Arkalumen APT-CV2-CVO Linear LED Controller User Guide

Contents

Arkalumen APT-CV2-CVO Linear LED Controller

Product Information

Product Name	Arkalumen APT Programmer
Model Number	APT-CV2-VC-LN-CVO
User Guide	APT-CC-VC

Product Usage Instructions

Connecting the APT Programmer

1. Connect the APT Programmer to the PC and controller as shown in Figure 1.

Installing the APT Programmer Interface

1. Click on the provided link to download the APT Programmer Interface folder.
2. Open the folder “APT Program.mer Interface” on a Windows-based PC, setup.exe.
3. Launch setup.exe to install the APT Programmer Interface. The APT Programmer Interface shortcut will be added to the Start Menu.

Running the APT Programmer Interface

1. Launch the APT Programmer Interface software by selecting the application, APT Programmer Interface, from the Start Menu. The Programmer Connect window (shown in Figure 2) will open.
2. Select the COM port to which the APT Programmer is connected from the Port drop-down menu. If a COM port is not visible, click the button until the correct port is visible.
3. Click “Connect Controller” to establish a connection. Once connected, the APT Programmer Interface window (shown in Figure 3) will open.

Using the Programmer Interface Window

Note: Clicking “No” will discard all unsaved changes.

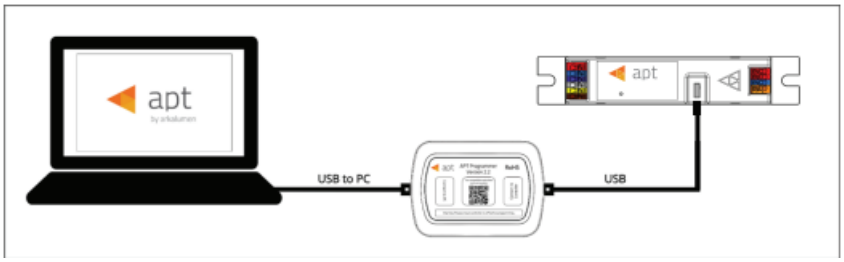
- Displays the connected APT Controller.
- Navigate through settings quickly by clicking on the tabs.
- Open, pressing Ctrl+O or selecting File > Open from the menu.
- Clicking Save, pressing Ctrl+S or selecting File > Save as from the menu.
- Click “Program” to program the controller.
- The progress bar displays the status of the current task.
- Displays “Programmer Ready” if the APT Programmer Interface has successfully connected to the APT Programmer. If no connection has been established, it will read “Programmer Not Connected”.
- Displays the currently connected APT Controller and its hardware version. If no connected APT controller is found, it will read “Controller Not Connected”.

Basic Tab
Click “Retrieve Controller Configuration” to view the currently programmed configurations of the connected controller. A separate window will open with the controller’s configuration (shown in Figure 6).

Click “Use These Configurations” to import the controller’s current configuration into the APT Programmer Interface.

Connecting the APT Programmer

1. Connect the APT Programmer to the PC and controller as shown in Figure 1.



Using the APT Programmer

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   button until the correct port is visible.
3. Click Connect Controller to establish a connection. Once connected, the APT Programmer Interface window (shown in Figure 3) will open.

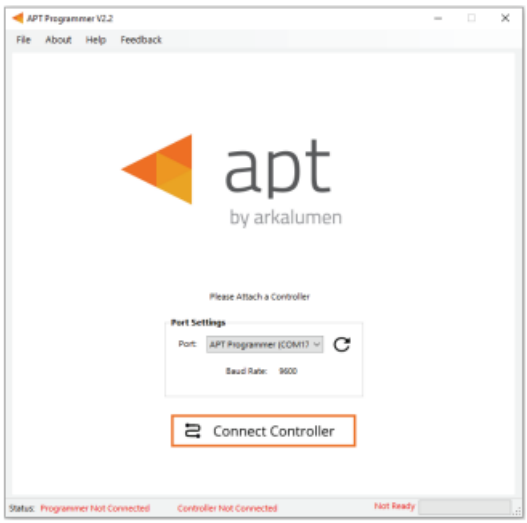
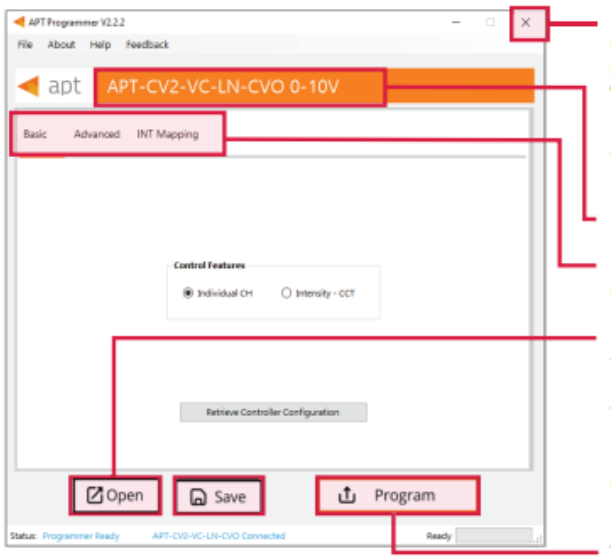


