Para-dox®

Photoredox Catalysis &
Parallel Synthesis Reaction Blocks

Parallel Synthesis

Photoredox Catalysis

Electrochemistry

Winter 2023-24

analytical

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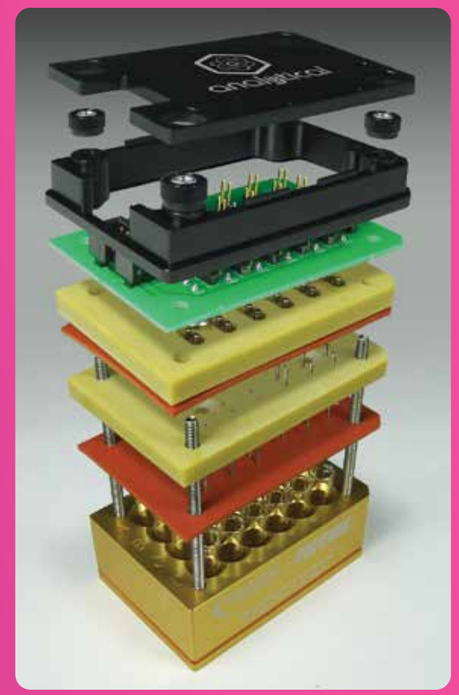

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Para-dox®
Photoredox Catalysis & Parallel Synthesis Reaction Blocks

Para-dox® Aluminum Reaction Blocks

A successful approach to high-throughput reaction screening requires the best tools available. Our comprehensive line of Photoredox Catalysis and Parallel Synthesis reaction blocks are exactly what you need. Designed specifically for high-throughput screening (HTS) applications, the SBS (SLAS/ANSI) format allows for use in any industry standard automation application.

- **Useful for generating compound arrays (medicinal chemistry)**
- **Useful for conducting screening reaction conditions**
- **Can be used on tumble stirrers / hot plate stirrers / robotic platforms**
- **Can easily be used in a glovebox**
- **Temperature range -78ºC – 150ºC**
- **Validated to have less than 5% solvent loss with prolonged heating above boiling point**
- **Silicone Rubber Mats provide compression sealing**
- **Teflon® PFA Films keep the glass reaction vials from sticking to the silicone rubber mats during heating**

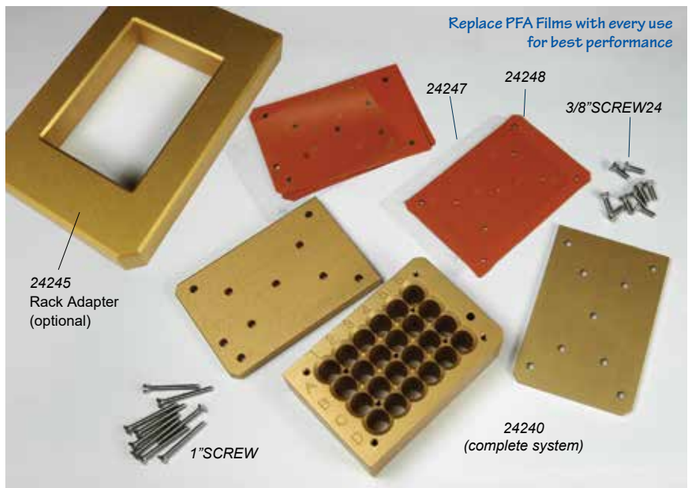
Parallel Synthesis Reaction Blocks
for Optimization of Chemical Processes

Tech Note: Parallel Synthesis Reaction Blocks are ideal for the optimization of chemical processes, lead generation optimization, and screening for optimal reaction conditions.

24249


24240

Standard 24-Position Parallel Synthesis Reaction Block
for 8x30mm, 1mL Glass Inserts



Cat. No.	Description	Qty
24240	Parallel Synthesis 24-Well Block Assembly. Includes Vial Rack, Top Cover, Bottom Cover, PFA Films, Rubber Mats, Screws and Rack Adapter	Each
24249	Parallel Synthesis/Optimization 24-Well Block Assembly, *no Rack Adapter*	Each
24245	Rack Adapter	Each
24247	Replacement Films for 24 Position, Optimization Block	25
24248	Replacement Mats for 24 Position, Optimization Block	25
3/8"SCREW24	3/8" Bottom Screws	100
1"SCREW	1" Top Screws	100


SD1000

Accessories for 24-Well Parallel Synthesis Blocks

Cat. No.	Description	Qty
84001-Case	**1mL** Clear Glass Shell Vials, 8 x 30mm	1000
13258	Stainless Steel Cylinder Stir Bars, 1.98mm x 4.80mm *(for 8x30mm Vials)*	1000
SD1000	Milwaukee M4 1/4in. Hex Screwdriver Kit. Includes 2 Batteries and Charger *(Note: batteries not available for international shipping)*	Each

96960

Cat. No.	Description	Qty
96960	Parallel Synthesis 96-Well Block Assembly Includes Vial Rack, Top and Bottom Covers, PFA Films, Rubber Mats and Screws	Each
96967	Replacement Films for 96-Well Optimization Block	25
96965	Replacement Mats for 96-Well Optimization Block	25
1/2"SCREW96	1/2" Bottom Screws	100
1"SCREW	1" Top Screws	100

Recommended for top performance!

Assembled Vials in Stackable Trays

- For easy loading - ***Saves Time!***
- Our thorough QC process ensures ***Less Evaporation*** compared to loose vials

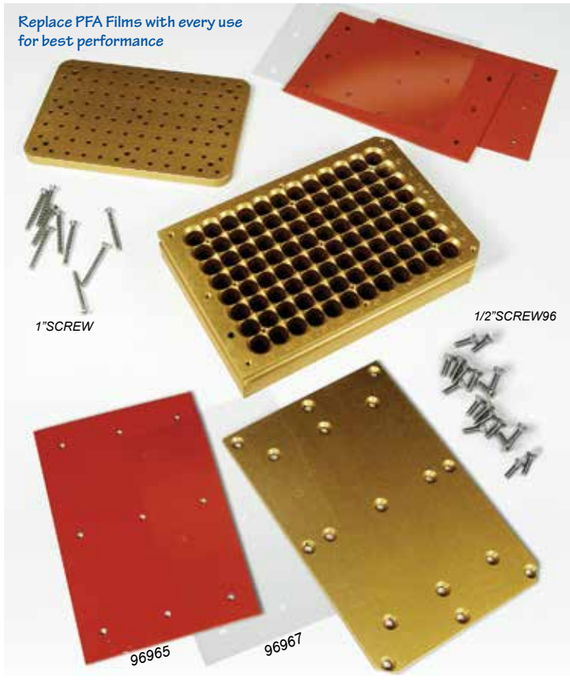

884001
(with **8x30**mm Shell Vials)

Cat. No.	Description	Qty
884001	Assembled Stackable Tray Loaded with **8x30**mm Shell Vials (84001-CASE), Includes Tray and Vials	Each

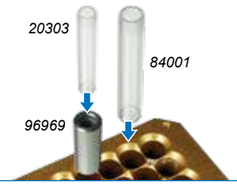

96242
(with **5x31**mm Flat-Bottom Vials. Must use with Aluminum Spacers, part # 96969)

Cat. No.	Description	Qty
96242	Assembled Stackable Tray Loaded with **5x31**mm Flat-Bottom Vials (20303-CASE), Includes Tray and Vials	Each

Standard 96-Position Parallel Synthesis Reaction Block
for 8x30mm, 1mL Glass Inserts

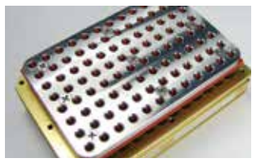


Both the 24-well and 96-well blocks will hold 750µL, 8x30mm flat-bottom glass inserts (*part no. 84001*). They will also hold 250µL, 5x31mm inserts (*part no. 20303*) when used with anodized aluminum spacers (*part no. 96969*).



Accessories

Cat. No.	Description	Qty
884001	Assembled Tray with 8 x 30mm Shell Vials	Each
96969	Anodized Aluminum Spacers for 5 x 31mm Inserts	96
13258	SS Cylinder Stir Bars, 1.98mm x 4.80mm *(for 8x30mm Vials)*	1000
SD1000	Milwaukee M4 1/4in. Hex Screwdriver Kit, includes 2 Batteries and Charger *(Note: batteries not available for international shipping)*	Each



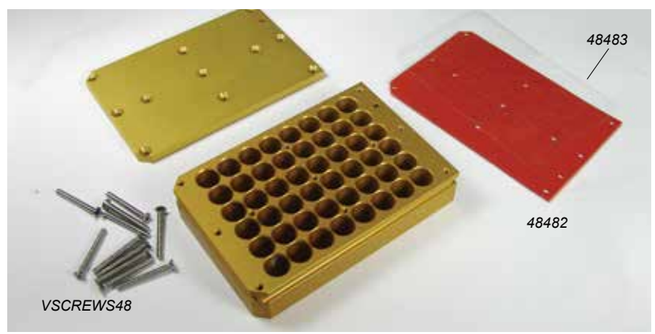
Top Cover with Wider Holes for 96-Well Reaction Blocks

- Enlarged (4.3mm) Holes
- 316 Stainless Steel
- **Made for Automated Sampling Instruments**

Cat. No.	Description	Qty
96985	Reaction Block Cover with Enlarged Holes, **6mm** Thickness	Each
96986	Reaction Block Cover with Enlarged Holes, **3mm** Thickness	Each

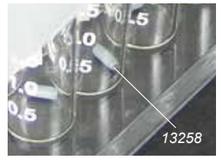
HPLC 48-Position Parallel Synthesis Reaction Block

for 12x32mm, 2mL Glass Vials



Use with 12 x 32mm vials, sold separately.

