PHOTOCHEMISTRY SYSTEMS

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EvoluChem™
By HepatoChem

PhotoRedOx Box™

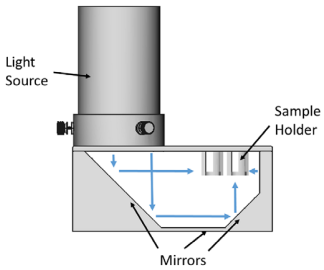
Screen easily with standardized format

The EvoluChem PhotoRedOx Box™ is the photoreactor choice for chemists who seek to standardize laboratory photochemical setups economically. A flexible design allows interchangeable LEDs from 365 to 808 nm and a wide variety of vials.

Our original photoreactor's patented design is compatible with most vial formats (0.3 ml, 2 ml, 4 ml, 8 ml and 20 ml vials) and its compact design allows for use with any stirring plate. A built-in fan keeps the reaction conditions at room temperature.

Features

- Interchangeable LED from 365 nm to 808 nm
- Chamber designed to evenly distribute light
- Magnetic stirring on standard stirring plate
- Flexible vial formats
- Cooling by fan to maintain experiment at room temperature
- Flow reactor available



Benefits

- Easy setup on a standard stirring plate
- Perform up to 32 reaction conditions simultaneously
- Individually sealed vials enable
- Flexible study design

US Patent #10,906,022

Specifications	HCK1006-01-016
Vial size	0.3 ml to 20 ml
Samples/reaction	32 max
Flow	2 ml Flow Cell available
Suggested light source	1x - EvoluChem™ LEDs PF
Compatible LEDs	Compatible with most PAR20 (2.5 in diameter style LED) sources
Wavelengths available	multiple options from 365nm to 808 nm
Light intensity	based on the attached LED source
Dimmable	based on the attached LED source
Temperature Control	Built in fans hold internal reactor temp. ~30 °C depending on light source
Chiller fittings	N.A.
Suggested chiller	N.A.
Stirring	external stir plate required
Dimension	6.5" X 6.5" X 4.0"
Power requirements	110V AC/ 12V DC (US) or 220V AC/12V DC (EU/UK)
Operating requirements	external stir plate, light source, chemical fume hood (if applicable), protective eyewear, safety shield
Related accessories	Lights Holders Flow Cell Safety Accessories

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EvoluChem™ By HepatoChem PhotoRedOx Box Duo™

Screen with double the workflow

Meet our photoreactor with double-capacity: The EvoluChem PhotoRedOx Duo™. It's the choice for the chemist who seeks higher reaction capacity and increased light intensity than found in the PhotoRedOx Box™.

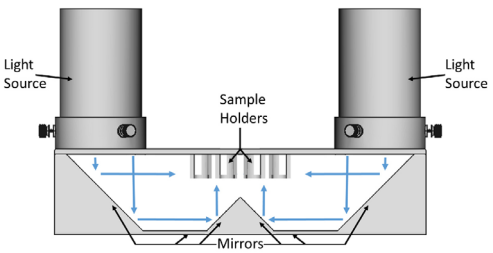
This photoreactor with double-capacity leverages the same patented concept (US Patent #10,906,022) as the original PhotoRedOx Box™. PhotoRedOx Duo™ increases the reaction vials capacity to 16 vials (2, 4 or 8 ml) using 2 of the same vial holders as the PhotoRedOx Box™. Using the 2 LED setup allows to increase reaction rate of difficult reaction conditions.

Features

- Interchangeable LED from 365 nm to 808 nm
- Chamber designed to evenly distribute light
- Magnetic stirring on standard stirring plate
- Flexible vial formats
- Cooling by fan to maintain experiment at room temperature
- Flow reactor available

Benefits

- Easy setup on a standard stirring plate
- Perform up to 32 reaction conditions simultaneously
- Individually sealed vials enable
- Flexible study design



US Patent #10,906,022

Specifications	HCK1006-01-023
Vial size	0.3 ml to 20 ml
Samples/reaction	64 max
Flow	2 ml Flow Cell available
Suggested light source	2x - EvoluChem™ LEDs PF
Compatible LEDs	Compatible with most PAR20 (2.5 in diameter style LED) sources
Wavelengths available	multiple options from 365nm to 808 nm
Light intensity	based on the attached LED source
Dimmable	based on the attached LED source
Temperature Control	Built in fans hold internal reactor temp. ~30 °C depending on light source
Chiller fittings	N.A.
Suggested chiller	N.A.
Stirring	external stir plate required
Dimension	10.75" X 4.875" X 7.0"
Power requirements	110V AC/ 12V DC (US) or 220V AC/12V DC (EU/UK)
Operating requirements	external stir plate, light source, chemical fume hood (if applicable), protective eyewear, safety shield
Related accessories	Lights Holders Flow Cell Safety Accessories