Figure 2: Programmer Connect window

Note: Once connected, if the APT Programmer is not displayed in the port list, please run the CDM212364_Setup file sent with the APT Programmer software to install the drivers.

Using the Programmer Interface Window



Exit the APT Programmer Interface by either clicking ×, pressing Ctrl+Q or selecting File > Exit. This will open a window with the option to save the

Note: Clicking No will discard all unsaved Displays the connected APT Controller.

- Navigate through settings quickly by clicking on the tabs.
- Open a previously saved configuration file (arkc) by either clicking.
- Open, pressing Ctrl+O or selecting File > Open from the menu.
- clicking Save, pressing Ctrl+S or selecting File > Save as from the menu.
- click Program to program the controller.

Figure 4: Programmer Interface window – Status Bar at bottom of window of Fig 3

Displays Programmer Ready if the APT Programmer Interface has successfully connected to the APT Programmer. If no connection has been established, it will read Programmer Not Connected.
Displays the currently connected APT Controller and its hardware version. If no connected APT controller is found, it will read Controller Not Connected.

The Ready field in the Status Bar displays

- Ready
- Not Ready
- Successfully Programmed
- Retrieve Successful

- Wrong Controller Connected
- No Controller Identified

Basic Tab

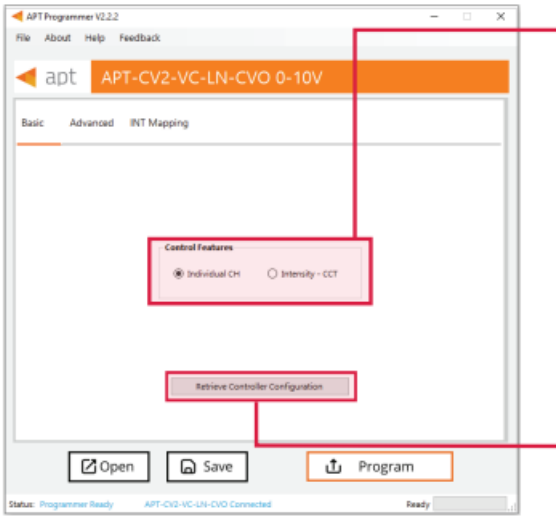


Figure 5: Programmer Interface window

Click the radio button to enable a control feature.

- **Individual CH** enables output intensity control (brightness) for each channel.
- **Intensity-CCT** enables intensity control on COM1 port and calibrated correlated color temperature control (warm or cool light) on COM2 port of the APT controller.

Click Retrieve Controller Configuration to view the currently programmed configurations of the connected controller. A separate will open with the controller's configuration (shown in Figure 6).

Basic tab

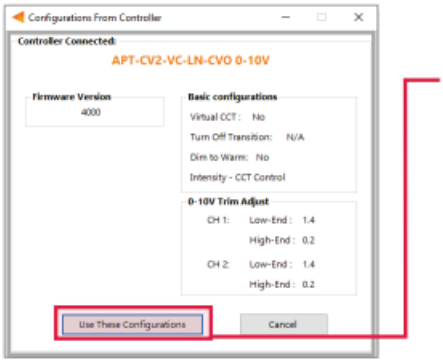


Figure 6: Configurations from Controller window

Click Use These Configurations to import the controller's current configuration into the APT Programmer Interface.
Note: All APT Programmer Interface settings will be changed to the controller's current configuration.

