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Product Information

SynLED Parallel Photoreactor

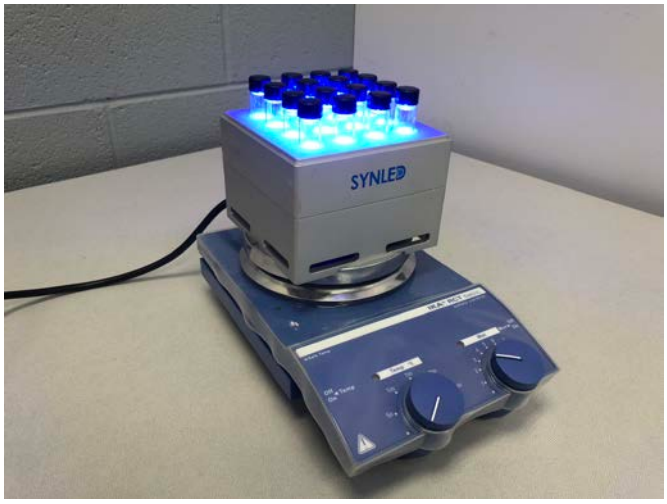
Catalog Number **Z742680**

TECHNICAL BULLETIN

Product Description

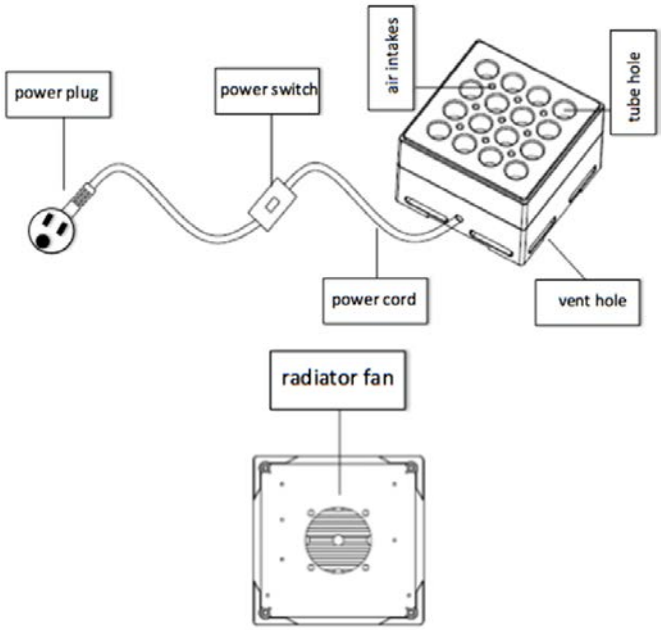
The SynLED Parallel Photoreactor simplifies small-scale photocatalysis reaction screening by ensuring consistency between reactions and reproducibility between runs. Bottom-lit light emitting diodes (LEDs) across a 4 × 4 reaction block array and a built-in cooling fan provide consistent light intensity, angle, and temperature to each parallel reaction. The Parallel Photoreactor is designed to be used with an IKA stir plate, and can handle 1–2 dram scintillation vials or microwave vials with an O.D. of 1.7 cm or less.

For a complete listing of transition-metal based and organic photocatalysts for use in the SynLED Parallel Photoreactor, please visit sigmaaldrich.com/photocatalysis.



Components

The SynLED Parallel Photoreactor (Catalog Number Z742680) consists of a photoreactor block, power cord, and plug adapter.



Product Parameters
Input: AC 100–240 V 50/60 Hz
Output: 12 W
Light-emitting angle: 45°
Pulse current: 700 mA
Lumens (LM): 130–140 LM
Wavelength: 465-470 nm
Maximal wavelength: 467.5 nm
Working temperature: –10 to +60 °C
Life time of LEDs: 100,000 hours
Size: 20 cm × 20 cm × 20 cm
Temperature: 35 °C
Adapter: US plug supplied with adapter

Compatible with
Liquid scintillation vials (8 mL Wheaton, Catalog Number Z188719 or equivalent)
IKA magnetic stirrer with round plate (RCT basic, Catalog Number Z645052 or equivalent)

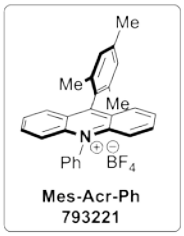
Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Procedure
1. Secure the device on an IKA magnetic stirrer.
2. Avoid spilling organic solvent into the device.
3. Do not attempt to disassemble and re-assemble the device.
4. Unplug when finished.
5. Wipe with a damp cloth instead of water.
6. To avoid light burn, keep the cover on at all time during the reaction.

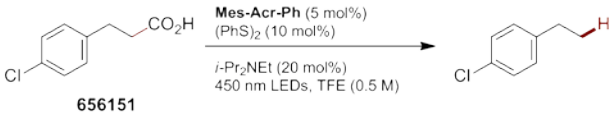
Materials for Sample Reaction

Description	Catalog Number
3-(4-chlorophenyl)propanoic acid	656151
9-Mesityl-10-phenylacridinium tetrafluoroborate (Mes-Acr-Ph)	793221
Diphenyl disulfide	169021
2,2,2-Trifluoroethanol	T63002
N,N-Diisopropylethylamine	387649

Sample Reaction Scheme



Mes-Acr-Ph
793221



656151

To a flame-dried, 2-dram vial equipped with a magnetic stir bar, 129.2 mg of 3-(4-chlorophenyl)propanoic acid (0.7 mmol), 15.4 mg of diphenyl disulfide, and 16.1 mg of Mes-Acr-Ph were added. The vial was transferred into a nitrogen-filled glovebox, and 1.4 mL of sparged trifluoroethanol was added, followed by 24 μL of *N,N*-diisopropylethylamine (20 mol%). The vial was sealed with a PFTE-coated septum screwcap. The vial was removed from the glovebox and placed in one of the 16 wells of the SynLED Parallel Photoreactor, which sits securely on an IKA magnetic stirrer. The vial was stirred at ambient temperature with the photoreactor turned on for 36 hours. Upon completion, the solvent was removed *in vacuo*, and the product was further purified by flash chromatography.

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