



# LUMA

Multi-Channel Vacuum  
Ultraviolet Detector

## User's Guide for OpenLab CDS

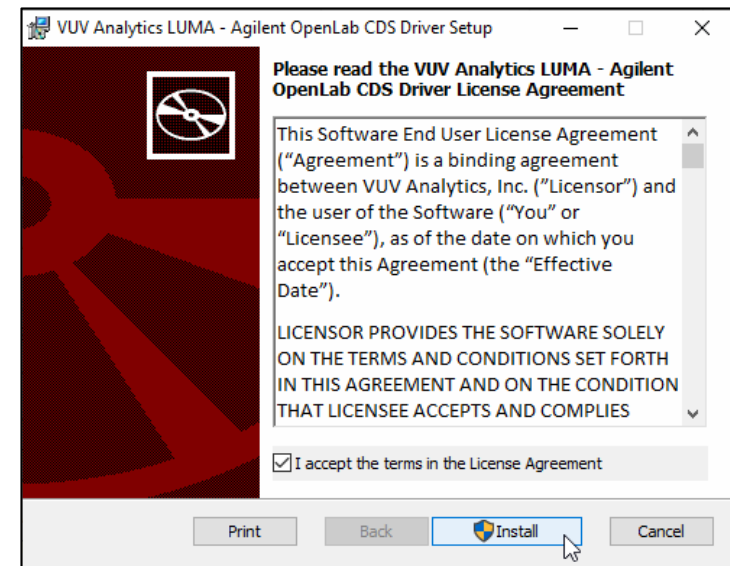
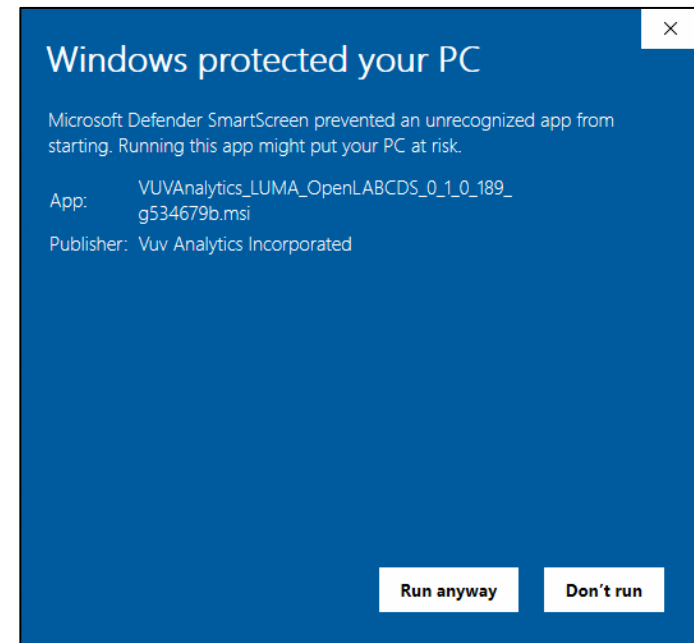
Revision 2

*Sensitive. Selective. Simple.*



## Driver Installation

1. Log on to PC using a local Administrator account.
2. Close OpenLab CDS, if running.
3. Open Windows Explorer to the download location for the LUMA driver.
4. Run the installer labeled *VUVAnalytics\_LUMA\_OpenLabCDS\_rev.msi* , where *rev* will be the driver version.
5. If a User Account Control dialog appears, click **Yes** to continue
6. If a security dialog appears, click **More Info** and then **Run anyway** to continue.
7. Read and accept the License Agreement, then click **Install** to continue the installation.
8. Reboot the computer.



## LUMA Detector Installation

Refer to the *LUMA Installation Guide* for instructions on connecting to a gas chromatograph (GC).



## Create and Configure Instrument

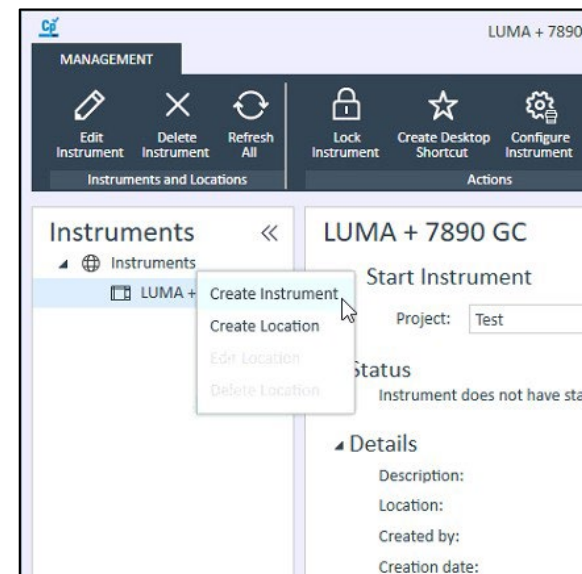
1. Capture the IP Address of the LUMA detector from the Info panel.

