it to program another driver with the settings from the first driver.

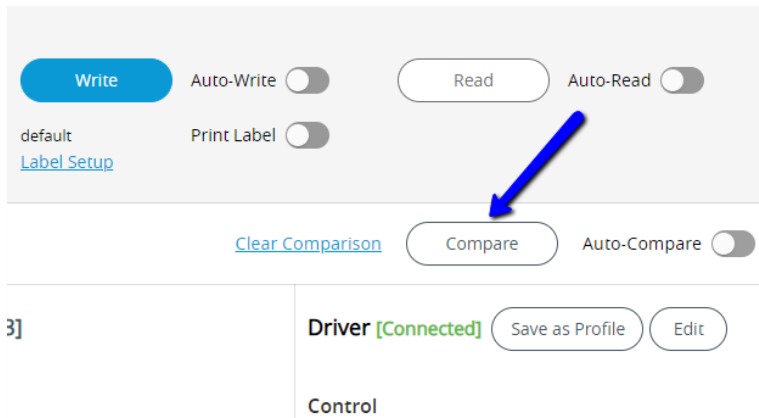
3.4. How to verify driver parameters (Compare)

Compare allows a user to check if the parameters of a connected driver match those of a selected profile. Compare is a useful tool for auditing previously programmed drivers to verify they were programmed correctly. Turn on Auto-Compare to make it even quicker to perform this audit. Compare is also useful to check if a driver was re-programmed by a 3rd party after leaving the factory.

In order to use Compare, a driver must be connected and a compatible profile must be selected.

1) Connect a driver

Connect the driver to verify and click **Compare** to begin the verification process.



2) Observe the results

As the verification process begins, you'll be given immediate feedback on any parameter mismatches. Once complete, a success/fail message will be displayed and, if enabled, a tone with play.

Parameters		Clear Comparison	Compare	Auto-Compare
Profile [DL0560L3]		Driver [Connected] Save as Profile Edit		
Control		Control		
Dimming curve	linear	✓	Dimming curve	linear
Minimum dimming level	0.1 %	✓	Minimum dimming level	0.1 %
NTC throttling temperature	77°C	✓	NTC throttling temperature	77°C
Drive		Drive		
Current output group 1	680 mA	✓	Current output group 1	680 mA
Current output group 2	660 mA	✓	Current output group 2	660 mA
LightShape		LightShape		
LightShape active	true	✓	LightShape active	true
LightShape control strategy	Tunable White	✓	LightShape control strategy	Tunable White
LightShape settings	[Curve Data]	✓	LightShape settings	[Curve Data]
LightShape CCT Balance Curve	Linear	✓	LightShape CCT Balance Curve	Linear
LightShape minimum CCT	3000 K	✓	LightShape minimum CCT	3000 K
LightShape maximum CCT	5000 K	✓	LightShape maximum CCT	5000 K
LightShape luminous flux optimization m...Constant	N/A			
LightShape luminous flux output 1	1000 lm	N/A		
LightShape luminous flux output 2	1000 lm	N/A		
LightShape maximum luminous flux	1000 lm	N/A		
LightShape nominal CCT output 1	3000 K	N/A		
LightShape nominal CCT output 2	5000 K	N/A		

Successful comparison, driver matches profile!

Parameters
[Clear Comparison](#)

Compare

Auto-Compare

Profile [DL0560L3]		Driver [Connected] <div>Save as Profile</div> <div>Edit</div>	
Control		Control	
Dimming curve	linear	✗	Dimming curve
Minimum dimming level	0.1 %	✓	Minimum dimming level
NTC throttling temperature	77°C	✗	NTC throttling temperature
Drive		Drive	
Current output group 1	680 mA	✗	Current output group 1
Current output group 2	660 mA	✗	Current output group 2
LightShape		LightShape	
LightShape active	true	✓	LightShape active
LightShape control strategy	Tunable White	✓	LightShape control strategy
LightShape settings	[Curve Data]	✓	LightShape settings
LightShape CCT Balance Curve	Linear	✓	LightShape CCT Balance Curve
LightShape minimum CCT	3000 K	✓	LightShape minimum CCT
LightShape maximum CCT	5000 K	✓	LightShape maximum CCT
LightShape luminous flux optimization m...	Constant	N/A	
LightShape luminous flux output 1	1000 lm	N/A	
LightShape luminous flux output 2	1000 lm	N/A	
LightShape maximum luminous flux	1000 lm	N/A	
LightShape nominal CCT output 1	3000 K	N/A	
LightShape nominal CCT output 2	5000 K	N/A	

