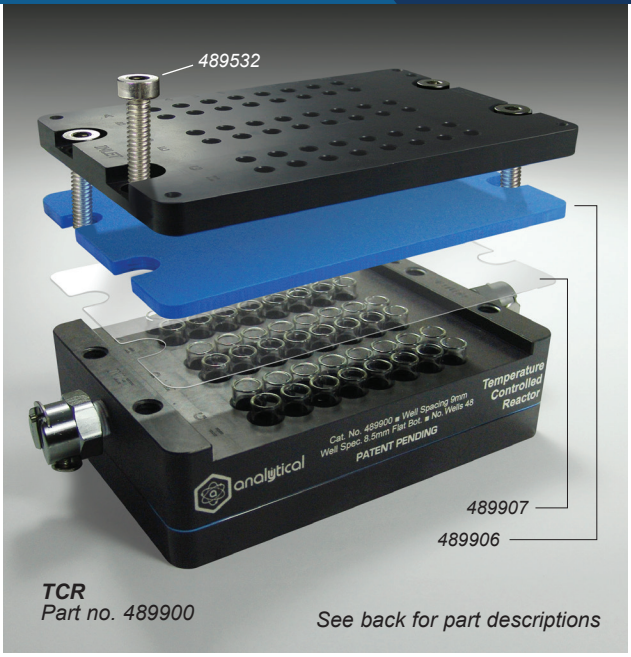
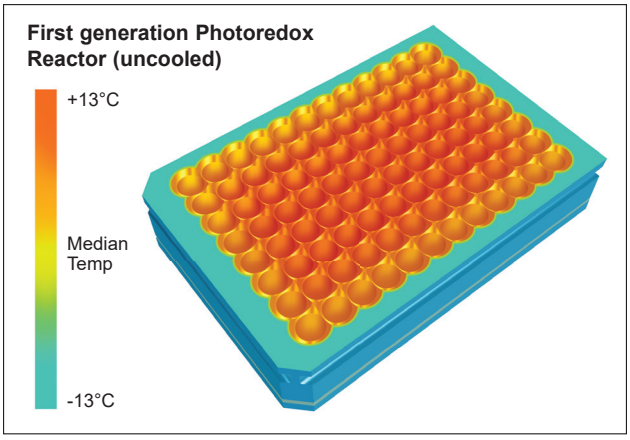
Temperature Controlled Reactor

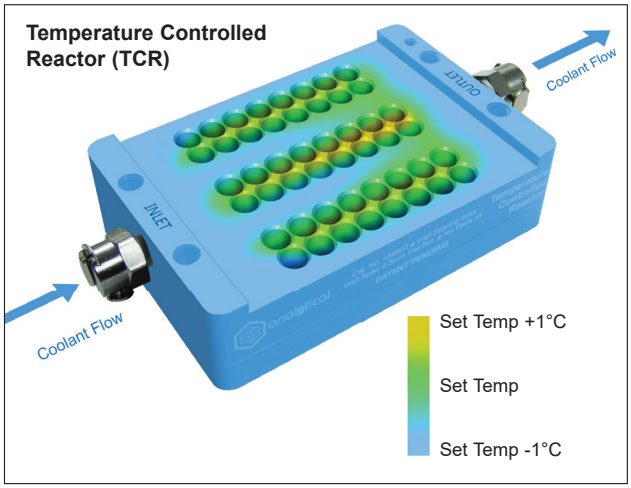


TCR
Part no. 489900

See back for part descriptions



Simulated heat maps of a standard 96-well Photoredox Reactor Block vs. a Temperature Controlled Reactor (TCR) when used with a Lumidox® II 48 Position LED Array at full power (stage 5).