READY TO RUN		LUMA-001	
IP Address		FW Version	
192.168.1.10		1.0.0.7228-2-20102800	
LUMA Serial Number		MAC Address	
E11-0L1D-010.999		00:12:34:56:78:9A	

2. Open the Agilent Control Panel using the desktop shortcut or clicking **Start » All Programs » Agilent Technologies » Control Panel**.



3. Right-click **Instruments** and select **Create Instrument**.



## Create and Configure Instrument cont.

4. Enter the following instrument information:

- **Name**
- **Description** – (Optional) Any additional information about the instrument
- **Instrument Type** – Select *Agilent GC & GC/MS Systems*
- **Contact** – (Optional)
- **Default Project** – (Optional)  
The default project location to store methods, sequences, runs, etc.

5. Click **OK** to create the instrument.

**Create Instrument**

Name: LUMA Detector

Description: VUV Analytics LUMA Programmable Vacuum Ultraviolet Detector

Application: OpenLab CDS

Instrument controller: VUV-SWLAB

Instrument type: Agilent GC & GC/MS Systems

Contact:

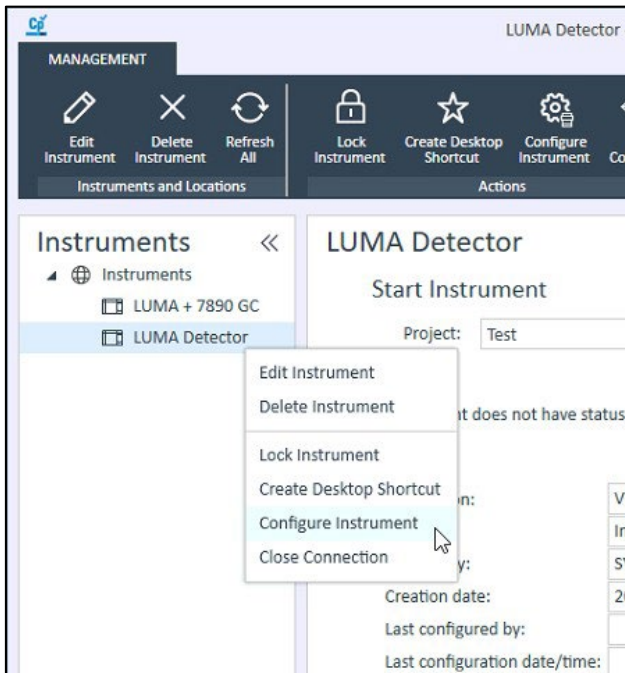
Default project: Test  Always use Default project