Failed comparison, some driver parameters do not match profile!

Note: there is a +0.2% tolerance when comparing the minimum dimming level parameter. This means:

Control		Control	
Dimming curve	linear	✓	Dimming curve
Minimum dimming level	0.1 %	✓	Minimum dimming level
NTC throttling temperature	77°C	✓	NTC throttling temperature

Pass!

Control		Control	
Dimming curve	linear	✓	Dimming curve
Minimum dimming level	0.1 %	✗	Minimum dimming level
NTC throttling temperature	77°C	✓	NTC throttling temperature

Fail!

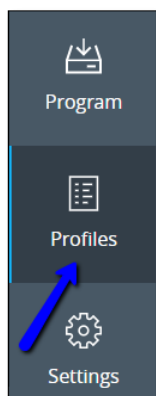
4. Profile tab

4.1. How to create a profile

1) Navigate to the Profiles tab

Click **Profiles** from the left menu.

Please note: You must be logged into *Engineer* mode to access Profiles.



2) Give the profile a name and description

With a driver connected, click **Create New** and give the profile a name and description.

A form for creating a new profile. At the top are buttons: 'Create New' (highlighted with a blue arrow), 'Delete', 'Duplicate', and 'Import'. Below is a table with columns: 'Name', 'Driver Type', and 'Created'. The first row shows 'DL560 High Lumen', 'DUALdrive 560', and '19 Feb 2019'. To the right of the table is a form for the new profile. It has a 'Profile name' field with the text 'DL560 Low Lumen' (a blue arrow points to this field), a 'Nevermind' button, and a 'Save' button. Below the name field is a 'Profile description' field with the text 'For the low lumen project' (a blue arrow points to this field).

3) Save and edit the new profile

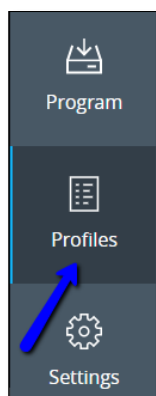
Click **Save** and edit the newly created profile as needed. Click **Save** again to confirm your changes.

A form for saving and editing a profile. It has a 'Profile name' field with the text 'DL560 Low Lumen', a 'Nevermind' button, and a 'Save' button (highlighted with a blue arrow). Below the name field is a 'Profile description' field with the text 'For the low lumen project'. At the bottom, under the heading 'Drive', there are two input fields: 'Current output group 1' with the value '700' and 'Current output group 2' with the value '700'.

4.2 How to delete a profile

1) Navigate to the Profiles tab

Click **Profiles** from the left menu.

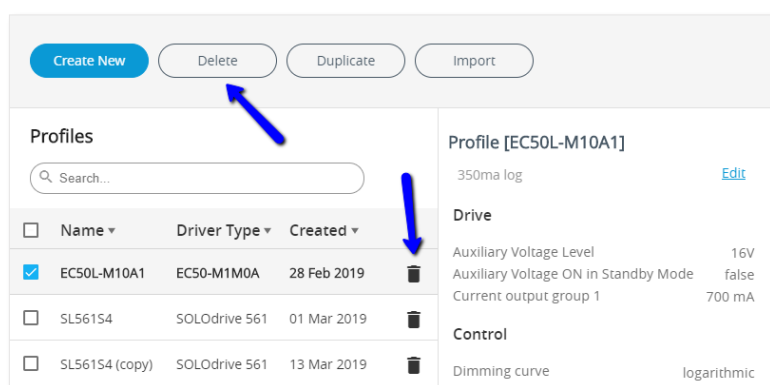


2) Select one or many profiles to delete

Use the Search bar or sort the list of profiles to find the profile(s) to delete.