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PhotoRedOx Box TC™

Screen with temperature control

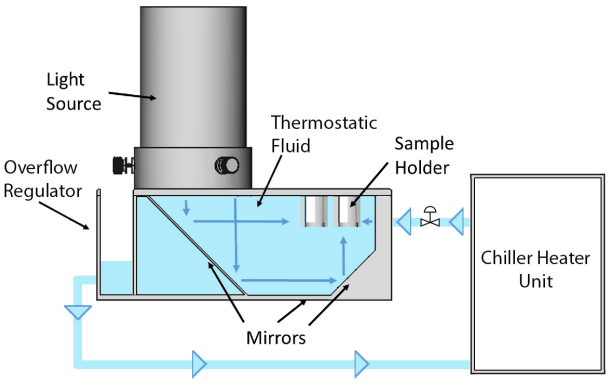
The EvoluChem PhotoRedOx Box TC™ (Temperature Controlled) is the chemist's choice for a temperature controlled photoreactor that provides the flexibility and precision of the PhotoRedOx Box™.

All the benefits of the PhotoRedOx Box™ with temperature control from 0°C to 80°C. The unique reaction chamber geometry directs light throughout, allowing the performance of multiple reaction conditions simultaneously. However, with the aluminum-based, waterproof PhotoRedOx TC™, it is possible to heat and cool the reaction medium using a thermostatic fluid (such as water or ethylene glycol) that recirculates through a standard chiller/heater unit.

Features

Interchangeable LED from 365 nm to 808 nm

- Chamber designed to evenly distribute light
- Magnetic stirring on standard stirring plate
- Flexible vial formats
- External recirculatory needed to heat/chill reaction vessel
- Flow reactor available



US Patent #10,906,022

Specifications	HCK1006-01-025
Vial size	0.3 ml to 20 ml
Samples/reaction	32 max
Flow	2 ml Flow Cell available
Suggested light source	1x - EvoluChem™ LEDs PF
Compatible LEDs	Compatible with most PAR20 (2.5 in diameter style LED) sources
Wavelengths available	multiple options from 365nm to 808 nm
Light intensity	based on the attached LED source
Dimmable	based on the attached LED source
Temperature Control	External heater/chiller allows operating temperature between 0 °C to 80 °C
Chiller fittings	3/8 inch ID tubing
Suggested chiller	Julabo Corio 200F or equivalent
Stirring	external stir plate required
Dimension	6.5" X 6.5" X 4.0"
Power requirements	N.A.
Operating requirements	external stir plate, light source, chemical fume hood (if applicable), protective eyewear, safety shield
Related accessories	Lights Holders Flow Cell Safety Accessories

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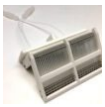
Accessories

Blue light protection

Safety First: We offer photochemistry eye protection including protective screens, glasses and blue light protection equipment. High-powered LED light sources, particularly in the UV spectrum, are known to be damaging to your eyes. Our special glasses and safety screens are there to protect your eyesight during reactions.

	Product & Part Number	Description
	**UV Safety Glasses** HCK1015-01-001	Skyper Eyewear, Orange Lens, Polycarbonate, UVextreme AF, Black Frame, TPU, UVEX/Honeywell S1933X
	**Protective Screen** HCK1015-01-002	Designed to fit inside standard chemistry hoods and limit direct exposure to photochemical light. The specific color of the screen is 100% effective at blocking all ultraviolet and blue light under 540 nm.

	Product & Part Number	Description
	**Vial Holder** HCK1006-01-017	32 x 0.3 ml vials photochemistry holder
	**Vial Holder** HCK1006-01-018	8 x 2 ml vials photochemistry holder
	**Vial Holder** HCK1006-01-019	8 x 4 ml vials photochemistry holder
	**Vial Holder** HCK1006-01-020	8 x 8 ml vials photochemistry holder
	**Vial Holder** HCK1006-01-021	2 x 20 ml vials photochemistry holder
	**Flow Cell** HCK1006-01-022	This 2 ml flow reactor is designed for the PhotoRedOx box, Duo and TC using 1/16 PFA tubing.