Temperature Controlled Reactor (TCR)

- Use to screen up to 48 individual micro-vials at near-equal temperatures
- Provides extremely uniform thermal control for high throughput experimentation (HTE) with a temperature difference of +/- 1°C
- Capable of enhanced reproducibility in heating and cooling applications
- High quality leak-proof CPC fittings for quick and easy tubing connection and removal
- Compatible with a wide range of heat transfer fluids such as water (down to 5°C), ethylene glycol, polypropylene glycol and silicone-based fluids (ie SYLTHERM™)
- Designed to standard SLAS dimensions (127.75mm x 85.5mm) with standard 9mm well-to-well pitch
- Compatible with auto-samplers and other staples of high throughput chemistry
- 4mm holes in lid allow for use with most common auto sampler needles
- Threaded holes (6-32) in lid for accessory attachment

In order to achieve the performance specifications of the TCR system, a Lumidox® II 48 Postion LED Array (made specifically to match the TCR) is required. *See back for more information.*

The TCR is a fluid-filled reactor that keeps temperature consistent throughout the block and around your samples. It greatly reduces excessive heat that can be caused by external sources, such as the Lumidox® II 48 LED Array *(designed specifically for the TCR)*. Any fluid within the specified range can be pumped through the reactor to maintain well-to-well temperature uniformity.

Extreme temperature differences, thermal inconsistency, and thermal overload can all impact experimental validity, especially when using techniques like photocatalysis. The TCR solves these issues. Standard 96-well reactor blocks have no internal fluid path and no way to accurately set and control temperature uniformity. As such, high-powered LEDs used for photocatalysis reactions can produce an overall reactor heat gradient of up to **+/- 13°C**, with severe heat island effects. Analytical's TCR is capable of controlling temperatures to a uniformity of **+/- 1°C**.

Internal testing and design ensure that the TCR is fully compatible with all accessories provided by Analytical. Each TCR unit undergoes a gas-tight and watertight evaluation before they are released.

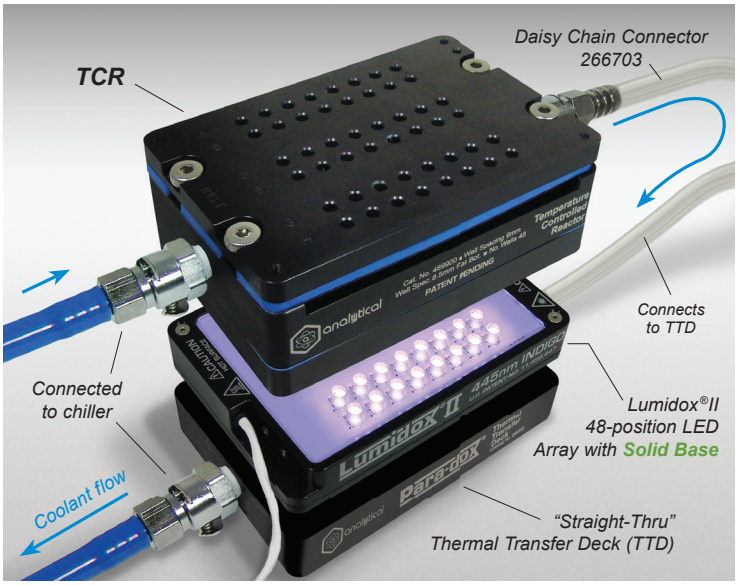
Temperature Controlled Reactor

• For 8x30mm Vials • 48 Wells (6 Rows of 8) • 9mm Well Spacing

Cat. No.	Description	Qty
489900	**48 Well TCR.** Includes: PFA Film, Blue Fluorosilicone Rubber Sealing Mat, Rubber Gasket, Silicone O-Rings, CPC Fittings, PUR Tubing, Screws. *Vials not included.*	Each
489906	1/8" Thick, Blue Fluorosilicone Rubber Sealing Mats for TCR	5
489907	0.005" Thick PFA Sealing Films for TCR	25
489908	9mm OD, 6mm ID, 1.5mm Wide Silicone O-rings for TCR	50
489532	18-8 SS Low-Profile Socket Head Screw w/ Hex Drive, 5/16"-18 Threads, 3/4" Long	5
TCubeEdge	Recirculating Chiller. Operating Range: 0°C - 65°C	Each
84001-Case	**1mL** Clear Glass Shell Vials, 8 x 30mm	1000
488401	Well Tray for TCR, Pre-loaded with 48 8x30 Shell Vials (84001-CASE)	Ea

Solid Base Lumidox®II 48-position LED Array for TCR

- Lens Mat surface
- Requires Thermal Transfer Deck (TTD) connected to chiller



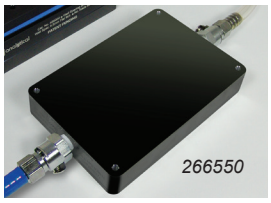
Configuration option 1: TCR used in conjunction with a Lumidox®II 48-position **Solid Base** LED Array, a "Straight-Thru" Thermal Transfer Deck (for additional cooling of array) and connected to an external liquid chiller.