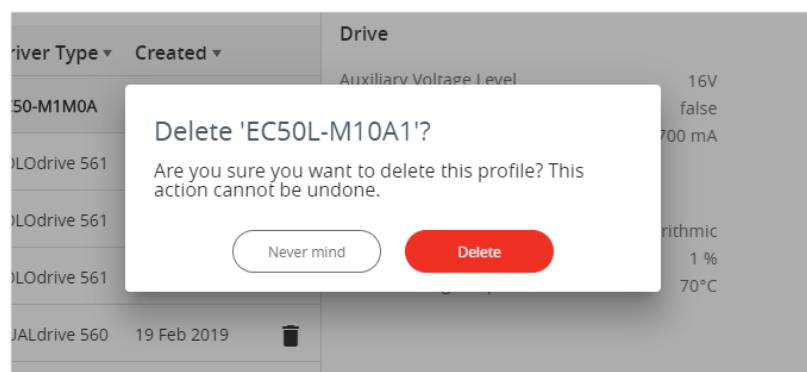
Click the trash can icon next to the profile delete it.

Alternatively, select many profiles using the check boxes and click **Delete**.



3) Confirm your choice

Click **Delete** again to confirm and delete the selected profile(s) or **Never mind** to abort.

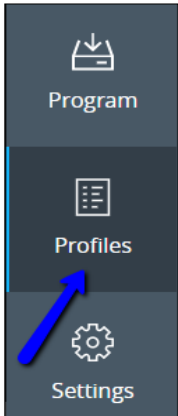


4.3 How to duplicate a profile

1) Navigate to the Profiles tab

Click **Profiles** from the left menu.

Please note: You must be logged into *Engineer* mode to access Profiles.



2) Select a profile to duplicate

Select a profile and click **Duplicate**.

Please note: Duplicating is only allowed with a single profile selected.

3) Rename as needed

The new profile will have a suggested name.

Edit and change the parameters as need.

Click **Save** when done.

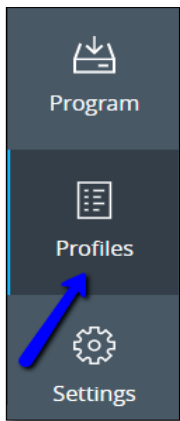
A dialog box titled 'Duplicate Profile'. It has two buttons at the top right: 'Never mind' and 'Save'. The 'Save' button is highlighted with a blue arrow. Below the buttons, there are two input fields. The first is labeled 'Profile name' and contains the text 'EC50L-M10A1 (copy)' with a blue arrow pointing to it. The second is labeled 'Profile description' and contains the text '350ma log'.

4.4 How to import previously created profiles

1) Navigate to the Profiles tab

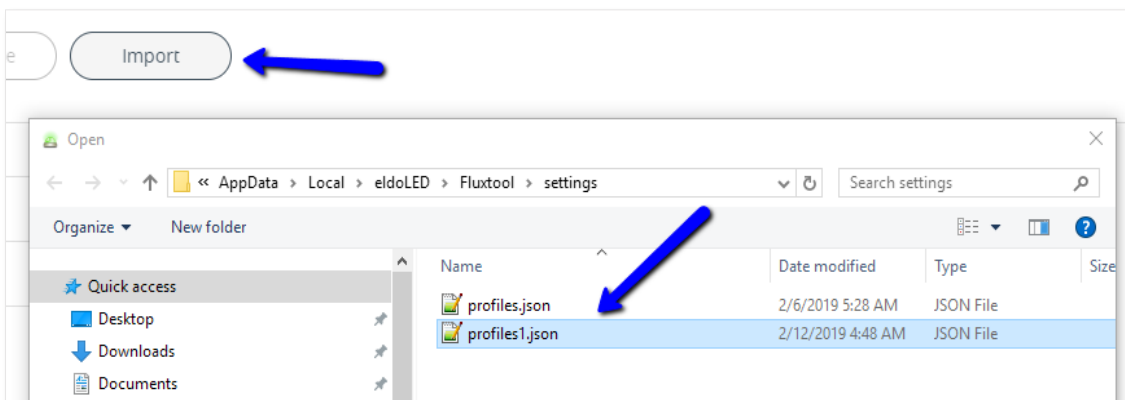
Click **Profiles** from the left menu.