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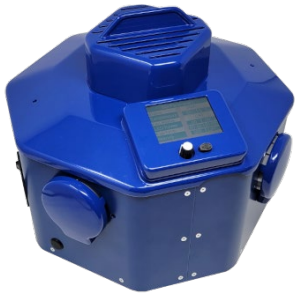
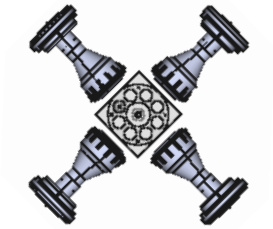
EvoluChem™ By HepatoChem | PhotoRedOx Box UV-Vis™

Explore UV and Visible Light

The choice for the chemist ready to explore the UV for new and exciting photochemical possibilities while also keeping the tools needed to do visible light chemistry from 254 nm to 808 nm.



This photoreactor is designed to perform photochemical reactions using UV and Visible light from 254 nm to 808 nm. It is compatible with holders for 8X 4 ml vials, 8X 8ml vials and 4X 20 ml vials. The reaction temperature is monitored using an IR probe and regulated with internal fans. This photoreactor comprises a stirring module and user interface to setup the experiments.



Designed for maximum and uniform irradiation level

Specifications	HCK1022-01-001
Vial size	4 ml, 8 ml and 20 ml vials
Samples/reaction	4 or 8 vials
Flow	Coming soon
Light source	4x - EvoluChem™ LEDs PF
Wavelengths available	multiple options from 254nm to 808 nm
Irradiation Power	1 µEinstein/s/ml in Vis 0.05 µEinstein/s/ml in UV mode
Dimmable	Yes
Temperature Control	Built in fans hold internal reactor temperature from 30°C to 60°C depending on user setting
Chiller fittings	N.A.
Suggested chiller	N.A.
Stirring	Internal magnetic stirring
Dimensions	14” X 14” X 12”
Power requirements	110-240V, 50/60Hz, 100W consumption
Operating requirements	Chemical fume hood (if applicable), protective eyewear
Related accessories	Lights Holders Flow Cell (coming soon) Safety Accessories

Features

- Single Wavelength LED irradiation from 254 nm to 808 nm
- Light intensity control with digital display
- Temperature monitoring and control from RT to 60°C
- Built in stir plate
- Screen multiple reactions simultaneously

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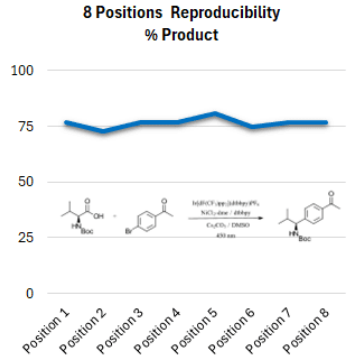
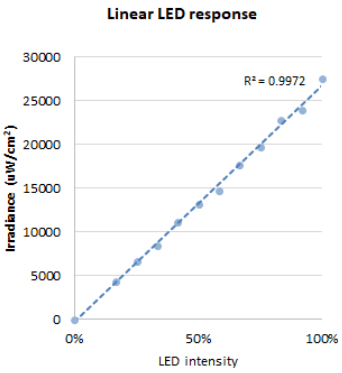
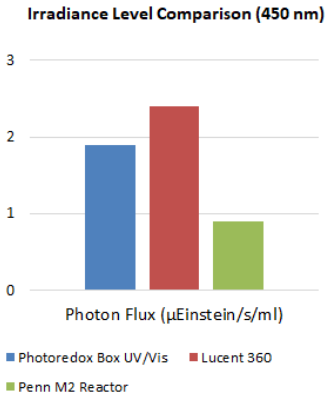
PhotoRedOx Box UV-Vis™

Outstanding Reproducibility and Irradiance Capability



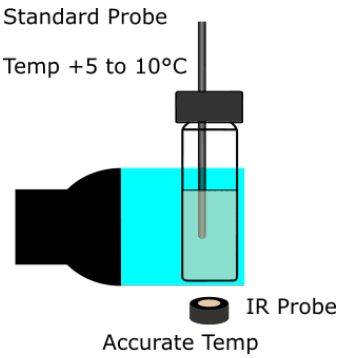




IR Temperature Monitoring

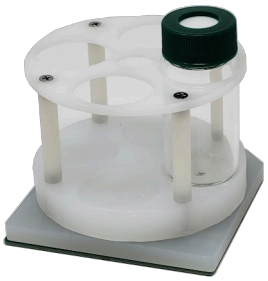
Monitoring the temperature of a photochemical reaction can be difficult and error prone based on how the temperature is being determined and the type of temperature probe.

Upon irradiation with high powered light from LEDs, the vial, solvent, reaction, photoreactor and the temperature probe itself can increase in temperature. For the purposes of safety, all of these measurements are important. To understand our chemical reaction, what is most important is the true temperature in the solution. The instrument uses an IR probe to accurately measure temperature while the reaction is being irradiated was determined.