Cat. No.	Wavelength (nm)
LUM248LS365	UV365
LUM248LS375	UV375
LUM248LS385	UV385
LUM248LS395	UV395
LUM248LS405	UV405
LUM248LS420	420-VIOLET
LUM248LS445	445-INDIGO

Cat. No.	Wavelength (nm)
LUM248LS470	470-BLUE
LUM248LS505	505-CYAN
LUM248LS527	527-GREEN
LUM248LS590	590-AMBER
LUM248LS630	630-RED
LUM248LSWHT	WHITE

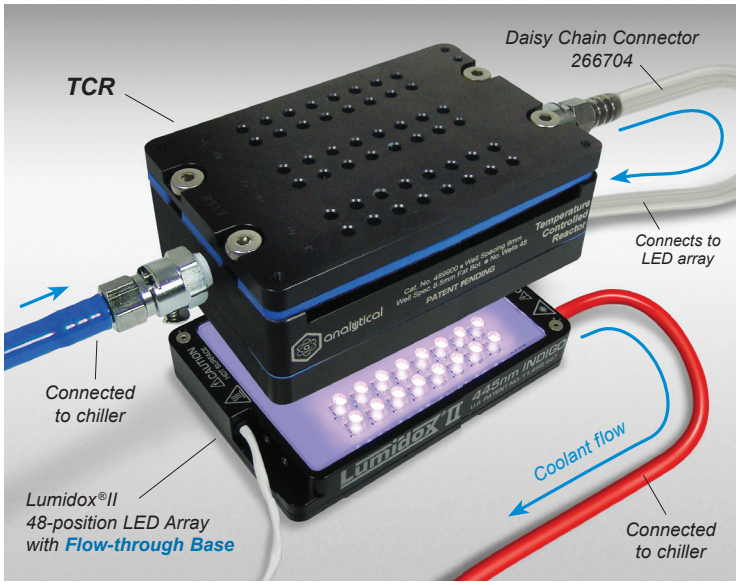
Required Parts

Cat. No.	Description	Qty
266550	Para-dox® "Straight-Thru" Thermal Transfer Deck (TTD)	Each
266703	Daisy Chain Connector for TCR and "Straight-Thru" TTD	Each



Flow-Through Base Lumidox®II 48-position LED Array for TCR

- Lens Mat surface
- Connects directly to chiller, no TTD needed



Configuration option 2: TCR used in conjunction with a Lumidox®II 48-position **Flow-Through Base** LED Array (self cooling) and connected to an external liquid chiller.

Cat. No.	Wavelength (nm)
LUM248LF365	UV365
LUM248LF375	UV375
LUM248LF385	UV385
LUM248LF395	UV395
LUM248LF405	UV405
LUM248LF420	420-VIOLET
LUM248LF445	445-INDIGO

Cat. No.	Wavelength (nm)
LUM248LF470	470-BLUE
LUM248LF505	505-CYAN
LUM248LF527	527-GREEN
LUM248LF590	590-AMBER
LUM248LF630	630-RED
LUM248LFWHT	WHITE

Required Parts

Cat. No.	Description	Qty
266704	Daisy Chain Connector for TCR and Flow-through LED Array	Each

Tech Tip

- **Temperature Controlled Reactor (TCR)*** - cools vials
- **Thermal Transfer Deck (TTD)*** - cools LED Array (solid base)
- **LED Array with solid base** - needs TTD and chiller for cooling
- **LED Array with flow-through base*** - connects directly to chiller, no TTD needed

* Connects to **External Liquid Chiller**, required

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