Please note: You must be logged into *Engineer* mode to access Profiles.



2) Locate the database to import.

Click **Import** and use the file browser popup to select the desired database file.

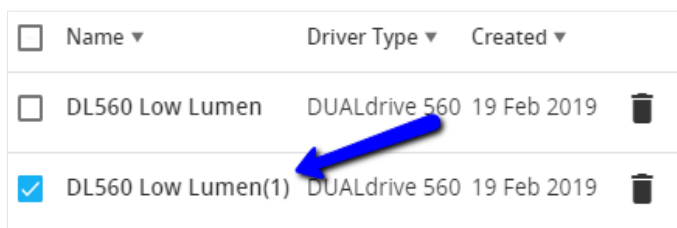


3) Import and rename as needed

Once you've located the desired database, click **Open** at the bottom of the file browser.

If any profiles from the imported database share the same name as an existing profile, they will automatically be renamed.

Select the profile and click **Edit** to give the profile a new name.



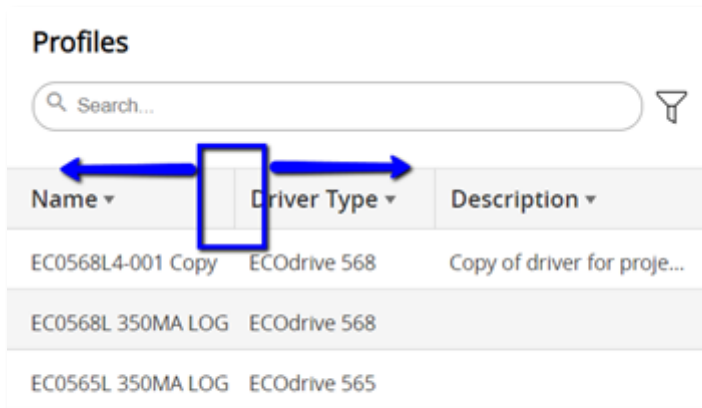
Please note: These profiles will be added (appended) to your current database.

4.5 How to modify the profile list view

It is possible to customize the column size and which columns are shown for the profile list on both the Program tab and Profiles tab (independently). The layout will be maintained through application restarts. To do so, follow the process below.

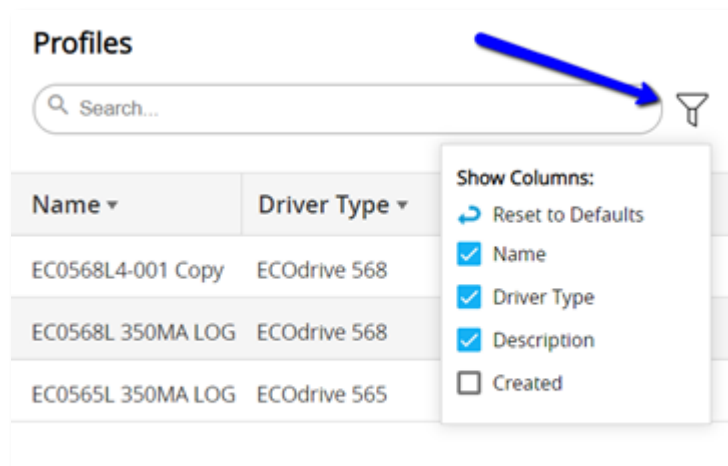
1) Resize the column width

Hover over the divider between columns until the cursor changes. Click and drag left or right to resize.