Advanced Tab

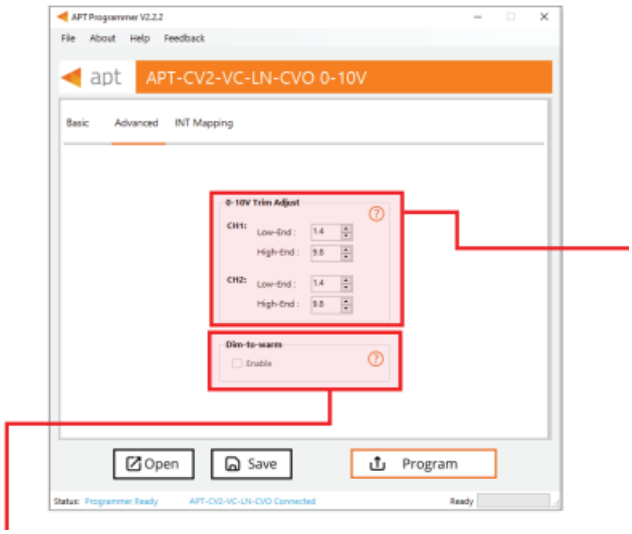


Figure 7: Programmer Interface window – Advanced tab

0-10V Trim Adjust
Enter the Low End and High End 0-10V trim values to designate ranges of input voltages to the minimum and maximum CCT and intensity outputs.

Enabling Dim-to-Warm
Dim-to-Warm feature is only available when Intensity-CCT is selected as the control feature.

1. Click the box to enable Dim-to-Warm. When dimming LEDs, the calibrated correlated color temperature (CCT) does not change. The Dim-to-Warm feature imitates the effect of halogen lamps, which get warmer when dimmed.
   Note: Use of a 2 channel is required.
2. Go to CCT Mapping Tab to upload Dim-to-Warm transition table between cool and warm light.

CCT Ranges Tab

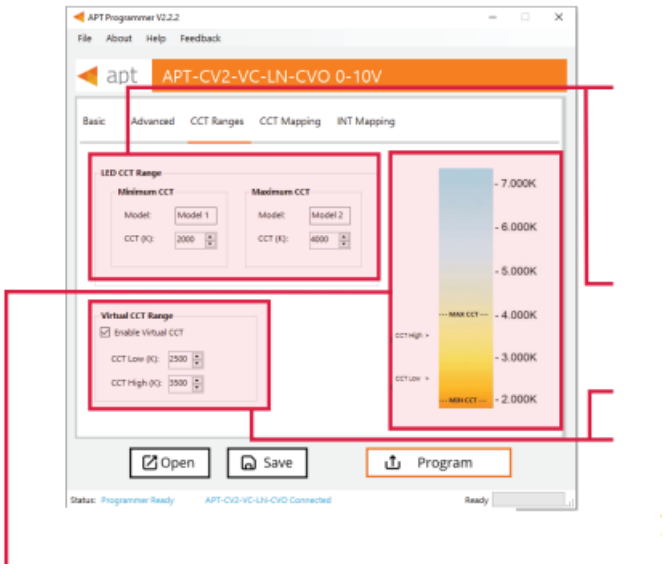


Figure 8: Programmer Interface window – CCT Ranges tab

The selection will be shown as CCT Low and CCT High in the column on the right-hand side of the Programmer

Interface window.

Note: If enabled, the Virtual CCT Range takes precedence over the LED CCT Range.

Setting a virtual (custom) CCT range

1. Enter the LED CCT Range using the Minimum CCT and Maximum CCT values supported by the connected LED module.
   Note: The current settings will be shown as
2. Enter the LED Model numbers associated with the minimum and maximum CCT to add further information for the generated report.
3. Click the box to enable Virtual CCT.
4. Enter CCT low and CCT high values.
   Note: CCT low must be greater than or equal to Minimum CCT, while CCT high must be less than or equal to Maximum CCT