Cat. No.	Description	Qty
48012	48-Well Aluminum Reaction Block for 12mm (2mL) OD Vials. Includes: Base Plate, Cover, Screws, PFA Film and 2 Rubber Mats	Each
48482	Rubber Mats for 48 Well (12mm OD) Reaction Blocks	25
48483	PFA films for 48 Well (12mm OD) Reaction Blocks	25
VSCREW48	1 1/4" Screws for 48-Well Aluminum Reaction Plate	100
11211-Case	11mm, 12 x 32, 2mL Wide Mouth Glass **Crimp/Snap** Vials	1000
11221-Case	11mm, 12 x 32, 2mL Wide Mouth Glass **Crimp** Vials	1000
11221M-Case	11mm, 12 x 32, 2mL Wide Mouth Glass **Crimp** Vials with Marking Spot	1000



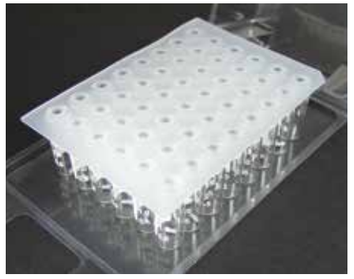
SS Cylinder Stir Bars for 2mL HPLC Vials

- Parylene Encapsulated
- For Photoredox and Parallel Synthesis Reaction Block Systems

Cat. No.	Description	Qty
13258	Stainless Steel Cylinder Stir Bars, 1.98mm x 4.80mm, for 2mL HPLC Vials	1000

Magnetic Stir Bars

Cat. No.	Description	Qty
50225	Magnetic Stir Bars, 5mm x 2mm, PTFE Coated	25
502100	Magnetic Stir Bars, 5mm x 2mm, PTFE Coated	100



48-Position Numbered Crimp Vial Assembly for Reaction Blocks

Cat. No.	Description	Qty
48221M	48-Well **Numbered** Crimp Vial Assembly. Includes: Vials (11221M) Marked 1-48; Stir Bar (13258) in Each Vial; 48-Well Cap Mat (99948)	Each

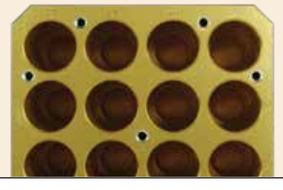
Cap Mat for HPLC (2mL) Vials in 48-Position Block

Cat. No.	Description	Qty
99948	Clear Silicone/PTFE Cap Mat for HPC Vials in 48-Position Reaction Block	5

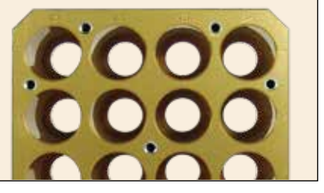
Parallel Synthesis vs. Photoredox Catalysis Reaction Blocks

Reactors for both applications are nearly identical. The difference lies in the base (vial rack) of the block. Reactors for parallel synthesis have wells with closed bottoms, whereas photoredox blocks have wells with open holes in the bottom allowing for light transmission via a **Lumidox®II Array,** as well as to read 2D barcodes.

Parallel Synthesis Block



Photoredox Catalysis Block



NEW! **Para-dox® Gen II Reaction Blocks for Parallel Synthesis are now available. See website.**

1 Dram, 24-Position Parallel Synthesis Reaction Block with 20mm Well Spacing

for 14x45mm, 4mL Glass Vials - *fits on Mettlers QX96*

31531

Use with 15 x 45mm vials, sold separately. See part number 31531-Case.

31554

Cat. No.	Description	Qty
24015	24-Well Aluminum Reaction Block for 15mm OD (1 Dram) Vials, Includes: Base Plate, Cover, Screws, PFA Film and 2 Rubber Mats	Each
24282	High-Temp Silicone/Rubber Cover for 24-Well Reaction Blocks for Vials	25
24283	PFA Film (0.005" Thick) for 24-Well Reaction Blocks for Vials	25
VSCREW24	1 3/4" Screws for 24-Well Aluminum Reaction Plate	100

Cat. No.	Description	Qty
31531-Case	Advantage™ 13mm, 15 x 45, 4mL Clear Glass Screw Vials, Case	1000
31554-Case	PTFE Lined Cap	1000

2 Dram, 24-Position Parallel Synthesis Aluminum Reaction Block

for 17x60mm, 8mL Glass Vials

31760

Use with 17 x 60mm vials, sold separately. See part number 31760-Case.

31542

Cat. No.	Description	Qty
24017	24-Well Aluminum Reaction Block for 17mm OD (2 Dram) Vials, Includes: Base Plate, Cover, Screws, PFA Film and 2 Rubber Mats	Each
24282	High-Temp Silicone/Rubber Cover for 24-Well Reaction Blocks for Vials	25
24283	PFA Film (0.005" Thick) for 24-Well Reaction Blocks for Vials	25
VSCREW24	1 3/4" Screws for 24-Well Aluminum Reaction Plate	100

Cat. No.	Description	Qty
31760-Case	Advantage™ 17 x 60mm, 8mL Clear Glass Screw Vials, Case	1000
31542-CASE	15mm Solid Black Polypropylene Screw Caps with PTFE/F217 Liners	1000
31543-CASE	Black Open Top PP Cap with PTFE/Silicone (0.065") Septa, 15-425mm Thread	1000

Gen II Aluminum Reaction Blocks
Photoredox Catalysis

NEW! Gen II Reaction Blocks

Para-dox SLAS footprint aluminum reaction blocks are now available in a 4 or 5-bolt configuration. Some benefits of these new blocks include:

- Less bolts = less time to assemble
- Less light bleed (48 and 96 position blocks)
- Less Maintenance
- Vials fit tighter (less shifting)
- Port for thermocouple, sensors, etc.
- Corner holes on both the lid and the bottom for accessory attachment
- Longer lasting screws (larger diameter, larger threads)
- Larger holes in lid to accommodate a variety of needle sizes
- Only one 1/8" rubber mat compared to two 1/16" mats on previous versions (makes for easier assembly)

Para-dox®

Photoredox Catalysis & Parallel Synthesis Reaction Blocks

Standard 96-Position Photoredox Reaction Block, Gen II

for 1mL, 8x30mm Glass Inserts

Catalog No.	Description	Qty
101960	4-Bolt, 96-Well Aluminum Reaction Block for 8x30mm (1mL) Glass Inserts. Includes: Base Plate, Cover, Screws, PFA Film and Rubber Mats	Each
101968	Top PFA Films for Gen II 96-Well (101960) and 48-Well (101480) Reactors	25
101967	Top Rubber Mats for Gen II 96-Well (101960) and 48-Well (101480) Reactors	25
101965	Bottom Rubber Mats for Gen II 96-Well Reactor (101960)	25
SHS0034	Socket Head Screws for Gen II 96-Well and 48-Well Reactors	5

Standard 48-Position Photoredox Reaction Block, Gen II

for 2mL, 12x32mm Vials

Catalog No.	Description	Qty
101480	4-Bolt, 48-Well Aluminum Reaction Block for 12x32mm (2mL) Vials. Includes: Base Plate, Cover, Screws, PFA Film and Rubber Mat	Each
101968	Top PFA Films for Gen II 96-Well (101960) and 48-Well (101480) Reactors	25
101967	Top Rubber Mats for Gen II 96-Well (101960) and 48-Well (101480) Reactors	25
SHS0034	Socket Head Screws for Gen II 96-Well and 48-Well Reactors	5

1 Dram 24-Position Photoredox Reaction Block, Gen II

with 18mm Well Spacing - for 4mL (1 Dram), 15x45mm Vials

Catalog No.	Description	Qty
101240	5-Bolt, 24-Well Aluminum Reaction Block for 15x45mm (4mL) Vials. Includes: Base Plate, Cover, Screws, PFA Film and Rubber Mat	Each
101248	Top PFA Films for Gen II 24-Well Reactor (101240)	25
101247	Top Rubber Mats for Gen II 24-Well Reactor (101240)	25
SHS0114	Socket Head Screws for Gen II 24-Well Reactors and 96-Well Lightweight Reactors	5

Standard 96-Position Photoredox LIGHTWEIGHT Reaction Block, Gen II

for 1mL, 8x30mm Glass Inserts

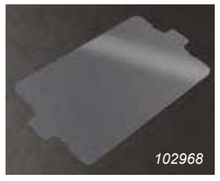
- 37% lighter than Gen II, 96-well standard 4-bolt reactor
- Great for use on a low-capacity balance with a 500g max limit
- Reduced weight allows for better centrifuge performance
- 9mm Well Spacing

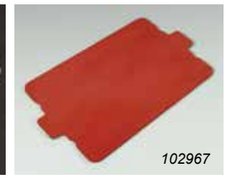
Catalog No.	Description	QTY
102960	4-Bolt, 96-Well LIGHTWEIGHT Aluminum Reaction Block for 1mL, 8x30mm Glass Inserts. Includes Vial Rack, Top Cover, PFA Sheet, Rubber Mats and Screws	Each
102968	Top PFA Films for Gen II LIGHTWEIGHT 96-Well Reactor (102960)	25
102967	Top Rubber Mats for Gen II LIGHTWEIGHT 96-Well Reactor (102960)	25
102965	Bottom Rubber Mat for Gen II LIGHTWEIGHT 96-Well Reactor (102960) - (two required per block)	Each
SHS0114	Socket Head Screws for Gen II 24-Well Reactors and 96-Well Lightweight Reactors	5

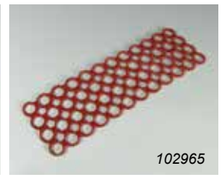
96-Well Reactor Assembly Weight*

Gen II, Lightweight (102960): 477.8g
- Base only, no lid or screws: 267.8g
Gen II, 4-Bolt (101960): 769.0g
Gen I, Original (96973): 536.0g

** Weight without vials. Adding vials will add ~ 131g.*







For easy loading, see **Assembled 96-Well Vial Trays** *on page 39*

Parallel Synthesis vs. Photoredox Catalysis Reaction Blocks

Reactors for both applications are nearly identical. The difference lies in the base (vial rack) of the block. Reactors for parallel synthesis have wells with closed bottoms, whereas photoredox blocks have wells with open holes in the bottom allowing for light transmission via a **Lumidox®II Array,** as well as to read 2D barcodes.

