



PhotoChip™

Temperature Controlled Photoflow Reactor Module for GSMs

UNIQSIS



PhotoChip™

High power, temperature controlled, photoflow reactor for GSMs



- Interchangeable, 365nm, 385nm, 405nm, 420nm, 455nm and 525nm versions
- 150W and 180W high-power LED versions
- Nitrogen gas purge inlet
- Compact and convenient
- Integrates with external recirculator or piped water supply
- Compatible with all Uniqsis GSMs and Tube-in-plate reactors
- Indicator window, safety interlock and LED thermal cutout fitted

The Uniqsis **PhotoChip™** is a standalone temperature-controlled photoflow reactor module for use with Uniqsis Glass Static Mixer blocks (GSMs) - sometimes referred to as 'chips'. Based upon the Uniqsis **Cold Chip GSM** reactor module, it is compatible with both COMPACT and LARGE format Uniqsis Glass Static Mixer blocks and, with channel volumes up to 20ml, is designed for use as a flow-mixing reactor.

The large-format LED array is populated with high-power LEDs that are available in a wide range of wavelengths (365nm, 385nm, 405nm, 420nm, 455nm and 525nm). Versions are available that are compatible with both the variable intensity digital **Borealis** power supply unit or the more compact basic **Scholar** PSU. The former is 180W whilst the **Scholar** is 150W.

A spacer with internal cooling channels fitted with an indicator window separates the LED lamp from the **Cold Chip** in order to accommodate the threaded tubing connections on the GSM.

Accurate temperature control of the GSM is achieved by connecting the **PhotoChip** to an external thermoregulating recirculator or piped water supply (for reactions close to ambient). An external temperature sensor or process probe is inserted into the baseplate directly beneath the GSM.

Liquid-cooling of the LED array can be achieved either by connection in series with the recirculator or separately by connecting to a cold water supply. For reactions close to room temperature, a cold water supply can be connected in series to both components obviating the need for the recirculator.

Even with the associated power supply, the compact **PhotoChip** takes up minimal fume hood space.

Setup is straightforward and takes only a few steps.



- Firstly, fit the GSM to the **Cold Chip** baseplate, then fit the 'spacer'.
- Connect the tubing and thread it through the foam insert to the back of the spacer.
- Fit the LED array onto the locating studs and insert the temperature sensor.
- Connect the coolant hoses and switch on the flow/recirculator.

- Finally, connect the power supply, switch on the LEDs and start the reaction flow.

Note: when using the version with the **Scholar PSU** (which does not have the ability to read temperatures) and a running cold water supply (no recirculator), a separate digital thermometer can be inserted into the base in order to measure the reactor temperature.

To protect the LEDs, the **PhotoChip** lamp module is fitted with a thermal cutout that is triggered at 50°C (it automatically resets when the LEDs have cooled down to 30°C). In addition, for safety, an interlock is fitted to turn off the LEDs and avoid inadvertent exposure to intense narrow bandwidth light, should an attempt be made to lift the lamp unit from the base during operation.

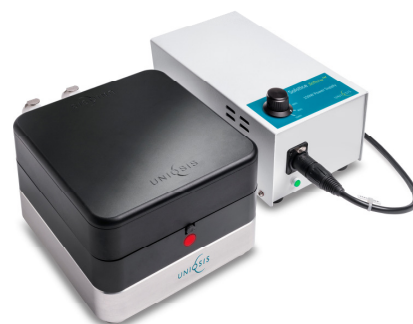
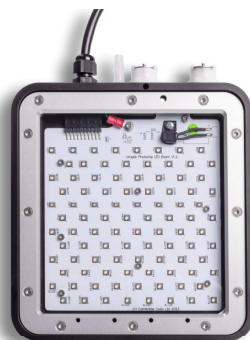
Different versions of the **PhotoChip** LED lamp unit are available dependent upon the PSU selected.

The 180W **Borealis** digital PSU is matched to a lamp unit with 120x individual high-power LEDs (shown opposite).



The 150W **Scholar PSU** is matched to a lamp unit with 96 individual high-power LEDs (shown opposite).

The **Scholar PSU** has a manually variable output (20% increments) and is unable to read or display temperatures (the reactor temperature is monitored using a separate digital temperature probe). Whilst it lacks the remote programmable features of the **Borealis PSU**, it is both more compact and cost-effective.



PhotoChip is a modular, compact and powerful temperature-controlled reactor module that enables photoflow chemistry to be performed efficiently in **Glass Static Mixer Reactor Blocks** with static mixing throughout the flow path and reproducible control of reaction parameters.

PHOTOCHIP™ GSM Compact Photoflow Reactor Module	
UQ8230	PHOTOCHIP™ GSM, base unit including spacer (excluding LED lamp and PSU)
PhotoChip 120W LED arrays	
UQ8226	BOREALIS™ SCHOLAR Vario Power Supply Unit, 150W; 110/230V
UQ8231	PhotoChip LED lamp unit, 365nm, 150W
UQ8232	PhotoChip LED lamp unit, 385nm, 150W
UQ8233	PhotoChip LED lamp unit, 405nm, 150W
UQ8234	PhotoChip LED lamp unit, 420nm, 150W
UQ8235	PhotoChip LED lamp unit, 455nm, 150W
UQ8236	PhotoChip LED lamp unit, 525nm, 150W
UQ8237	External Temperature Sensor with handheld display
PhotoChip 180W LED arrays	
UQ8206	BOREALIS™ Digital Power Supply, 300W; 230/110V
UQ8231HP	PhotoChip HP LED lamp unit, 365nm, 180W
UQ8232HP	PhotoChip HP LED lamp unit, 385nm, 180W
UQ8233HP	PhotoChip HP LED lamp unit, 405nm, 180W
UQ8234HP	PhotoChip HP LED lamp unit, 420nm, 180W
UQ8235HP	PhotoChip HP LED lamp unit, 455nm, 180W
UQ8236HP	PhotoChip HP LED lamp unit, 525nm, 180W