CCT Mapping Tab

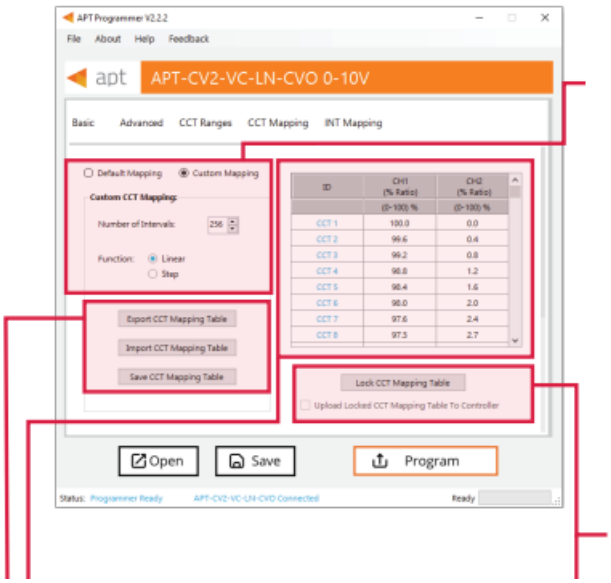


Figure 9: Programmer Interface window – CCT Mapping tab

Displayed in the table, each CCT value is mapped to a percentage ratio for the particular channel ranging from minimum (0%) to maximum (100%). Default mapping evenly spreads out 256 values along a linear curve in which CH1 increases from 0% to 100% and CH2 decreases from 100% to 0%. Click the box to enable Default Mapping. Enable Import, Export, or Save of the CCT Mapping Table by selecting button. Detailed steps on page 7.

Uploading CCT Custom Mapping

1. Select Intensity-CCT control in the Basic Tab.
   Click the Custom Mapping button in the CCT Mapping tab.
2. Enter the number of CCT Intervals, ranging from 2 to 256, CH1/CH2 percentage ratios will evenly distribute over the new CCT.
3. Select either Linear or Step function. Linear will create a CCT mapping with linear transitions between each interval point. Step will create a CCT mapping with step transitions between each interval point.

4. Add the values into the table to enter a percentage CCT ratio for either CH1 or CH2.

Note: Reselecting Default Mapping will open a window with option to save current custom mappings.

- Click Lock CCT Mapping Table to prevent changes from being made to the mapping table, this will also update the graph (shown in Figure 11).
- **Tip**: Scroll to the bottom of the window to see the graph (Figure 11) of the current mapping configuration.
- Click the Upload Locked CCT Mapping To Controller box to upload the mapping table when clicking Program.
- Click Unlock CCT Mapping Table, when the mapping table is locked, to make changes to the table.

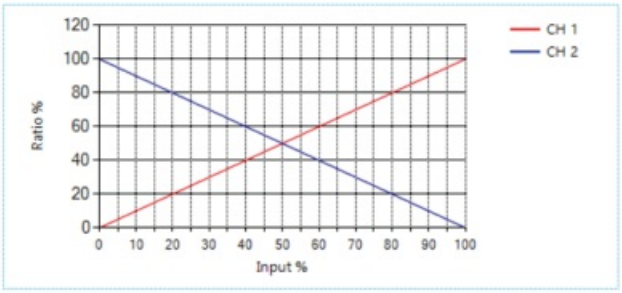


Figure 10: CCT mapping graph

Using Excel to Customize the mapping table

1. Click Export Mapping Table to generate a spreadsheet containing the mapping table that is currently open.
2. Modify the mapping table directly in the spreadsheet, make sure all editable cells contain a value.
3. Save the spreadsheet (.xlsx).

Saving the mapping table

1. Click Save Mapping Table to save the current mapping table.
2. Find a save location for the generated spreadsheet file (.xlsx) containing the mapping table that is currently open.
3. Name and save the file to the desired location.

Importing a previously saved mapping table

1. Click Import Mapping Table to open a previously saved mapping table in the APT Programmer Interface.
2. Select a previously saved mapping table spreadsheet file (.xslx) in the file browser.
3. Click Open in the file browser, to import the file. If the spreadsheet is formatted correctly, it will be successfully imported otherwise an error message will be displayed and the file will not be imported.