Parallel Synthesis Block, Gen II

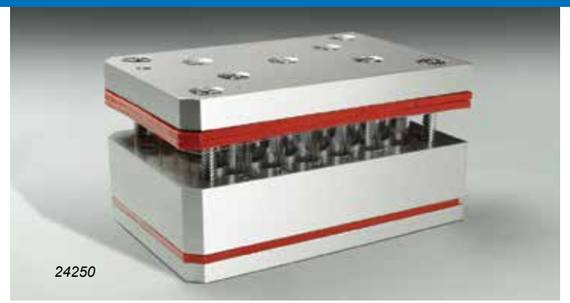
Photoredox Catalysis Block, Gen II

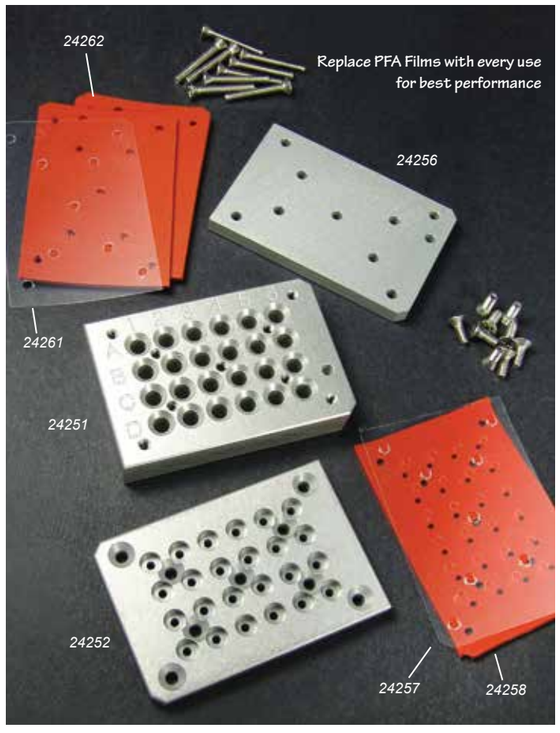
NEW! **Para-dox® Gen II Reaction Blocks for Parallel Synthesis are now available. See website.**

Para-dox®
Photoredox Catalysis & Parallel Synthesis Reaction Blocks

- Validated to have less than 5% solvent loss with prolonged heating above boiling point
- Temperature range -78ºC – 150ºC
- Quality Stirring with Tumble Stirring
- Silicone Rubber Mats provide compression sealing
- Teflon® PFA Films keep the glass reaction vials from sticking to the silicone rubber mats during heating

Photoredox Catalysis Reaction Blocks for Screening Chemistry





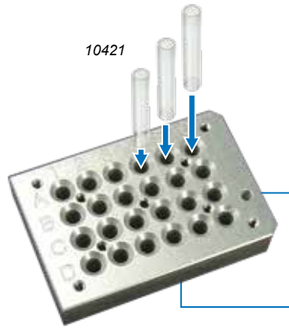
Micro 24-Position Photoredox Reaction Block
for 50µL, 4x21mm Micro Vial Glass Inserts

- 4x21mm flat-bottom glass micro vials, **50µL** volume *(25µL maximum volume if using tumble stir bars)*

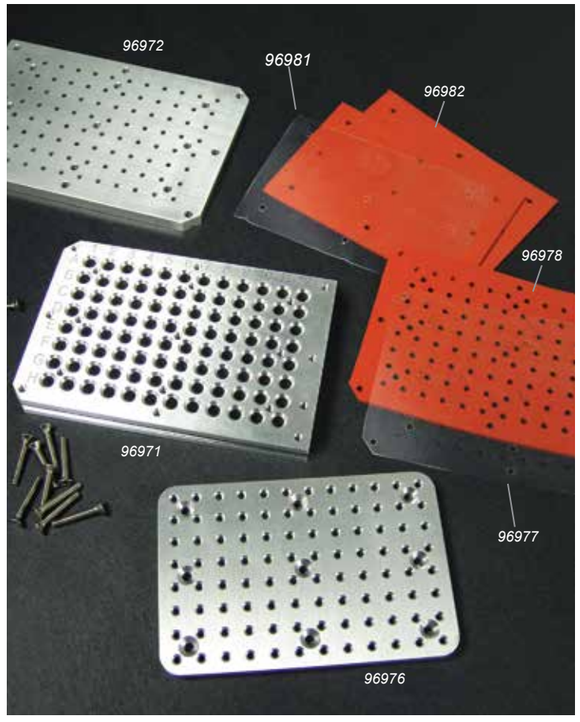
Cat. No.	Description	Qty
24250	Photoredox 24-Well Micro Block Assembly Includes Vial Rack, Bottom and Top Covers, PFA Sheets, Rubber Mats and Screws	Each
24251	24-Well Vial Rack for Photoredox Micro	Each
24252	Bottom Plate for Photoredox Micro	Each
24257	Bottom PFA Films	25
24258	Bottom Rubber Mats	25
24256	Top Cover for 24-Well Photoredox Micro	Each
24261	Top PFA Films for 24-Well Photoredox Micro	25
24262	Top Rubber Mats for 24-Well Photoredox Micro	25
1/2"SCREW96	1/2" Bottom Screws	100
1"SCREW	1" Top Screws	100

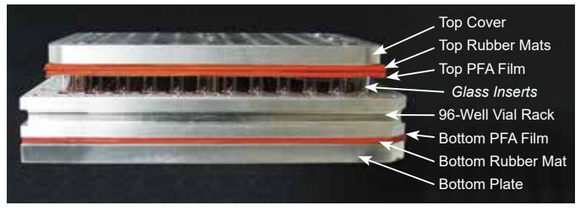
Accessories

Cat. No.	Description	Qty
10421-Case	Micro Vials - **50µL** Flat Bottom Glass Inserts, 4x21mm	1000
13257	Magnetic Tumble Stir Bars, 1.32mm x 1.57mm (Fleas)	1000
24245	Rack Adapter	Each



Both the 24-well and 96-well micro block systems will hold **50µL**, 4 x 21mm Micro Vial flat bottom glass inserts (*part no. 10421*).





Micro 96-Position Photoredox Reaction Block
for 50µL, 4x21mm Micro Vial Glass Inserts

- 4x21mm flat-bottom glass micro vials, **50µL** volume *(25µL maximum volume if using tumble stir bars)*

Cat. No.	Description	Qty
96970	Photoredox 96-Well Micro Block Assembly Includes Vial Rack, Bottom and Top Covers, PFA Sheets, Rubber Mats and Screws	Each
96971	96-Well Vial Rack for Photoredox Micro	Each
96972	Bottom Plate for Photoredox Micro	Each
96977	Bottom PFA Films	25
96978	Bottom Rubber Mats	25
96976	Top Cover for 96-Well Photoredox Micro, 6.35mm Thick, 2.54mm Holes	Each
96981	Top PFA Films for 96-Well Photoredox Micro	25
96982	Top Rubber Mats for 96-Well Photoredox Micro	25
1/2"SCREW96	1/2" Bottom Screws	100
1"SCREW	1" Top Screws	100

TECH NOTE:
Replace PFA Films with every use for best performance

Accessories

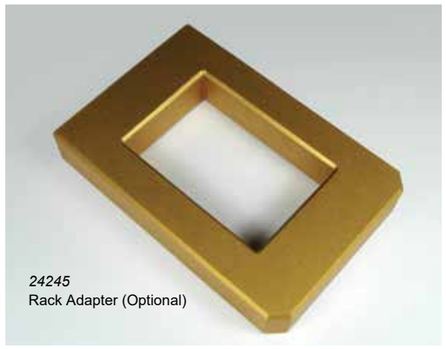
Cat. No.	Description	Qty
13257	Magnetic Tumble Stir Bars, 1.32mm x 1.57mm (Fleas)	1000
SD1000	Milwaukee M4 1/4in. Hex Screwdriver Kit. Includes 2 Batteries and Charger *(Note: batteries not available for international shipping)*	Each

Recommended for top performance!
Assembled 4x21mm Vials in Stackable Tray
- For easy loading - ***Saves Time!***
- Our thorough QC process ensures ***Less Evaporation*** compared to loose vials

Cat. No.	Description	Qty
96342	Assembled Stackable Tray Loaded with 4x21mm Flat-Bottom Vials (10421-CASE), Includes Tray and Vials	Each

Para-dox®
Photoredox Catalysis &
Parallel Synthesis Reaction Blocks

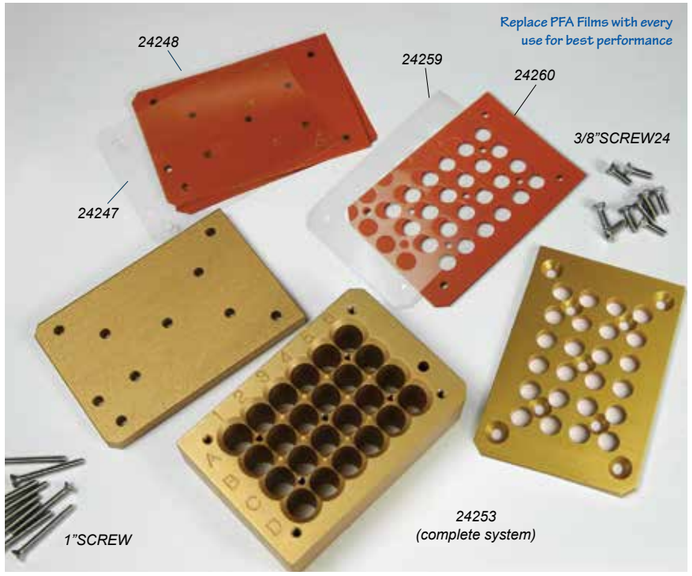
- Validated to have less than 5% solvent loss with prolonged heating above boiling point
- Temperature range -78ºC – 150ºC
- Quality Stirring with Tumble Stirring
- Silicone Rubber Mats provide compression sealing
- Teflon® PFA Films keep the glass reaction vials from sticking to the silicone rubber mats during heating