2) Select which columns are visible

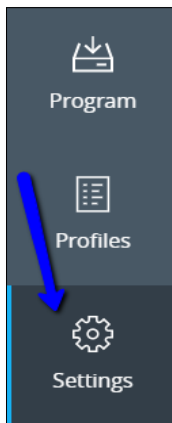
Click the Filter icon next to the search bar to choose which columns are visible.



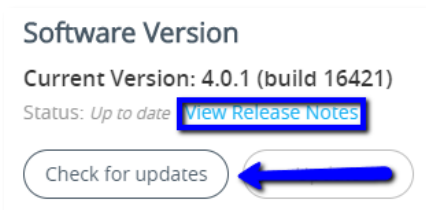
5. Settings Tab

5.1 How to check for and install updates

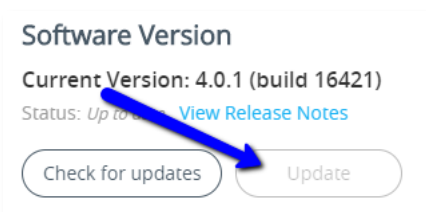
- 1) **Navigate to the Settings tab.**
Click **Settings** from the left menu.



- 2) **Check for updates and view release notes**
Click **Check for updates** to perform a manual check.
If there's an update available, you'll be notified via the status field and an icon.
You'll also be able to view release notes by clicking the appropriate link.



- 3) **Download and install the update**
Click **Update** to download and install the update.
FluxTool will automatically restart as part of the update process.

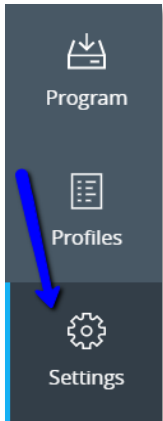


5.2 How to configure access control

1) Navigate to the settings tab

Click **Settings** from the left menu.

Please note: You must be logged into *Engineer* mode to make changes to access control.



2) Modify access control settings

Change the settings as needed.

By default, there is no password required to enter *Engineer* mode.

If you elect to toggle **Require Password** and have not yet created one, you'll be prompted to do so.

Also, you may change the *Engineer* mode password by clicking **Change**.

Access Control

Automatic Login
Choose to start FluxTool in Engineer Mode, Operator Mode or remember the last mode used.

☒ Engineer Mode ☐ Operator Mode ☐ Last Mode Used

Password Protect Engineer Mode
Require users to input a password to access Engineer Mode.

Require Password ☐

Change Engineering Password
Input login credentials and new password to modify current password.

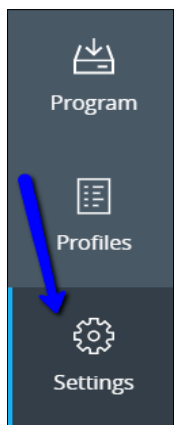
Change

Note: To recover a lost or forgotten password, refer to the supplemental material: **How to reset your password**.

5.3 How to manage the profile database

1) Navigate to the Settings tab

Click **Settings** from the left menu.



2) Manage the database connection

Under the Profiles section, you have three options:

- a) New – click to select a location to create a brand new (also empty) profile database.
- b) Open – click to load an existing profile database.
- c) Save as – click to save a copy of your current profile database and change its path.

Profiles

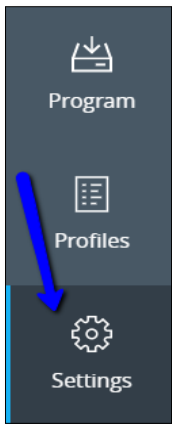
Profile Database Location
The file path where the profile database is located.

