

How to take care of your Agilent Max-Light Cartridge Cells

Technical Note

Thank you for purchasing a Max-Light Cartridge Cell for your Agilent G4212A/B or G7117A/B/C DAD detectors. These flow cells have been designed for maximum sensitivity and simplicity. To ensure maximum lifetime, we recommend following the 'Best Practices' for these products as provided below.

General Information

Included part numbers:

p/n	Description
G4212-60008	Max-Light Cartridge Cell (10 mm, V(σ) 1.0 μ L)
G4212-60007	Max-Light Cartridge Cell (60 mm, V(σ) 4.0 μ L)
G4212-60032	HDR Max-Light Cartridge Cell (3.7 mm, V(σ) 0.9 μ L)
G4212-60038	ULD Max-Light Cartridge Cell (10 mm, V(σ) 0.6 μ L)
G7117-60020	Max-Light Cartridge Cell LSS (10 mm, V(σ) 1.0 μ L)

Table 1 Maximum pressure specification

Maximum operating pressure	70 bar
Maximum incidental pressure	150 bar

Best Practices

NOTE

Pay attention to the pressure limit of the cell.

Avoid pressure increase related to sources behind the flow cell

- Use a standard (0.7 mm ID) waste tubing on the Max-Light Cartridge Cell and ensure that there are no kinks or blockages.
- Agilent strongly recommends installing a pressure relief valve (Inline Pressure Relief Valve Kit (G4212-68001)) when another module is installed in the flow path behind the flow cell (for example, LC/MSD, FLD, ELSD).

The pressure relief valve protects the flow cell from overpressure and can be cleaned and re-activated.

- Do not touch the light inlet and outlet of the cell with your fingers. This will add a layer of contamination on the flow cell window and reduce the light throughput.
- Do not let buffers stay for long times in the Max-Light Cartridge Cell.
 - Flush the Max-Light Cartridge Cell when finished with the application.
 - Use fresh, clean water, followed by isopropanol, if the cell is not in use for more than 1-2 days.
 - Flush out the isopropanol first with water, before switching to buffers again.

Avoid blockages within the flow cell

- Don't use a VWD outlet tubing on a Max-Light Cartridge Cell, as it contains a restrictor.
- Using PEEK-FS capillaries is not recommended.

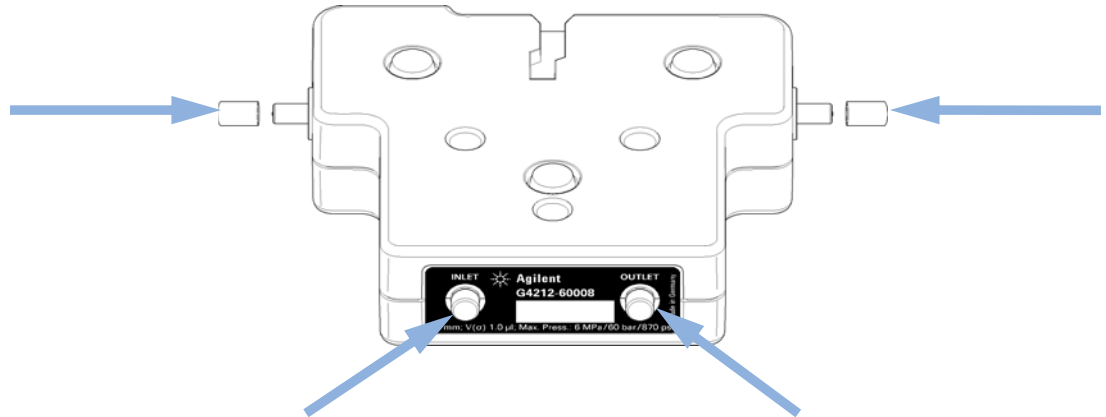
In combination with the SST zero dead volume fitting (for example, at the inlet) the capillary could break, and the glass particles could block or damage the flow cell.
- Be aware of possible precipitation. Buffers, such as KH_2PO_4 , can precipitate crystals once the percentage of the organic solvent is too high.