PRODUCT NOTE:

HTE (High Throughput Equipment) Kits are available (see website)

Standard 24-Position Photoredox Reaction Block
for 8x30mm, 1mL Glass Inserts

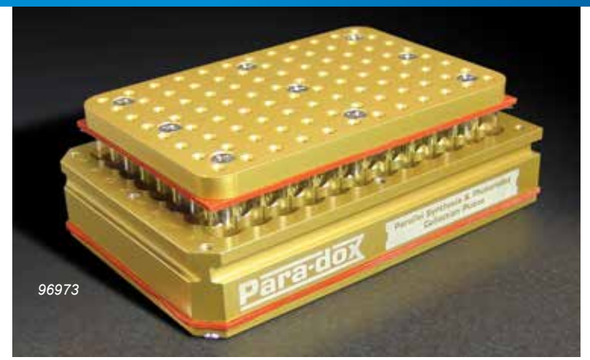


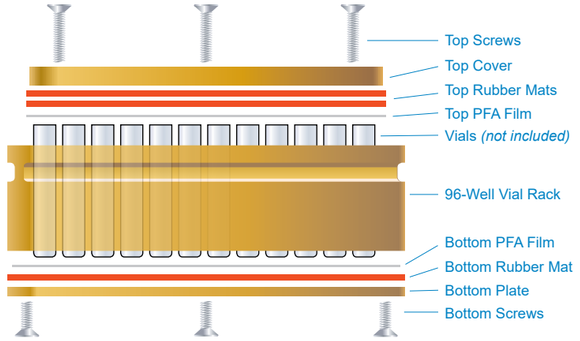
Cat. No.	Description	Qty
24253	Photoredox 24-Well Block Assembly - Includes Vial Rack, Top Cover, Bottom Cover, PFA Films, Rubber Mats, Screws	Each
24247	Replacement Top Films for 24 Position, Photoredox Block	25
24248	Replacement Top Mats for 24 Position, Photoredox Block	25
24259	Replacement Bottom Films for 24 Position, Photoredox Block	25
24260	Replacement Bottom Mats for 24 Position, Photoredox Block	25
3/8"SCREW24	3/8" Bottom Screws	100
1"SCREW	1" Top Screws	100
24245	Rack Adapter, Optional	Each

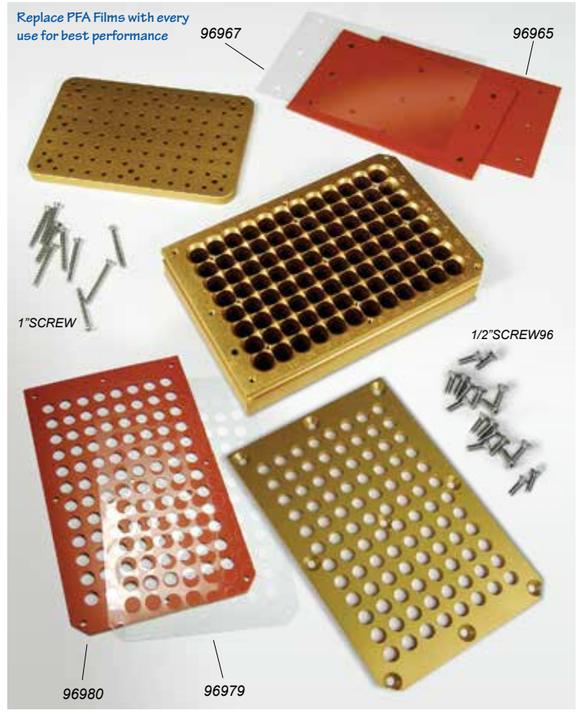
Accessories

Cat. No.	Description	Qty
84001-Case	**1mL** Clear Glass Shell Vials, 8 x 30mm	1000
13258	Stainless Steel Cylinder Stir Bars, 1.98mm x 4.80mm *(for 8x30mm Vials)*	1000
SD1000	Milwaukee M4 1/4in. Hex Screwdriver Kit. Includes 2 Batteries and Charger *(Note: batteries not available for international shipping)*	Each


SD1000 Battery Powered Screwdriver







Standard 96-Position Photoredox Reaction Block
for 8x30mm, 1mL Glass Inserts

Cat. No.	Description	Qty
96973	Photoredox 96-Well Block Assembly Includes: Vial Rack, Covers, Mats, Films and Screws	Each
96967	Replacement Top Films for 96-Well Photoredox Block	25
96965	Replacement Top Mats for 96-Well Photoredox Block	25
96979	Replacement Bottom Films for 96-Well Photoredox Block	25
96980	Replacement Bottom Mats for 96-Well Photoredox Block	25
1/2"SCREW96	1/2" Bottom Screws	100
1"SCREW	1" Top Screws	100

Accessories

Recommended for top performance!

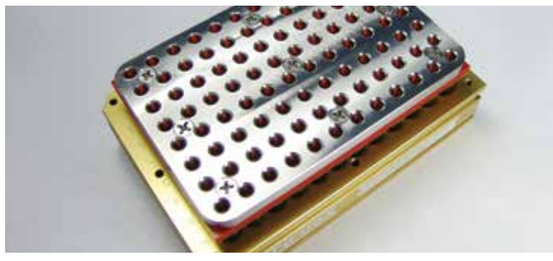
Assembled 8x30mm Vials in Stackable Tray

- For easy loading - ***Saves Time!***
- Our thorough QC process ensures ***Less Evaporation*** compared to loose vials

Cat. No.	Description	Qty
884001	Stackable Tray Loaded with 96 **8x30**mm Shell Vials (84001-CASE), Includes Tray and Vials	Each
884008	Stackable Tray Loaded with 96 **8x30**mm Crimp Top Vials (84008-CASE), Includes Tray and Vials	Each

See all vial loaders on page 39

Cat. No.	Description	Qty
13258	SS Cylinder Stir Bars, 1.98mm x 4.80mm *(for 8x30mm Vials)*	1000
SD1000	Milwaukee M4 1/4in. Hex Screwdriver Kit, includes 2 Batteries and Charger *(Note: batteries not available for international shipping)*	Each



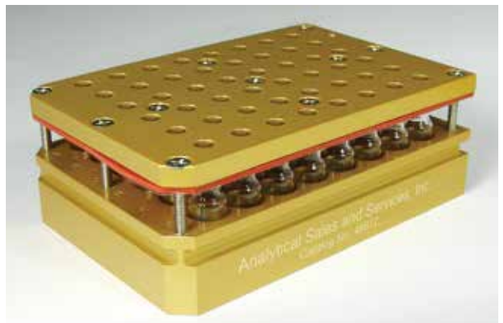
Top Cover with Wider Holes for 96-Well Reaction Blocks

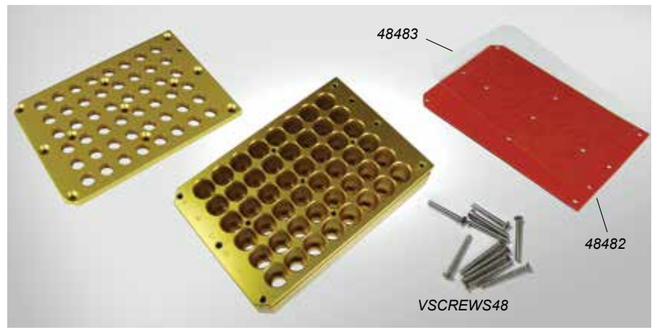
- Enlarged (4.3mm) Holes ***for Automated Sampling Instruments***
- 316 Stainless Steel

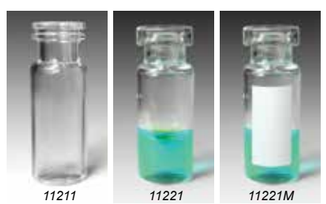
Cat. No.	Description	Qty
96985	Reaction Block Cover with Enlarged Holes, **6mm** Thickness	Each
96986	Reaction Block Cover with Enlarged Holes, **3mm** Thickness	Each

HPLC 48-Position Photoredox Reaction Block

for 12x32mm, 2mL Glass Vials

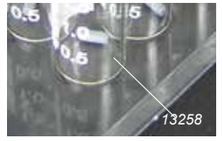






Use with 12 x 32mm vials, sold separately.