Path:

5.4 How to submit feedback

1) Navigate to the Settings tab

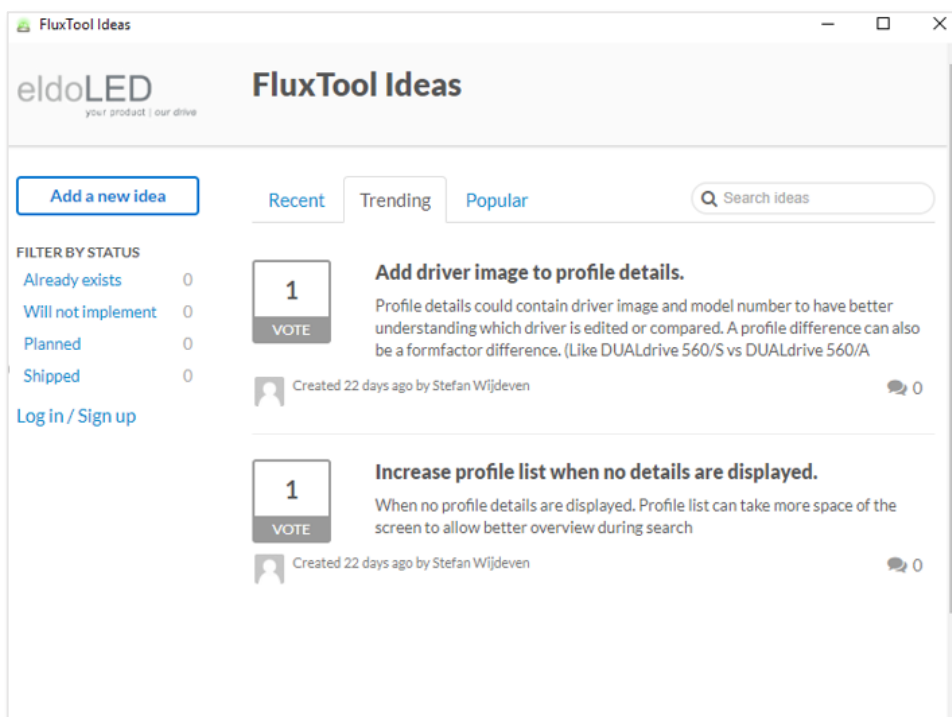
Click **Settings** from the left menu.



2) Enter your ideas and suggestions

Click **Send Feedback** at the bottom of the page. This will bring up the FluxTool Ideas page.

You can browse existing suggestions, create new ones, vote and much more. If your idea gets picked up for development, you'll even be notified!



6. Label printing

6.1 How to setup the printer

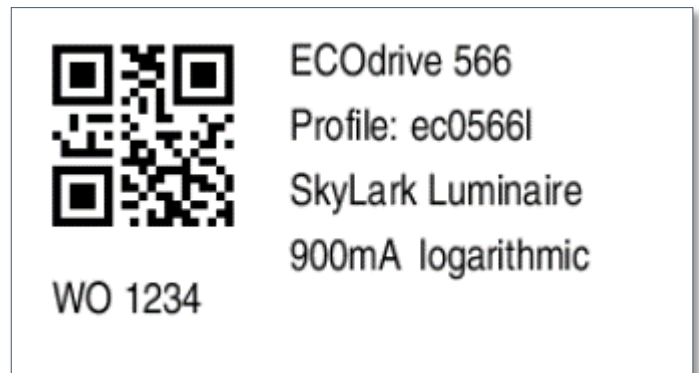
1) Printer Requirements

FluxTool currently works with USB-connected Zebra printers. These devices must be set as the default printer in the target operating system.

2) Create a label template

Here's an example ZPL template and the resulting label:

```
^^XA
^^PW290 ^^FX Print width in dots
~SD20 ^^FX media darkness 0-30
^^CF0,25 ^^FX default font type and size
^^XZ
^^XA
^^FO10,20,20^^BQ,2,4
^^FDMM, WO 1234^^FS
^^FO120,30^^FDECOdrive 566^^FS
^^FO120,60^^FDPProfile: ec0566l^^FS
^^FO120,90^^FDSkyLark Luminaire^^FS
^^FO120,120^^FD900mA^^FS
^^FO180,120^^FDlogarithmic^^FS
^^FO10,140^^FDWO 1234^^FS
^^XZ
```



For detailed information on ZPL, go to the Zebra Support and Download section, which has extensive product documentation available.