8x 4 ml vials holder
HCK1022-01-002

8x 8 ml vials holder
HCK1022-01-003



4x 20 ml vials holder
HCK1022-01-004

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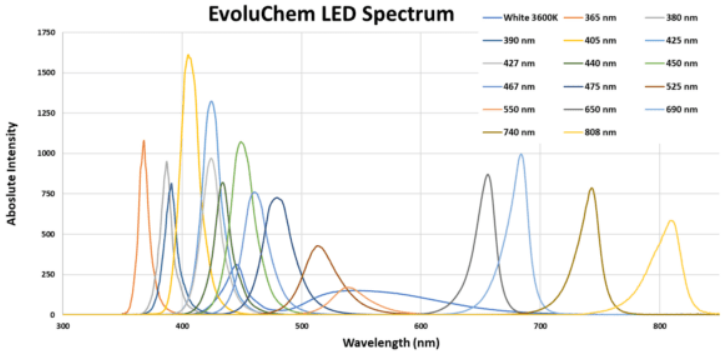
EvoluChem™ By HepatoChem | Evoluchem™ LEDs

LEDs designed specifically for photo-catalytic chemistry applications

The EvoluChem™ LED spotlights fit the PhotoRedOx Box™ and they are designed to irradiate all samples with maximum efficiency. The LED chips are selected for specific wavelengths of 365 nm, 380 nm, 390 nm, 405 nm, 425 nm, 427 nm, 440 nm, 450 nm, 467 nm, 475 nm, 525 nm, 550 nm, 595 nm, 650 nm, 690 nm, 740 nm, 808 nm and 6200K white.



Non-Dimmable or Dimmable LEDs

Each LED is sold separately from the power plug of US Type A (HCK1006-01-034) ,
EU Type C (HCK1006-02-034) or UK Type G (HCK1006-03-034)
We are introducing a new dimmable version of our PF LED series (15W-18W). The format of the dimmable version is identical to the non-dimmable LED. However, we will have 2 types of dimmable LED 110V and 220V rated LEDs.
Previously non-dimmable LEDs were sold with country specific power cord, HCK1012-01-XXX for US, HCK1012-02-XXX for EU and HCK1012-03-XXX for UK.
In 2025, we will sell the power cord separately, non-dimmable LEDs will be sold only under the HCK1012-01-XXX reference (110V-220V).
Dimmable LEDS will be sold under 2 references, HCK1012-04-XXX (110V) and HCK1012-05-XXX (220V) (for use with the Photoredox box UV-Vis) or individually with an external dimmer)
Power cords will be sold under 3 references HCK1006-01-034 for US, HCK1006-02-034 for EU and HCK1006-03-034 for UK.

		 power cord for PF LED light		
		US Plug HCK1006-01-034	EU Plug HCK1006-02-034	UK Plug HCK1006-03-034
	None-Dimmable PF LED 100V-240V HCK1012-01-XXX	✓	✓	✓
	Dimmable PF LED 110V HCK1012-04-XXX	✓		
	Dimmable PF LED 220V HCK1012-05-XXX		✓	✓

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EvoluChem™
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Evoluchem™ UV LEDs

EvoluChem non-dimmable and dimmable LED for PhotoRedOx boxes Single, Duo, TC and UV-Vis Photoreactor

Wavelength	Name	Non-Dimmable	Dimmable 110V	Dimmable 220V
365 nm	EvoluChem LED 365PF	HCK1012-01-029	HCK1012-04-029	HCK1012-05-029
380 nm	EvoluChem LED 380PF	HCK1012-01-013	HCK1012-04-013	HCK1012-05-013
390 nm	EvoluChem LED 390PF	HCK1012-01-018	HCK1012-04-018	HCK1012-05-018
405 nm	EvoluChem LED 405PF	HCK1012-01-010	HCK1012-04-010	HCK1012-05-010
425 nm	EvoluChem LED 425PF	HCK1012-01-012	HCK1012-04-012	HCK1012-05-012
427 nm	EvoluChem LED 427PF	HCK1012-01-020	HCK1012-04-020	HCK1012-05-020
440 nm	EvoluChem LED 440PF	HCK1012-01-021	HCK1012-04-021	HCK1012-05-021
450 nm	EvoluChem LED 450PF	HCK1012-01-002	HCK1012-04-002	HCK1012-05-002
467 nm	EvoluChem LED 467PF	HCK1012-01-022	HCK1012-04-022	HCK1012-05-022
475 nm	EvoluChem LED 475PF	HCK1012-01-003	HCK1012-04-003	HCK1012-05-003
505 nm	EvoluChem LED 505PF	HCK1012-01-028	HCK1012-04-028	HCK1012-05-028
525 nm	EvoluChem LED 525PF	HCK1012-01-004	HCK1012-04-004	HCK1012-05-004
550 nm	EvoluChem LED 550PF	HCK1012-01-023	HCK1012-04-023	HCK1012-05-023
595 nm	EvoluChem LED 595PF	HCK1012-01-030	HCK1012-04-030	HCK1012-05-030
6200K white	EvoluChem LED 6200K PF	HCK1012-01-005	HCK1012-04-005	HCK1012-05-005
650 nm	EvoluChem LED 650PF	HCK1012-01-014	HCK1012-04-014	HCK1012-05-014
690 nm	EvoluChem LED 690PF	HCK1012-01-024	HCK1012-04-024	HCK1012-05-024
740 nm	EvoluChem LED 740PF	HCK1012-01-015	HCK1012-04-015	HCK1012-05-015
808 nm	EvoluChem LED 808PF	HCK1012-01-025	HCK1012-04-025	HCK1012-05-025