Cat. No.	Description	Qty
48612	48-Well **Open Top/Open Bottom** Aluminum Reaction Block for 12mm (2mL) OD Vials. Includes: Base Plate, Cover, Screws, PFA Film and 2 Rubber Mats	Each
48482	Rubber Mats for 48 Well (12mm OD) Reaction Blocks	25
48483	PFA films for 48 Well (12mm OD) Reaction Blocks	25
VSCREW48	1 1/4" Screws for 48-Well Aluminum Reaction Plate	100
11211-Case	11mm, 12 x 32, 2mL Wide Mouth Glass **Crimp/Snap** Vials	1000
11221-Case	11mm, 12 x 32, 2mL Wide Mouth Glass **Crimp** Vials	1000
11221M-Case	11mm, 12 x 32, 2mL Wide Mouth Glass **Crimp** Vials with Marking Spot	1000



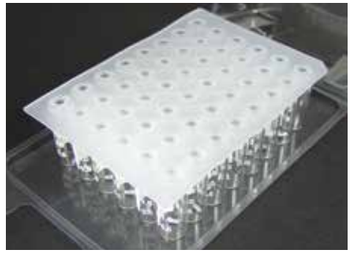
SS Cylinder Stir Bars for 2mL HPLC Vials

- Parylene Encapsulated
- For Photoredox and Parallel Synthesis Block Systems

Cat. No.	Description	Qty
13258	Stainless Steel Cylinder Stir Bars, 1.98mm x 4.80mm, for 2mL HPLC Vials	1000

Magnetic Stir Bars

Cat. No.	Description	Qty
50225	Magnetic Stir Bars, 5mm x 2mm, PTFE Coated	25
502100	Magnetic Stir Bars, 5mm x 2mm, PTFE Coated	100



48-Position Numbered Crimp Vial Assembly for Reaction Blocks

Cat. No.	Description	Qty
48221M	48-Well **Numbered** Crimp Vial Assembly. Includes: Vials (11221M) Marked 1-48; Stir Bar (13258) in Each Vial; 48-Well Cap Mat (99948)	Each

Cap Mat for HPLC (2mL) Vials in 48-Position Block

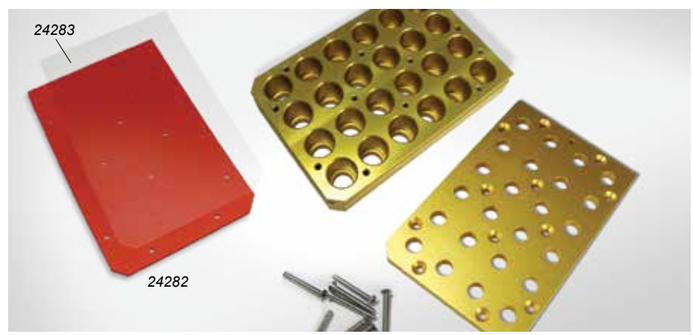
Cat. No.	Description	Qty
99948	Clear Silicone/PTFE Cap Mat for HPC Vials in 48-Position Reaction Block	5

NEW!

Gen II Para-dox Reaction blocks are now available. See page 6 for more information.

1 Dram 24-Position Photoredox Reaction Block

for 15x45mm, 4mL Glass Vials



31531

Use with 15 x 45mm vials, sold separately. See part number 31531-Case.

31554

Cat. No.	Description	Qty
24615	24-Well, Open Top/Open Bottom Aluminum Reaction Block for 15mm OD (1 Dram) Vials. 20mm spacing between well centers. Includes: Base Plate, Cover, Screws, PFA Film and 2 Rubber Mats	Each
24282	High-Temp Silicone/Rubber Cover for 24-Well Reaction Blocks for Vials	25
24283	PFA Film (0.005" Thick) for 24-Well Reaction Blocks for Vials	25
VSCREW24	1 3/4" Screws for 24-Well Aluminum Reaction Plate	100

Cat. No.	Description	Qty
31531-Case	Advantage™ 13mm, 15 x 45, 4mL Clear Glass Screw Vials, Case	1000
31554-Case	PTFE Lined Cap	1000

2 Dram 24-Position Photoredox Reaction Block

for 17x60mm, 8mL Glass Vials

31760

Use with 17 x 60mm vials, sold separately. See part number 31760-Case.

31542

Cat. No.	Description	Qty
24617	24-Well, **Open Top/Open Bottom** Aluminum Reaction Block for 17mm OD (2 Dram) Vials. 20mm spacing between well centers. Includes: Base Plate, Cover, Screws, PFA Film and 2 Rubber Mats	Each
24282	High-Temp Silicone/Rubber Cover for 24-Well Reaction Blocks for Vials	25
24283	PFA Film (0.005" Thick) for 24-Well Reaction Blocks for Vials	25
VSCREW24	1 3/4" Screws for 24-Well Aluminum Reaction Plate	100

Cat. No.	Description	Qty
31760-Case	Advantage™ 17 x 60mm, 8mL Clear Glass Screw Vials, Case	1000
31542-CASE	15mm Solid Black Polypropylene Screw Caps with PTFE/F217 Liners	1000
31543-CASE	Black Open Top PP Cap with PTFE/Silicone (0.065") Septa, 15-425mm Thread	1000

Para-dox®
Photoredox Catalysis &
Parallel Synthesis Reaction Blocks

24-Position Aluminum Reaction Blocks

- Useful for generating compound arrays (medicinal chemistry)
- Useful for conducting screening reaction conditions
- SBS plate format allows for use in multiple automation applications
- Can be used on tumble stirrers / hot plate stirrers / robotic platforms
- Can easily be used in a glovebox
- Sealed with/ PFA Film and Rubber Mats

1 Dram 24-Position Photoredox Reaction Block with 18mm Well Spacing
for 15x45mm, 4mL Vials


31531

Use with 15 x 45mm vials, sold separately. See part number 31531-Case.


31554

Cat. No.	Description	Qty
24626	24-Well Aluminum Reaction Block with 18mm spacing between well centers. For 15mm OD (1 Dram) Vials. Includes: Base Plate, Cover, Screws, PFA Film and 2 Rubber Mats	Each
24120	Silicone/Rubber Mats for 24 Well, 18mm Spacing Reaction Blocks	25
24121	PFA Films for 24 Well, 18mm Spacing Reaction Blocks	25
VSCREW24	1 3/4" Screws for 24-Well Aluminum Reaction Plate	100

Cat. No.	Description	Qty
31531-Case	Advantage™ 13mm, 15 x 45, 4mL Clear Glass Screw Vials, Case	1000
31554-Case	PTFE Lined Cap	1000

24-Well Reaction Block with Temperature Transfer Cover

The 24-well, 18mm well spaced Photoredox Reaction Block is also available with a **Temperature Transfer Cover** included. The cover replaces the rubber mat and PFA film, which is not included in this assembly. The cover is also available separately.

Cat. No.	Description	Qty
24627	24-Well Reaction Block with 18mm spacing between well centers. For 15mm OD (1 Dram) Vials. Includes: Base Plate, Temperature Transfer Cover and Screws	Each
24122	Temperature Transfer Cover for 24-Well Reactors with 18mm Well Spacing	Each

NEW!

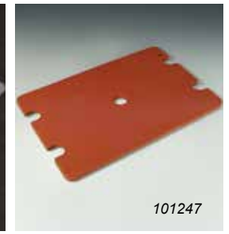
1 Dram 24-Position Photoredox Reaction Block with 18mm Well Spacing, Gen II
for 15x45mm, 4mL Vials

Benefits of Gen II Reactors

- Less bolts = less time to assemble
- Less Maintenance
- Port for thermocouple, sensors, etc.
- Corner holes on both the lid and the bottom for accessory attachment
- Longer lasting screws (larger diameter, larger threads)
- Larger holes in lid to accommodate a variety of needle sizes


101240


101248


101247


SHS0114

Catalog No.	Description	Qty
101240	5-Bolt, 24-Well Aluminum Reaction Block for 15x45mm (4mL) Vials. Includes: Base Plate, Cover, Screws, PFA Film and Rubber Mat	Each
101248	Top PFA Films for Gen II 24-Well Reactor (101240)	25
101247	Top Rubber Mats for Gen II 24-Well Reactor (101240)	25
SHS0114	Socket Head Screws for Gen II 24-Well Reactors and 96-Well Lightweight Reactors	5


LUM22418LA527


101240
LUM22418LA527

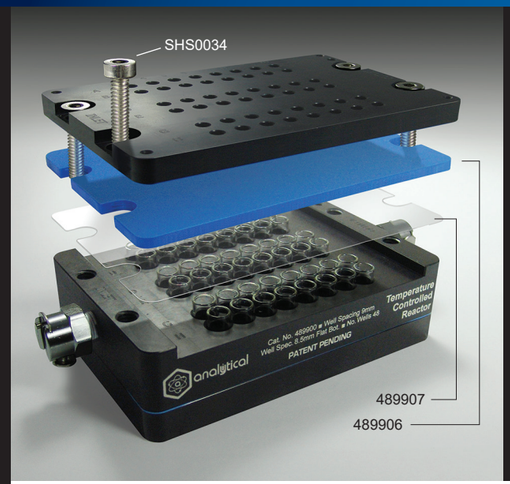
Lumidox® II 24-position LED Arrays with 18mm Spacing

Built specifically for use with our **Para-dox® 24-well, 18mm spaced Reactor Blocks**

See page 20 for more information about Lumidox® II

Wavelength (nm)	Description	Active Cooling Base Catalog No.	Flow-Through Base* Catalog No.	Solid Base* Catalog No.
UV365	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA365	LUM22418LF365	LUM22418LS365
UV375	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA375	LUM22418LF375	LUM22418LS375
UV385	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA385	LUM22418LF385	LUM22418LS385
UV395	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA395	LUM22418LF395	LUM22418LS395
UV405	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA405	LUM22418LF405	LUM22418LS405
420-VIOLET	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA420	LUM22418LF420	LUM22418LS420
445-INDIGO	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA445	LUM22418LF445	LUM22418LS445
470-BLUE	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA470	LUM22418LF470	LUM22418LS470
505-CYAN	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA505	LUM22418LF505	LUM22418LS505
527-GREEN	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA527	LUM22418LF527	LUM22418LS527
590-AMBER	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA590	LUM22418LF590	LUM22418LS590
630-RED	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA630	LUM22418LF630	LUM22418LS630
WHITE	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LAWHT	LUM22418LFWHT	LUM22418LSWHT

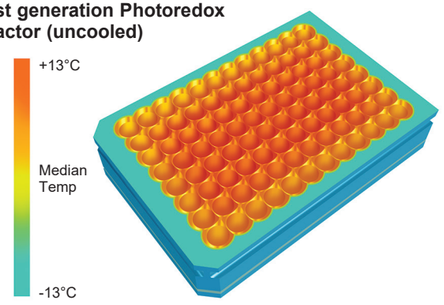
** requires the use of a sufficient chiller/cooling device*