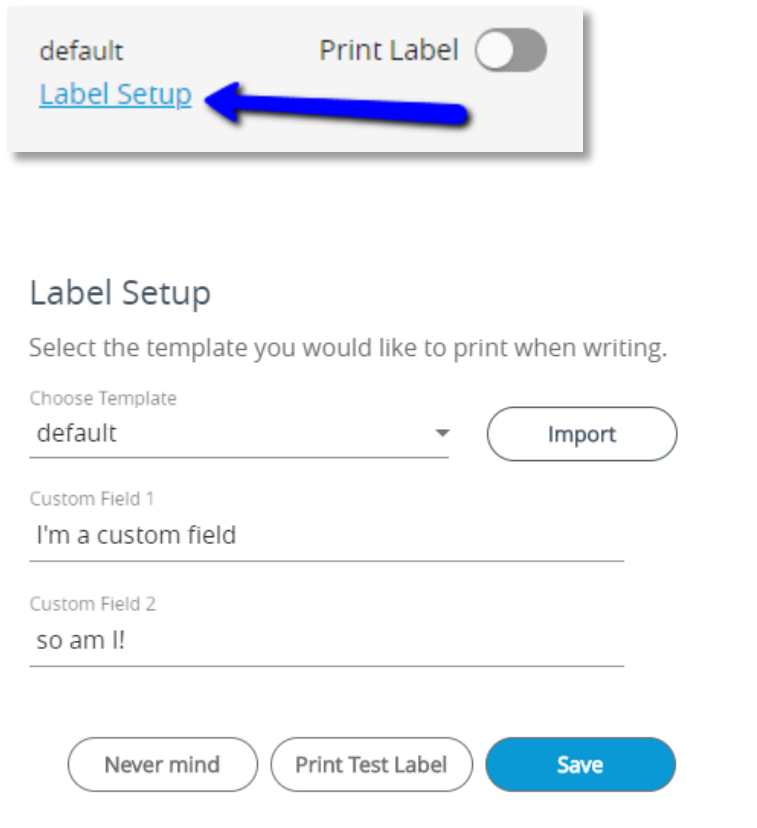
While creating a ZPL label template is outside the scope of this document, the following resource is useful for quickly validating your label design:

Online label renderer: <http://labelary.com/viewer.html>

6.2 How to configure label printing

1) Setup the label

On the **Program** tab, click **Label Setup** to bring up the Label Setup dialog:



Within the Label Setup dialog, select the template to use. You can add new templates by clicking Import and navigating to the label file you'd like add. Once added the label file will be copied to the label template folder and available for future use.

Note: You can also add templates to the label directory using Windows explorer or Mac Finder. The default paths are:

- Windows: C:\Program Files\FluxTool\resources\assets\labels
- Mac: /Users/<user name>/Library/Application Support/eldoLED/Fluxtool/labels/zpl

Enter values for Custom Field 1 and 2 (optional). Click **Save** when done.

2) Turn on/off label printing

After selecting an available template, label printing will be turned on by default. To disable label printing, click the toggle next to **Print Label**.



6.3 How to design a label (for FluxTool)

1) Add profile parameters to the label

The following profile parameters are available for printing:

Profile Parameter Name	Label Variable Name	DMX	LEDcode, DALI, 0-10V
Switch: alternative show index	alt_show_index	Yes	No
Current output group 1	current_cs1	Yes	Yes
Current output group 2	current_cs2	Yes	Yes
Current output group 3	current_cs3	Yes	Yes
Current output group 4	current_cs4	Yes	Yes
Daisy-chain cluster mode: slave count	daisy_chain_cluster_slave_count	Yes	No
Daisy-chain mode	daisy_chain_mode	Yes	No
Dimming curve	dimming_curve	Yes	Yes
Fail mode	dmx_failure_behaviour	Yes	Yes
Network resolution	dmx_network_resolution	Yes	Yes
Network start address	dmx_start_address	Yes	Yes
DMX termination	dmx_termination	Yes	No
Switch mode	external_input_mode	Yes	No
Group 1 channel mapping	group_1_mapping	Yes	No
Group 1 scaling	group_1_scaling	Yes	No
Group 2 channel mapping	group_2_mapping	Yes	No
Group 2 scaling	group_2_scaling	Yes	No
Group 3 channel mapping	group_3_mapping	Yes	No
Group 3 scaling	group_3_scaling	Yes	No
Group 4 channel mapping	group_4_mapping	Yes	No
Group 4 scaling	group_4_scaling	Yes	No
Network channel count	group_count	Yes	No
Interpolation	interpolation	Yes	Yes
LightShape active	light_shaping_active	Yes	Yes
LightShape CCT Balance Curve	light_shaping_cct_balance_curve	Yes	Yes
LightShape maximum CCT	light_shaping_cct_max	Yes	Yes
LightShape minimum CCT	light_shaping_cct_min	Yes	Yes
LightShape nominal CCT output 1	light_shaping_cct_output_1	Yes	Yes
LightShape nominal CCT output 2	light_shaping_cct_output_2	Yes	Yes
LightShape control strategy	light_shaping_control_strategy	Yes	Yes
LightShape luminous flux optimization method	light_shaping_flux_optimization_method	Yes	Yes
LightShape luminous flux output 1	light_shaping_flux_output_1	Yes	Yes
LightShape luminous flux output 2	light_shaping_flux_output_2	Yes	Yes
LightShape Forward Voltage 1	light_shaping_forward_voltage_1	Yes	Yes
LightShape Forward Voltage 2	light_shaping_forward_voltage_2	Yes	Yes
LightShape maximum luminous flux	light_shaping_maximum_flux	Yes	Yes
Auxiliary Voltage ON in Standby Mode	mid_aux_on_in_standby_mode	Yes	Yes
Auxiliary Voltage Level	mid_aux_voltage_level	Yes	Yes
Minimum dimming level	minimum_level	Yes	Yes

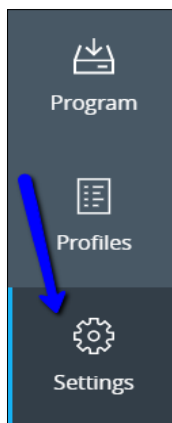
Profile Parameter Name	Label Variable Name	DMX	LEDcode, DALI, 0-10V
NTC throttling temperature	ntc_throttling_temperature	Yes	Yes
Power scaling	power_scaling	Yes	Yes
Scene 1 output 1	scene_1_output_1	Yes	Yes
Scene 1 output 2	scene_1_output_2	Yes	Yes
Scene 2 output 1	scene_2_output_1	Yes	Yes
Scene 2 output 2	scene_2_output_2	Yes	Yes
Show index	show_index	Yes	No
Show running	show_running	Yes	No
Startup mode	startup_behaviour	Yes	Yes

Also, you may print the programming date in the format “YYYY/MM/DD” using the variable name: date in your label. Additionally, you may add up to two custom fields using the label setup dialog.

7. How to enable sound effects

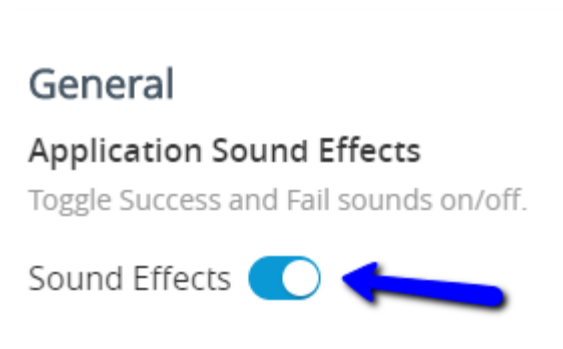
1) Navigate to the Settings tab

Click **Settings** from the left menu.



2) Turn on Sound Effects

Turn on/off Sound Effects using the toggle.



Europe, Rest of World

eldoLED B.V.
Science Park Eindhoven 5125
5692 ED Son
The Netherlands

www.eldoled.com

North America

eldoLED America
One Lithonia Way
Conyers, GA 30012
USA