INT Mapping Tab

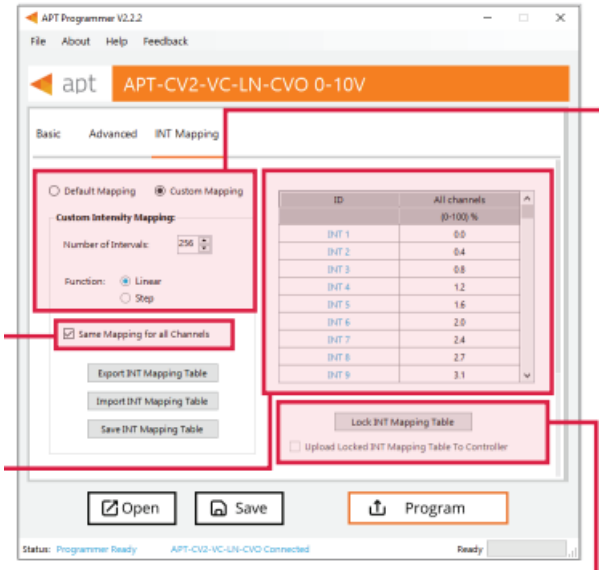


Figure 11: Programmer Interface Window – INT Mapping Tab

Displayed in the table, each INT value is mapped to a percentage ratio for the particular channel ranging from minimum (0%) to maximum (100%). Default mapping evenly spreads out 256 values along a linear curve in which both CH1 and CH2 increase from 0% to 100%. Click the box to enable Default Mapping.

ID	CH1 (% Ratio)	CH2 (% Ratio)
Max Cur	(0-100) %	(0-100) %
INT 1	0.0	0.0
INT 2	0.4	0.4
INT 3	0.8	0.8
INT 4	1.2	1.2
INT 5	1.6	1.6
INT 6	2.0	2.0
INT 7	2.4	2.4
INT 8	2.7	2.7

Figure 12: INT Mapping Tab – Same Mapping for all Channels Unchecked

Figure 12 displays the INT Mapping table when the checkbox Same Mapping for all Channels is unchecked, allowing INT mapping for each Channel individually.

Uploading Intensity Mapping for Individual Channel control

1. Select Individual Channel control in the Basic Tab.
2. Click the Custom Mapping button in the INT Mapping tab.
3. Enter the number of Intensity intervals, ranging from 2 to 256.
4. Select either Linear or Step function. Linear will create a INT mapping with linear transitions between each interval point. Step will create an INT mapping with step transitions between each interval point.

Tip: Click the Same Mapping for All Channels box to make the INT mappings identical for all channels CH1/CH2.

5. Add the values into the table to enter a percentage ratio for either CH1 or CH2.
   Note: Reselecting Default Mapping will open a window with the option to save the current custom mappings.

- Click Lock INT Mapping Table to prevent changes from being made to the mapping table.
- Click the Upload Locked INT Mapping Table To Controller box to upload the mapping table when clicking Program.
- Click Unlock INT Mapping Table, when the mapping table is locked, to make changes to the table.