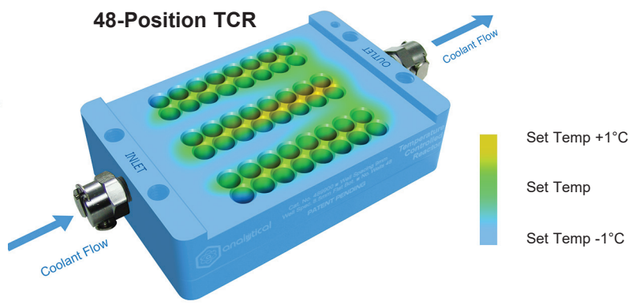
Temperature Controlled Reactors (TCR) for 8x30mm (1mL) and 15x45mm (1 Dram) Vials

- 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)
- Compatible with auto-samplers and high throughput chemistry devices
- 4mm holes in lid allow for use with most common autosampler needles
- Threaded holes (6-32) in lid for accessory attachment

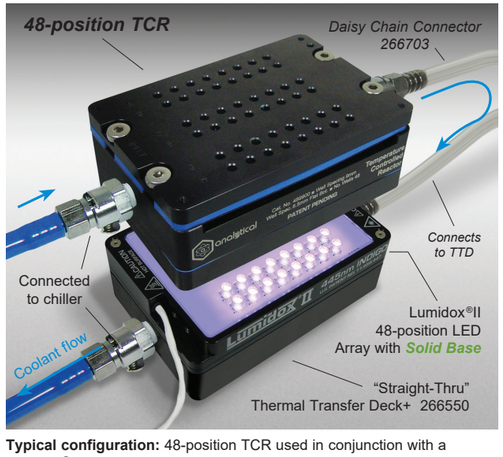
First generation Photoredox Reactor (uncooled)



48-Position TCR



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



Typical configuration: 48-position 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.

48-Position Temperature Controlled Reactor

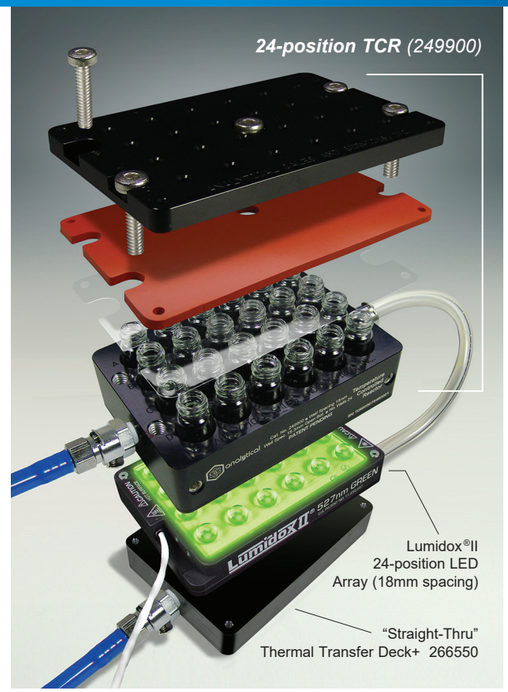
• For **8x30mm (1mL) Vials** • 48 Wells (6 Rows of 8) • 9mm Well Spacing

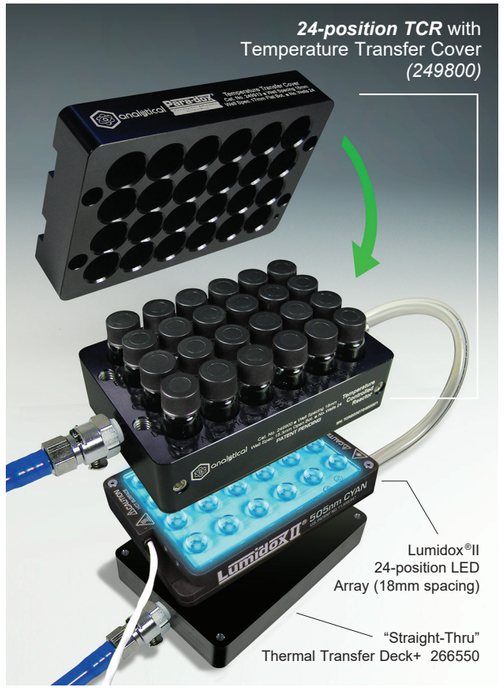
Cat. No.	Description	Qty
489900	**48-position TCR.** Includes: PFA Film, Blue Fluorosilicone Sealing Mat, Rubber Gasket, Silicone O-Rings, CPC Fittings, PUR Tubing and Screws.	Each
489906	1/8" Thick, Blue Fluorosilicone Rubber Sealing Mats for TCR	5
489907	0.005" Thick PFA Sealing Films for TCR	25
489908	9mm OD, 6mm ID, 1.5mm Wide Silicone O-rings for TCR	50
SHS0034	SS Low-Profile Socket Head Screw w/ Hex Drive, 5/16"-18 Threads, 3/4" Long	5
84001-Case	**1mL** Clear Glass Shell Vials, 8 x 30mm	1000
488401	Vial 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

Cat. No.	Wavelength	Cat. No.	Wavelength	Cat. No.	Wavelength
LUM248LS365	UV365	LUM248LS405	UV405	LUM248LS527	527-GREEN
LUM248LS375	UV375	LUM248LS445	445-INDIGO	LUM248LS590	590-AMBER
LUM248LS385	UV385	LUM248LS470	470-BLUE	LUM248LS630	630-RED
LUM248LS395	UV395	LUM248LS505	505-CYAN	LUM248LSWHT	WHITE





Screen & Scale-up with the Same Precision!

24-Position Temperature Controlled Reactor

• For **15x45mm (1 Dram) Vials**
• 24 Wells (4 Rows of 6)
• 18mm Well Spacing

Cat. No.	Description	Qty
249900	**24-position TCR.** Includes: PFA Film, Silicone Rubber Sealing Mat, Rubber Gasket, CPC Fittings, PUR Tubing, Screws. *Vials not included.*	Each
101247	Top Rubber Mats for Gen II 24-Position Reactors (with 18mm Spacing)	25
101248	Top PFA Films for Gen II 24-Position Reactors (with 18mm Spacing)	25
SHS0114	Socket Head Screws for Gen II 24-Position Reactors, 5/16"-18 Threads, 1-1/4" Long	5
31531-Case	13mm, 15 x 45mm, 4mL (1 Dram) Clear Glass Screw Vials	1000
31554-Case	13mm Black PP Solid Screw Caps with PTFE/F217 Liners	1000

Lumidox®II 24-position LED Array with 18mm Spacing, Solid Base

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

Cat. No.	Wavelength (nm)	Cat. No.	Wavelength (nm)
LUM22418LS365	UV365	LUM22418LS470	470-BLUE
LUM22418LS375	UV375	LUM22418LS505	505-CYAN
LUM22418LS385	UV385	LUM22418LS527	527-GREEN
LUM22418LS395	UV395	LUM22418LS590	590-AMBER
LUM22418LS405	UV405	LUM22418LS630	630-RED
LUM22418LS420	420-VIOLET	LUM22418LSWHT	WHITE
LUM22418LS445	445-INDIGO		

24-Position TCR with Temperature Transfer Cover

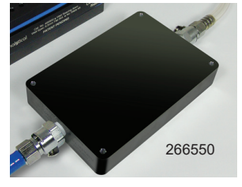
Perfect for those who prefer to cap their vials instead of sealing them with the standard aluminum lid, rubber mat and PFA film that come with the block assembly. When used in conjunction with a Thermal Transfer Deck+ (TTD+) and external liquid chiller, the cover helps control excessive heat generated by a Lumidox® II LED array and also greatly reduces light bleed.

The **Temperature Transfer Cover** is also available separately (249913) and can be used with other Para-dox® Gen II 24-position reactor blocks (18mm spacing) for photoredox and parallel synthesis.

Cat. No.	Description	Qty
249800	24-Position TCR with Temperature Transfer Cover	Each
249913	Temperature Transfer Cover for Gen II, 24-Position, 18mm Spacing Reactors	Each

Additional 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
TCubeEdge	Recirculating Chiller. Operating Range: 0°C - 65°C	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

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

Lumidox® II

Photon Generation Devices

For Photoredox Catalysis Applications

Taking advantage of recent breakthroughs in LED technology, Analytical now offers the next generation Lumidox® II with higher optical/radiometric power than ever before. Lumidox II offers a multitude of unique and complimenting photonic devices, in varying wavelengths, amplitudes and footprints.

The Lumidox II collection includes new LED Arrays with a wider range of options to choose. Also, check out our LumLamp for experimental applications. All of our Lumidox II illumination devices are controlled by the Lumidox II controller.

Lumidox® II Line of products:

- **96-position LED Arrays**
- **48-position LED Arrays for TCR** *(see page 17)*
- **24-position Arrays**
- **LumLamps**
- **Lumidox II Controller**
- **Cell Culture Plate Adapters for Lumidox II LED Arrays** *(see website)*

Key Features:

- **Reduces photochemical reaction time**
- **Up to 5 selectable output STAGES**
- **Up to 15 wavelengths available**
- **Higher optical/radiometric power than previous Lumidox line of products**
- **Patented LED array design**
- **Experiment with electro-photochemical reactions by pairing with HTe Chem Electrochemistry Assemblies** *(see page 30)*

Lumidox II Arrays and LumLamps are available in up to 15 wavelengths:

365 (UV365)	405 (UV405)	505 (Cyan)	660 (Deep Red)
375 (UV375)	420 (Violet)	527 (Green)	730-IR (Infrared)
385 (UV385)	445 (Indigo)	590 (Amber)	White
395 (UV395)	470 (Blue)	630 (Red)	

Analytical has also developed a myriad of compli-mentary apparatus that works with Lumidox. These range from SLAS cooling blocks to our new Temperature Controlled Reactors (TCR, page 16). We also offer high throughput electrochemical assemblies that can work with Lumidox to expand your experimentation into electro-photochemical reactions (see page 30).