From a chromatographic point of view, there's no need to always go up to, for example, 100 % ACN.
- Consider installing an inline filter (1290 Infinity II Inline Filter Kit (5067-6189)) in front of the flow cell.

Best Practices

General handling recommendations

- Do not expose the Max-Light Cartridge Cells to shocks.
 - Avoid storage in a drawer.
 - Storage in a dry cabinet is recommended.
- Install the white plugs and black caps before storing.



- Annually perform a preventive maintenance on the instrument.
- Always use HPLC-grade or higher-grade solvents. Do not use technical grade isopropanol for flushing.
- Replace water-based mobile phases daily.
- Consider filtering solvents (also water) through 0.2 μm filters.
- Replace organic mobile phases at least every second day.
- Always use fresh solvents and solvent bottles:
 - Do not refill the bottles straightaway.
 - Rinse the bottle first with fresh solvent, empty it, then fill it with fresh solvent.
- Inspect solvent bottles and inlet filters for damage or discoloration.
- If not in use for several days, flush the entire system with water and finally with isopropanol.
- At installation, flush the entire system thoroughly with isopropanol and then with water before connecting the flow to the Max-Light Cartridge Cell.

Light Sensitive Samples (LSS) Aperture (G7117-60101) for Max-Light Cartridge Cell LSS 10 mm

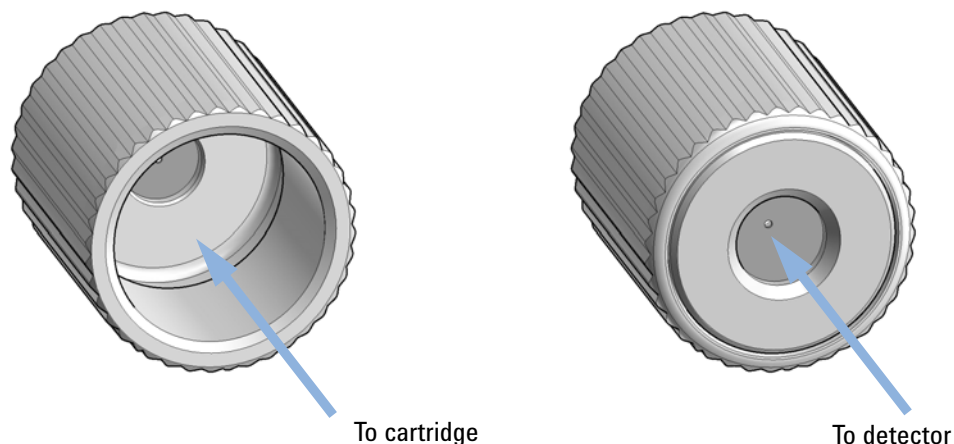


Figure 1 Aperture G7117-60101

- The Aperture should be installed for light-sensitive samples, which are likely to undergo photodegradation.
- The Aperture reduces the intensity of the light entering the cell and thus limits the photodegradation effects.
- The use of the Aperture increases the detector noise; for this reason, the use of the aperture is recommended for the light-sensitive samples only.
- The flow cell performance without the installed Aperture is the same as of the standard Max-Light Cartridge Cell 10 mm.

To install the Aperture, simply screw it on the light inlet of the Max-Light Cartridge Cell LSS (10 mm, $V(\sigma)$ 1.0 μ L) (G7117-60020). Do not apply any tools to affix the Aperture. Finger-tight fixation is enough. Make sure that the Aperture is aligned with the light path and does not obstruct the light path (not tilted in relation to the light axis). Check that after installation, the light intensity is approximately 10 % of the original.

Store the Aperture in a clean environment protected from dust. During installation and deinstallation wear powder-free gloves to protect the Aperture from possible contamination.

When performing detector tests in Lab Advisor, remove the Aperture.

Aperture is not compatible with other Max-Light Cartridges. It can only be installed on the Max-Light Cartridge Cell LSS (10 mm, $V(\sigma)$ 1.0 μ L) (G7117-60020).