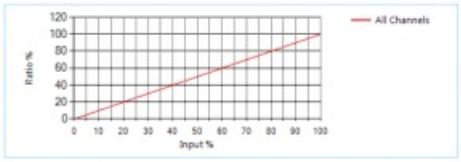


Figure 13: INT Mapping graph for all channels

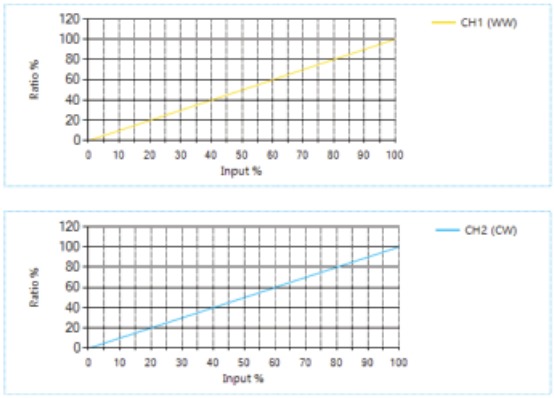


Figure 14: INT Mapping graphs for each channel

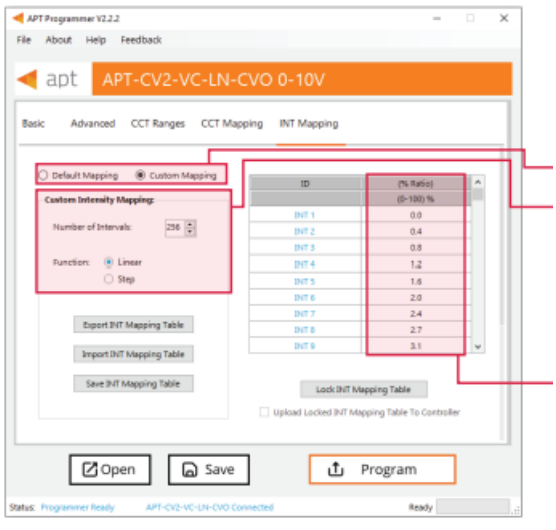


Figure 15: INT Mapping Tab when Intensity-CCT is selected as the control feature.

Uploading INT Mapping for the intensity of CCT

1. Select Intensity-CCT control in the Basic Tab.
2. Click the Custom Mapping button in the INT Mapping tab.
3. Enter the number of intensity intervals, ranging from 2 to 256.
4. Select either Linear or Step function. Linear will create an INT mapping with linear transitions between each interval point. Step will create an INT mapping with step transitions between each interval point.
5. Add the values into the table to enter an intensity ratio for the CCT.
   Note: Reselecting Default Mapping will open a window with the option to save the current custom mappings.

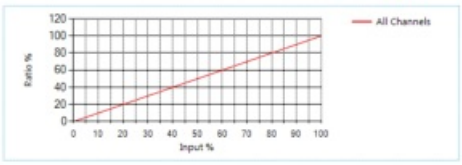


Figure 16: INT Mapping graph for the Intensity of the CCT

Using Excel to Customize the INT mapping table

1. Click Export INT Mapping Table to generate a spreadsheet containing the mapping table that is currently open.
2. Modify the mapping table directly in the spreadsheet without changing the formatting.
3. Save the spreadsheet (.xslx).

Saving the INT mapping table

1. Click Save INT Mapping Table to save the current mapping table.
2. Find a save location for the generated spreadsheet file (.xslx) containing the mapping table that is currently open.
3. Name and save the file in the desired location.

Importing a previously saved INT mapping table

1. Click Import INT Mapping Table to open a previously saved mapping table in the APT Programmer Interface.
2. Select a previously saved mapping table spreadsheet file (.xslx) in the file browser.
3. Click Open in the file browser to import the file; if the spreadsheet is formatted correctly, it will be successfully imported.

Tip: Scroll to the bottom of the window to see graphs (shown in Figures 13, 14, and 16) of the current INT mapping configuration.

Generating Labels

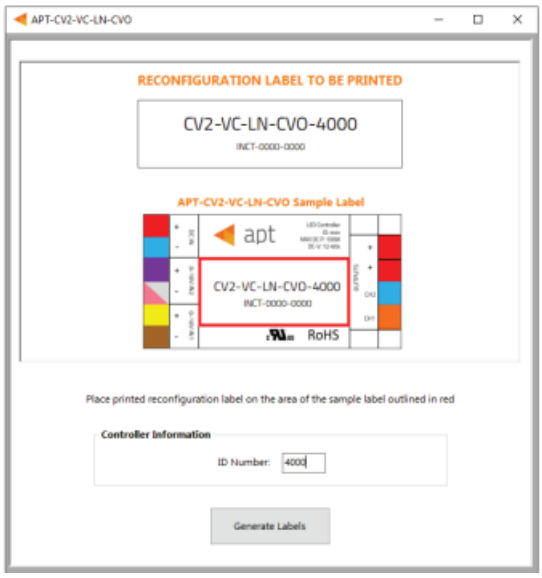


Figure 17: Label Generation window

1. Select File > Generate Label or press Ctrl +L to open the Label Generation window (shown in Figure 17).
2. Input the 4-digit ID Number written on the original label (shown in Figure 17). The ID Number indicates the production build of the APT Controller.
3. Click Generate Labels.
4. Input the starting and finishing rows and columns that will fit on the back or front labels. The selected range is highlighted in blue (Figure 18).
5. Select Print Full Range to print the whole page.
6. Click Generate Labels, the default web browser will open and display a preview of the print.