OK Cancel



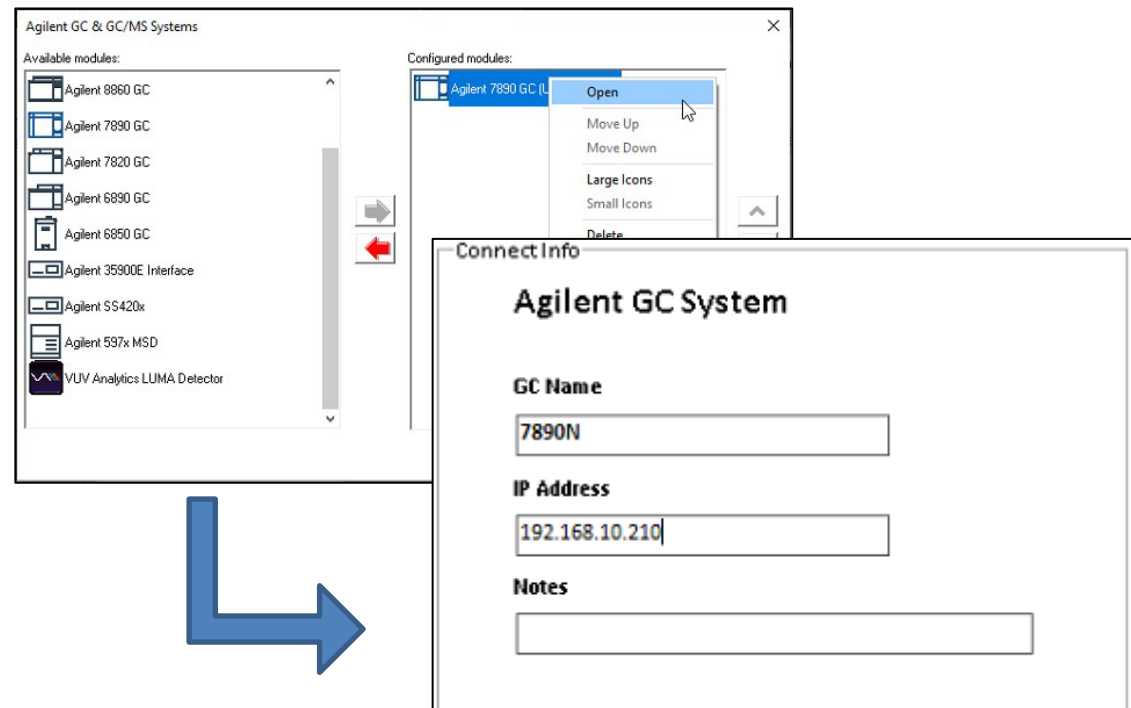
## Create and Configure Instrument cont.

6. Right-click the new instrument and select **Configure Instrument**.



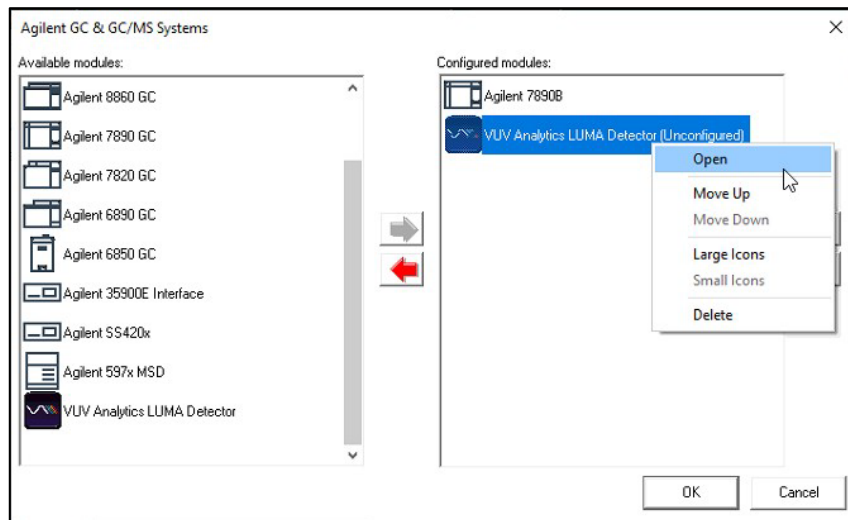
7. In the Available Modules list, select the correct Agilent GC type and click the **green arrow facing right** to add it to the instrument.

8. Right-click the **unconfigured Agilent GC** on the right and select **Open** to configure the instrument (refer to your GC manual to configure the connection).



## Create and Configure Instrument cont.

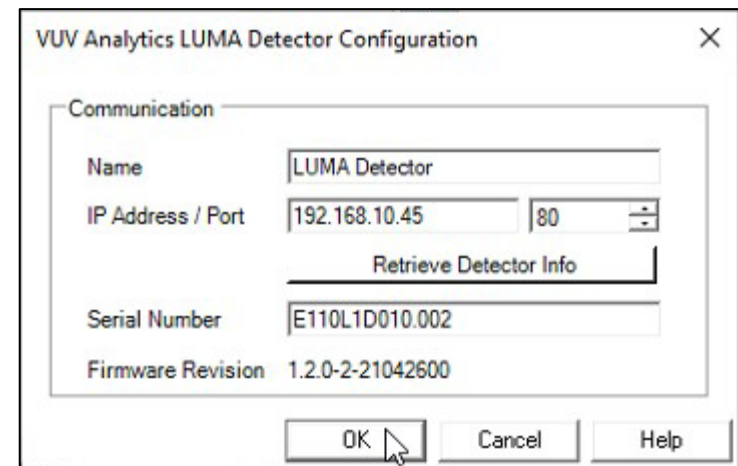
- In the Available Modules list, select VUV Analytics LUMA Detector and click the **green arrow** to add it to the instrument.
- Right-click the **unconfigured LUMA** on the right and select Open to configure the instrument.