EvoluChem UV Dimmable LED for PhotoRedOx UV-Vis Photoreactor 254 nm to 340 nm

Not compatible with other PhotoRedOx Boxes and Lucent360

Wavelength	Name	Dimmable 110V	Dimmable 220V
254 nm	EvoluChem LED 254PF	HCK1012-04-016	HCK1012-05-016
275 nm	EvoluChem LED 275PF	HCK1012-04-026	HCK1012-05-026
300 nm	EvoluChem LED 300PF	HCK1012-04-017	HCK1012-05-017
310 nm	EvoluChem LED 310PF	HCK1012-04-027	HCK1012-05-027
340 nm	EvoluChem LED 340PF	HCK1012-04-019	HCK1012-05-019

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Lucent360

Screen, batch, and flow

The EvoluChem Lucent360™ Advanced Photoreactor is the photoreactor choice for chemists serious about understanding all the factors necessary to take reaction from screen to scale in batch and flow.

The most advanced photoreactor available anywhere.
The Lucent360's patented design provides the most flexibility for parallel, batch and flow photochemistry with light intensity and temperature control in one device. Temperature control enabled by an external heater/ chiller unit. Light irradiation by custom, interchangeable light modules that surround the reaction chamber. The reaction chamber itself is comprised of 2 glass walls (Dewar) that thermally insulate light sources from the reaction vials.

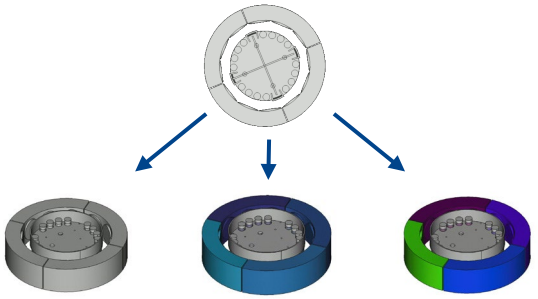
Features

- Multiple vial formats and configurations (from 0.3 ml to 700 ml)
- 20 ml or 50 ml flow cell available
- Temperature controlled (0° to 80° C) with thermostatic fluid
- Interchangeable LED light modules (254 nm through 808 nm)
- Heavy duty magnetic stirring
- Pre-set your favorite experiments for quick repeatability
- Time course experiments: parallel or in sequence

Benefits

- Unparalleled control of light wavelengths and intensities
- Investigate quantum yield with light irradiance screening
- Multiple reactor vessels enable parallel, batch, flow reaction, and light and wavelength screening

Screening capability



Reaction time Intensity Wavelength

Specifications	HCK1021-01-001
Vial size	0.3 ml to 700 ml
Samples/reaction	48 max
Flow	20 ml & 50 ml Flow Cells available
Suggested light source	4x - Lucent360™ side lights 1x - Lucent bottom module
Compatible LEDs	Lucent360™ side and bottom LED modules
Wavelengths available	multiple options from 254nm to 808 nm
Light intensity	controlled by instrument
Dimmable	Yes
Temperature Control	External heater/chiller allows operating temperature between 0 °C to 80 °C
Chiller fittings	3/8 inch OD tubing
Suggested chiller	Julabo Corio 200F or equivalent
Stirring	built-in magnetic stirring
Dimension	21.7" X 15.5" X 20.5 "
Power requirements	110 V or 220 V
Operating requirements	chiller/heater unit, chemical fume hood (if applicable)
Related accessories	Multi-light screener holders 700 ml Reactor 20 ml Flow cell 50 ml Flow cell

US Patent #11,992,819

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