   Note: Arkalumen recommends using Google Chrome and setting margins to None in the printing options.

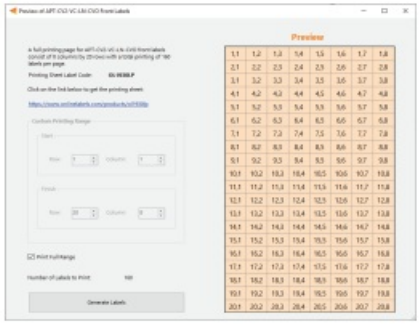


Figure 18: Label generation print preview window

To obtain blank labels, contact Arkalumen or visit [onlinelabels.com](https://www.onlinelabels.com/products/ol1930lp)

Labels: https://www.onlinelabels.com/products/ol1930lp

When ordering, Arkalumen recommends selecting Weatherproof Polyester labels in a material suited for your printer.

Generating a Report

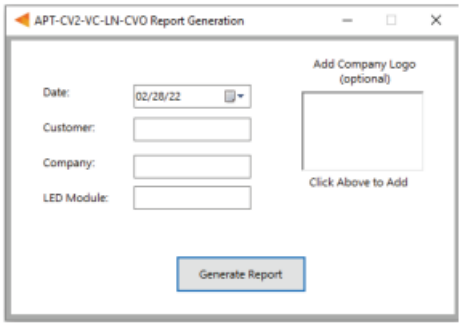


Figure 19: Report Generation window

Figure 20: Example of the first page of a generated report

1. Select File > Generate Report, or press Ctrl+R, to open the Report Generation Window (shown in Figure 19).
2. Enter the Date, Customer, Company, and Light Engine part number to customize the report.
3. Click on the white box under Add Company Logo to include a logo in the report (optional).
4. Select the desired logo (.jpg) in the file browser and click Open (optional).
5. Click Generate Report, the default web browser will open and display a preview of the print (shown in Figures 20 & 21).

Note: Arkalumen recommends using Google Chrome and setting margins to None in the printing options.

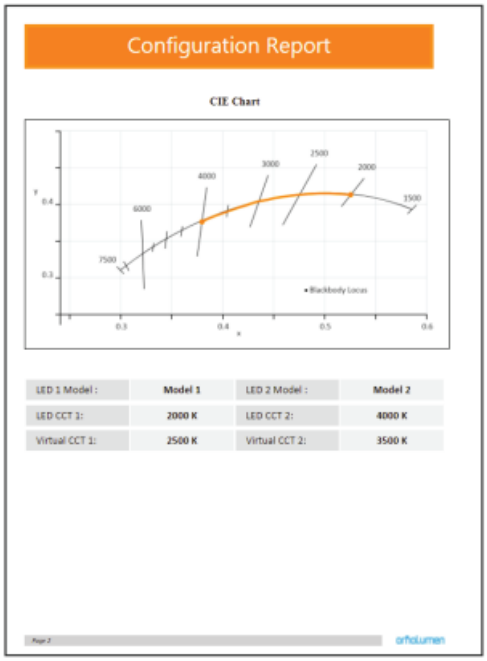


Figure 21: Example of the second page of a generated report

If at any time you have comments or suggestions regarding the APT Programmer or APT Controller, please click on the Feedback tab in the top menu bar to submit information to our team. We appreciate all feedback and are committed to continuously improving our products. For immediate support, please contact the Arkalumen team at 1-877-856-5533 or email **support@arkalumen.com**

Arkalumen designs and manufactures intelligent LED controllers and custom LED modules for light years, Arkalumen history of driving innovation within the lighting industry and are proud to push the limits of what lighting Proudly engineered and assembled in North America.
Visit **Arkalumen.com** to see our full product portfolio

- **Arkalumen.com**
- **Rev**: 1
- **Edited**: February 28th 2022

Documents / Resources

	**Arkalumen APT-CV2-CVO Linear LED Controller** [pdf] User Guide APT-CV2-CVO Linear LED Controller, APT-CV2-CVO, Linear LED Controller, LED Controller, Controller

References

- **Home - Arkalumen | LED Modules and Controllers**
- **Blank & Custom Labels | OnlineLabels®**
- **1" x 0.5" Labels - Weatherproof Polyester Laser - OL1930LP**