Lumidox II Controller

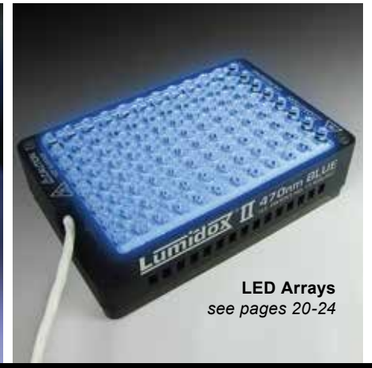
Lumidox® II Controller

- Controls the output of a Lumidox Array or LumLamp
- Select one of 5 levels of optical power (STAGES). STAGES are displayed in easy to read, easy to calculate whole numbers.
- Onboard illumination elapsed timer
- Automatic countdown shut-off timer
- **USB Enabled API** - for advanced users running their setups remotely

Catalog No.	Description
LUM2CON	Lumidox II LED Controller. Includes: Controller, Power Supply, Power Cable, Manual

Peripheral Devices

LumLamp
see page 29



LED Arrays
see pages 20-24

PRODUCT NOTE:

Arrays and LumLamps are tuned in-house. Calibration data is stored onboard (not on the controller), allowing the use of different illuminators with one controller. Note: the controller can operate different Lumidox devices, but only 1 device at a time.

LED Output STAGES

By default, all Lumidox II devices are factory calibrated with 5 discrete linearly stepped output STAGES. STAGE 1 output is the least radiometric power while STAGE 5 output is the most. STAGES are calibrated to the nearest whole number of radiant flux, and displayed in milliwatts (mW).

Linear Step (default)

STAGE 1 - 50mW
STAGE 2 - 100mW
STAGE 3 - 150mW
STAGE 4 - 200mW
STAGE 5 - 250mW

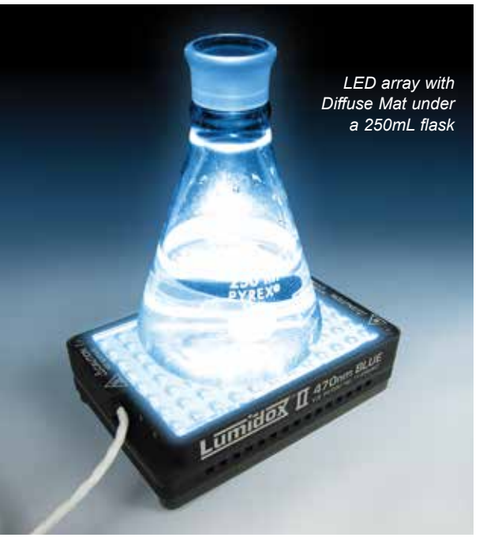
Custom LED Tuned STAGES

Analytical offers custom tuned stages to meet specific and unique requirements. These can range from maximum light output to low output to tight resolution.

NOTE: STAGE settings are stored on each individual Lumidox® II **peripheral** device (LED Array or Lumlamp), and are ***not tunable via the controller***. Custom STAGE settings can only be calibrated by Analytical Sales and Services prior to shipment. Please contact Analytical before ordering.

High Output (for more aggressive reactions)	**High Resolution** (for greater precision)	**Low Output** (good for cell culture and PCR)
STAGE 1 - 100mW	STAGE 1 - 100mW	STAGE 1 - 20mW
STAGE 2 - 200mW	STAGE 2 - 110mW	STAGE 2 - 40mW
STAGE 3 - 400mW	STAGE 3 - 115mW	STAGE 3 - 60mW
STAGE 4 - 600mW	STAGE 4 - 120mW	STAGE 4 - 80mW
STAGE 5 - 800mW	STAGE 5 - 125mW	STAGE 5 - 100mW

LED array with Lens Mat under a Para-dox® 96-well reaction block



LED array with Diffuse Mat under a 250mL flask

Lumidox® II LED Arrays

U.S. Patent No. 11,458,447

Our patented LED arrays provide wavelength and power specific illumination to samples for photoredox catalysis applications.

- **Up to 15 different color wavelengths are available***
- **5 output STAGES (customizeable) with calibration data stored on board****
- **Available in two Surface Mat styles**
- **Three options for Base configurations**

Radiant Flux Values per STAGE - Example

(typical values for 96-Position LED Arrays with **Active Cooling Base** and Lens Mat)

	STAGE 1		STAGE 2		STAGE 3		STAGE 4		STAGE 5	
Wavelength	Per well (mW)	Total (W)	Per well (mW)	Total (W)	Per well (mW)	Total (W)	Per well (mW)	Total (W)	Per well (mW)	Total (W)
UV365	25	2.4	55	5.3	80	7.7	105	10.1	135	13.0
UV375	25	2.4	50	4.8	75	7.2	110	10.6	140	13.4
UV385	30	2.9	65	6.2	100	9.6	145	13.9	165	15.8
UV395	30	2.9	65	6.2	105	10.1	140	13.4	170	16.3
UV405	25	2.4	60	5.8	90	8.6	125	12	160	15.4
420-Violet	30	2.9	60	5.8	90	8.6	120	11.5	150	14.4
445-Indigo	60	5.8	120	11.5	195	18.7	240	23.0	295	28.3
470-Blue	45	4.3	95	9.1	140	13.4	180	17.3	220	21.1
505-Cyan	35	3.4	65	6.2	90	8.6	115	11.0	135	13.0
527-Green	25	2.4	55	5.3	80	7.7	100	9.6	110	10.6
590-Amber	75	7.2	95	9.1	115	11.0	150	14.4	180	17.3
630-Red	30	2.9	55	5.3	85	8.2	115	11.0	145	13.9
660-Deep Red	40	3.8	70	6.7	105	10.1	140	13.4	170	16.3
IR730	35	3.4	65	6.2	95	9.1	125	12.0	155	14.9
White	50	4.8	100	9.6	150	14.4	200	19.2	300	28.8

Irradiance charts can be found on our website

** Most LED arrays (excluding Discovery, page 23) are wavelength-specific - only one wavelength per device*

*** Calibration data is stored onboard (not on the controller), allowing the use of different illuminators with one controller. Controller can only operate 1 device at a time. STAGE settings are NOT user-adjustable and must be configured prior to shipping*

Surface Mat Styles

Array top surfaces come in two styles, **Lens Mat** and **Diffuse Mat**.

Lens Mat Surface

- Ultra-clear, molded to fit into the holes of a Para-dox® Reaction Block
- Captures nearly all light emitted by the array's LEDs and directs it into the vials in the reaction block
- Chemically inert silicone

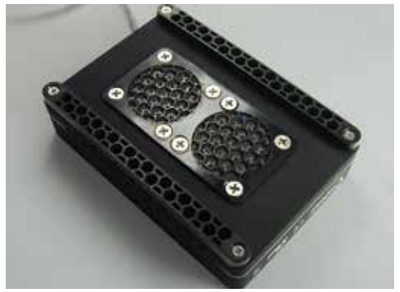
Diffuse Mat Surface

- Flat surface, making for easy pairing with SLAS footprint apparatus
- Can be used for niche applications such as illuminating cell culture flasks, reservoir plates, large scale containers, etc.
- Chemically inert silicone

About Array Cooling and Base Options

Lumidox® II LED Arrays can generate a considerable amount of heat at any output stage and therefore need to be cooled. Both **Lens Mat and Diffuse Mat** style arrays are available with an **Active Cooling** base, **Solid** base or **Flow-Through** base. Each has it's own specific way of cooling the LEDs in the array and can affect different application situations. *Note: solid and flow-through base arrays are not self-cooling and require the use of a sufficient external chiller/cooling device.*

Active Cooling Base
(underside shown)



Solid Base
(shown with Thermal Transfer Deck)

Flow-Through Base
(connects directly to chiller)

Array Base Comparison

Active Cooling Base
(self-cooling)

Active Cooling Base:

- Self-cooling, no external cooling source required
- Fully conforms to SLAS/ANSI standard dimensions
- Ideal for lower output applications like cell culture and PCR work *(may require special adapter)*
- Not compatible with tumble stirrers or devices that generate powerful magnetic fields

Solid Base
Nearly 3x the radiometric power output of Active Cooling Base arrays
(external cooling source required)

Solid Base:

- External cooling source is required *(a Thermal Transfer Deck with a recirculating liquid chiller is recommended)*
- A Thermal Transfer Deck (TTD) can be attached to the base when used in conjunction with a recirculating chiller. The TTD can be removed if using a different cooling source, such as a cooling bay
- Fully conforms to SLAS/ANSI standards and can be used with cooling baths, plates, or other cooling chamber *(if NOT being used with our Thermal Transfer Deck and recirculating liquid chiller)*
- Ideal for applications requiring high output - up to nearly 3x more radiometric power output than Active Base arrays*

Flow-Through Base
Nearly 3x the radiometric power output of Active Cooling Base arrays
(connection to circulating liquid chiller required)

NEW! Flow-Through Base:

- Direct connection to recirculating liquid chiller (required). Cooled liquid flows through the array base itself *(no need for Thermal Transfer Deck)*
- Ideal for applications requiring high output - up to nearly 3x more radiometric power output than Active Base arrays*
- Light Weight – improved usability with orbital shakers due to lower overall mass
- Shorter overall height than active base array – offers improved compatibility with tumble stirrers (less distance between stirrer and sample)

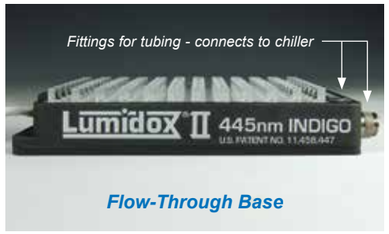
* For comparison, Radiant Flux Value charts for Active Cooling Base and Solid/Flow-through Base Arrays are posted on our website.