- Enter the following information:
  - Name**
  - IP Address / Port** – 80 is the default port

- (Optional) Click **Retrieve Detector Info** to fetch the Serial Number and Firmware Revision at the specified IP address.

- Click **OK** on all dialogs to save the configuration.



## Open the Acquisition Window

- In the Control Panel, select an Instrument and click the **Launch** button to open the Acquisition window.

**MANAGEMENT**

Edit Instrument Delete Instrument Refresh All Lock Instrument Create Shortcut Configure Instrument Close Connection Copy to Clipboard

Instruments and Locations Actions Selected Row

LUMA-005 + GC 7890B Not Connected

Start Instrument

Project: Test

Launch Launch Offline

Launch an online instrument session

► Status

▾ Details

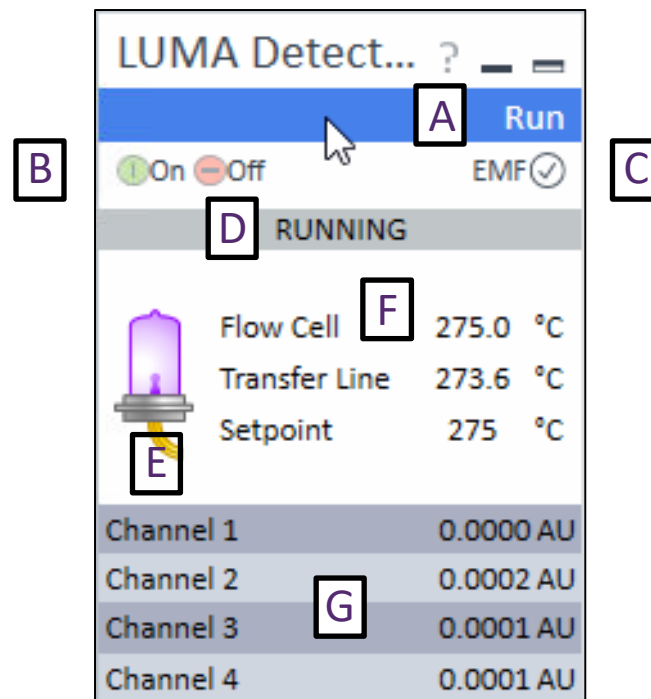
Description:	Agilent 7890 + LUMA
Location:	Instruments
Created by:	SYSTEM
Creation date:	2021-09-14 14:31:36-05:00
Last configured by:	SYSTEM
Last configuration date/time:	2021-09-21 18:33:48-05:00
Last modified by:	SYSTEM
Last modified date/time:	2021-10-15 11:59:40-05:00
Application:	OpenLab CDS
Instrument controller:	DESKTOP-58VTLRH
Instrument type:	Agilent GC & GC/MS Systems
Id:	24
Owner contact information:	Ryan

Current user: SYSTEM



## LUMA Detector Status

- A. OpenLab CDS Driver Run State – valid states include *Offline*, *Idle*, *Not Ready*, *Prerun*, and *Run*.
- B. Detector On/Off Control – can be used to place LUMA in a warm-up mode before runs, but not required (detector will automatically warm up, if necessary).
- C. Maintenance indicator
- D. LUMA detector state – detailed LUMA status; valid states include:
- *IDLE*
  - *HEATING FLOW CELL TO TEMP*
  - *STARTING LAMP*
  - *WARMING UP LAMP*
  - *WAITING ON TEMP*
  - *READY TO RUN*
  - *ADJUSTING GAIN*
  - *FETCHING DARKS*
  - *FETCHING REFS*
  - *RUNNING*
- E. Lamp status
- F. Temperature status
- G. Output channel absorbances



## Configuring a Method

1. Click the **Method** button in the **Layout** group at the top of the Acquisition window.
2. Under Instrument Setup, Click the **Agilent GC** and configure the module.
3. Click **LUMA Detector** to set up a method (may have a different name, depending on earlier configuration).
4. After configuring the LUMA, click the Save button to store the method to disk.

Acquisition Method – Untitled

General Properties

Instrument Setup

- LUMA Detector
- Agilent 8890

Band Configuration	Acquire?
Band 1 (118-130 nm)	<input checked="" type="checkbox"/>
Band 2 (130-143 nm)	<input checked="" type="checkbox"/>
Band 3 (143-154 nm)	<input checked="" type="checkbox"/>
Band 4 (154-165 nm)	<input checked="" type="checkbox"/>
Band 5 (165-172 nm)	<input checked="" type="checkbox"/>
Band 6 (173-181 nm)	<input checked="" type="checkbox"/>
Band 7 (182-193 nm)	<input checked="" type="checkbox"/>
Band 8 (194-208 nm)	<input checked="" type="checkbox"/>
Band 9 (210-229 nm)	<input checked="" type="checkbox"/>
Band 10 (232-261 nm)	<input checked="" type="checkbox"/>
Band 11 (265-317 nm)	<input checked="" type="checkbox"/>
Band 12 (325-1050 nm)	<input checked="" type="checkbox"/>

Detector Configuration

Sampling Rate: 10

Active Temp Setpoint: 275

Idle Temp Setpoint: 120



## Configuring a Method cont.

### 5. Channel Configuration

- A. Output Enable – if checked, channel will be acquired. All channels are enabled by default.
- B. Band selection – select which VUV band to acquire.

### 6. Detector Configuration

- C. Sampling Rate – The rate at which the driver will acquire data; valid rates range from 1 – 100 Hz (10 Hz default).
- D. Active Temp Setpoint – The flow cell and transfer line setpoint to use for runs (275 deg C default).
- E. Idle Temp Setpoint – The flow cell and transfer line setpoint when the detailed LUMA state is *IDLE* (120 deg C default).

The screenshot displays the 'Acquisition Method - Untitled' window. On the left, a tree view shows 'General Properties' and 'Instrument Setup' with 'LUMA Detector' and 'Agilent 8890' selected. The main area is divided into two panels:

- Band Configuration (A):** A table with 12 rows, each representing a VUV band. The 'Acquire?' column contains checkboxes, all of which are checked.
 

Band	Acquire?
Band 1 (118-130 nm)	<input checked="" type="checkbox"/>
Band 2 (130-143 nm)	<input checked="" type="checkbox"/>
Band 3 (143-154 nm)	<input checked="" type="checkbox"/>
Band 4 (154-165 nm)	<input checked="" type="checkbox"/>
Band 5 (165-172 nm)	<input checked="" type="checkbox"/>
Band 6 (173-181 nm)	<input checked="" type="checkbox"/>
Band 7 (182-193 nm)	<input checked="" type="checkbox"/>
Band 8 (194-208 nm)	<input checked="" type="checkbox"/>
Band 9 (210-229 nm)	<input checked="" type="checkbox"/>
Band 10 (232-261 nm)	<input checked="" type="checkbox"/>
Band 11 (265-317 nm)	<input checked="" type="checkbox"/>
Band 12 (325-1050 nm)	<input checked="" type="checkbox"/>
- Detector Configuration (C):** A panel with three settings:
  - Sampling Rate: 10 (dropdown menu)
  - Active Temp Setpoint: 275 (spin box) (D)
  - Idle Temp Setpoint: 120 (spin box) (E)



## Available Channels

The following channels are captured during a run:

- Output 1-12 – Output absorbance channels
- Lamp Intensity – Lamp absorbance channel
- Lamp Temperature
- Flow Cell Temperature
- Transfer Line Temperature
- Electronics Temperature



## Troubleshooting

Click the Activity Log button to check for error messages

Error Message	Solution
<p><i>Connection timeout. Please check the device connectivity!</i></p>	<ul style="list-style-type: none"> <li>• Check that the LUMA OS interface is accessible by typing <code>http://&lt;IP Address&gt;</code> into a web browser.</li> <li>• Verify the IP address listed on the detector and update the configuration, if changed.</li> <li>• Check the ethernet connection to the detector. Power cycle the detector.</li> </ul>
<p><i>Aborted injection – Aborted by: Hardware error</i></p>	<ul style="list-style-type: none"> <li>• A fault caused by either the flow cell, transfer line, or lamp.</li> <li>• Check the detector screen to determine which fault has occurred.</li> </ul>
<p><i>External component has thrown an exception.</i></p>	<ul style="list-style-type: none"> <li>• An internal error in the driver has occurred.</li> <li>• Contact VUV Analytics for support.</li> </ul>





V U V   A N A L Y T I C S <sup>TM</sup>

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