Note: All LED arrays can operate in an incubator at 37ºC, 95% humidity

96-Position LED Arrays

Active Cooling Base

Solid Base



Flow-Through Base

96-Position LED Arrays with **Lens Mat**

Wavelength (nm)	Description	Active Cooling Base Catalog No.	Flow-Through Base* Catalog No.	Solid Base* Catalog No.
UV365	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA365	LUM296LF365	LUM296LS365
UV375	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA375	LUM296LF375	LUM296LS375
UV385	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA385	LUM296LF385	LUM296LS385
UV395	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA395	LUM296LF395	LUM296LS395
UV405	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA405	LUM296LF405	LUM296LS405
420-VIOLET	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA420	LUM296LF420	LUM296LS420
445-INDIGO	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA445	LUM296LF445	LUM296LS445
470-BLUE	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA470	LUM296LF470	LUM296LS470
505-CYAN	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA505	LUM296LF505	LUM296LS505
527-GREEN	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA527	LUM296LF527	LUM296LS527
590-AMBER	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA590	LUM296LF590	LUM296LS590
630-RED	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA630	LUM296LF630	LUM296LS630
660-DEEP RED	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA660	LUM296LF660	LUM296LS660
730-IR	Lumidox II 96-Position LED Array with Lens Mat	LUM296LA730	LUM296LF730	LUM296LS730
WHITE	Lumidox II 96-Position LED Array with Lens Mat	LUM296LAWHT	LUM296LFWHT	LUM296LSWHT

** requires the use of a sufficient chiller/cooling device*

See pages 20-21 for details on surface mats and bases

Active Cooling Base

Solid Base

Flow-Through Base

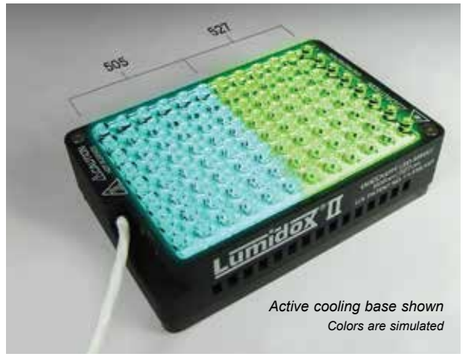
96-Position LED Arrays with **Diffuse Mat**

Wavelength (nm)	Description	Active Cooling Base Catalog No.	Flow-Through Base* Catalog No.	Solid Base* Catalog No.
UV365	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA365	LUM296DF365	LUM296DS365
UV375	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA375	LUM296DF375	LUM296DS375
UV385	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA385	LUM296DF385	LUM296DS385
UV395	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA395	LUM296DF395	LUM296DS395
UV405	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA405	LUM296DF405	LUM296DS405
420-VIOLET	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA420	LUM296DF420	LUM296DS420
445-INDIGO	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA445	LUM296DF445	LUM296DS445
470-BLUE	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA470	LUM296DF470	LUM296DS470
505-CYAN	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA505	LUM296DF505	LUM296DS505
527-GREEN	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA527	LUM296DF527	LUM296DS527
590-AMBER	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA590	LUM296DF590	LUM296DS590
630-RED	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA630	LUM296DF630	LUM296DS630
660-DEEP RED	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA660	LUM296DF660	LUM296DS660
730-IR	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DA730	LUM296DF730	LUM296DS730
WHITE	Lumidox II 96-Position LED Array with Diffuse Mat	LUM296DAWHT	LUM296DFWHT	LUM296DSWHT

** requires the use of a sufficient chiller/cooling device*

Active cooling base shown
Colors are simulated (UV light is invisible)

Active cooling base shown
Colors are simulated (UV light is invisible)



Active cooling base shown
Colors are simulated

96-Well Single Wavelength Array with Lens Mat

*Solid base shown**

Discovery/Screening 96-Position LED Arrays

Lumidox® II Discovery LED Arrays for screening offer scientists an economical and efficient way to evaluate most of the wavelengths that the Lumidox II line of products has to offer. Discovery LED arrays come in varying wavelength combinations and are available with an active cooling, solid or flow-through base.

There are currently 15 wavelength options available in the Lumidox II product line. With Discovery LED arrays, 9 of those wavelengths are combined into 3 units (no need to purchase 9 individual units). The three models of Discovery LED arrays come in these wavelength combinations:

- **Discovery 1** (3 UVs):
  375nm, 385nm, 395nm *(4 columns of 8 LEDs / wavelength)*
- **Discovery 2** (UV405, Indigo, Blue & Amber):
  405nm, 445nm, 470nm, 590nm *(3 columns of 8 LEDs / wavelength)*
- **Discovery 3** (Cyan, Green): 505nm, 527nm *(6 columns of 8 LEDs / wavelength)*

The six remaining wavelengths in the Lumidox II line - UV365, 420-VIOLET, 630-RED, 660-DEEP RED, 730-IR, and White - are not compatible for placement in Discovery LED arrays due to varying electrical conditions. They can, however, be purchased as single wavelength units to complete your LED array collection.

96-Position Discovery LED Arrays with **Lens Mat**

Wavelength (nm)	Description	Active Cooling Base Catalog No.	Flow-Through Base* Catalog No.	Solid Base* Catalog No.
UV375 UV385 UV395	Discovery 1 LED Array w/ Lens Mat *(4 rows of 8 LEDs per wavelength)*	LUM296LAG1	LUM296LFG1	LUM296LSG1
UV405 445-INDIGO 470-BLUE 590-AMBER	Discovery 2 LED Array w/ Lens Mat *(3 rows of 8 LEDs per wavelength)*	LUM296LAG2	LUM296LFG2	LUM296LSG2
505-CYAN 527-GREEN	Discovery 3 LED Array w/ Lens Mat *(6 rows of 8 LEDs per wavelength)*	LUM296LAG3	LUM296LFG3	LUM296LSG3
Single Wavelength LED Arrays				
UV365	96-Position LED Array w/ Lens Mat	LUM296LA365	LUM296LF365	LUM296LS365
420-VIOLET	96-Position LED Array w/ Lens Mat	LUM296LA420	LUM296LF420	LUM296LS420
630-RED	96-Position LED Array w/ Lens Mat	LUM296LA630	LUM296LF630	LUM296LS630
660-DEEP RED	96-Position LED Array w/ Lens Mat	LUM296LA660	LUM296LF660	LUM296LS660
730-IR	96-Position LED Array w/ Lens Mat	LUM296LA730	LUM296LF730	LUM296LS730
WHITE	96-Position LED Array w/ Lens Mat	LUM296LAWHT	LUM296LFWHT	LUM296LSWHT

** requires the use of a sufficient chiller/cooling device*

Thermal Transfer Decks

See page 25 for more information

Cat. No.	Description
266530	SLAS Thermal Transfer Deck (TTD)
266540	TTD+ (Thermal Transfer Deck with High-end Fittings)
266550	SLAS Footprint, “Straight-Thru” Thermal Transfer Deck


266540

Lumidox II 24-Position LED Arrays are available in the these wavelengths:

365 (UV365)	395 (UV395)	470 (Blue)	590 (Amber)
375 (UV375)	405 (UV405)	505 (Cyan)	630 (Red)
385 (UV385)	445 (Indigo)	527 (Green)	White

Lumidox® II 24-position LED Arrays with 9mm Spacing

- Typically used with a Para-dox® 24-well Reaction Block for 8x30mm vial inserts *(see page 10)*
- Can also be used with a HTe-Chem Electrochemistry Assembly (*see page 30)*

Wavelength (nm)	Description	Active Cooling Base Catalog No.	Flow-Through Base* Catalog No.	Solid Base* Catalog No.
UV365	24-Well LED Array with 9mm Spacing, Lens Mat	LUM224LA365	LUM224LF365	LUM224LS365
UV375	24-Well LED Array with 9mm Spacing, Lens Mat	LUM224LA375	LUM224LF375	LUM224LS375
UV385	24-Well LED Array with 9mm Spacing, Lens Mat	LUM224LA385	LUM224LF385	LUM224LS385
UV395	24-Well LED Array with 9mm Spacing, Lens Mat	LUM224LA395	LUM224LF395	LUM224LS395
UV405	24-Well LED Array with 9mm Spacing, Lens Mat	LUM224LA405	LUM224LF405	LUM224LS405
445-INDIGO	24-Well LED Array with 9mm Spacing, Lens Mat	LUM224LA445	LUM224LF445	LUM224LS445
470-BLUE	24-Well LED Array with 9mm Spacing, Lens Mat	LUM224LA470	LUM224LF470	LUM224LS470
505-CYAN	24-Well LED Array with 9mm Spacing, Lens Mat	LUM224LA505	LUM224LF505	LUM224LS505
527-GREEN	24-Well LED Array with 9mm Spacing, Lens Mat	LUM224LA527	LUM224LF527	LUM224LS527
590-AMBER	24-Well LED Array with 9mm Spacing, Lens Mat	LUM224LA590	LUM224LF590	LUM224LS590
630-RED	24-Well LED Array with 9mm Spacing, Lens Mat	LUM224LA630	LUM224LF630	LUM224LS630
WHITE	24-Well LED Array with 9mm Spacing, Lens Mat	LUM224LAWHT	LUM224LFWHT	LUM224LSWHT

** requires the use of a sufficient chiller/cooling device*

See pages 20-21 for details on surface mats and bases

LUM22418LA527


101240
LUM22418LA527

Lumidox® II 24-position LED Arrays with 18mm Spacing

Built specifically for use with our **Para-dox® 24-well, 18mm spaced Reactor Blocks**

See page 14 for more information

Wavelength (nm)	Description	Active Cooling Base Catalog No.	Flow-Through Base* Catalog No.	Solid Base* Catalog No.
UV365	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA365	LUM22418LF365	LUM22418LS365
UV375	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA375	LUM22418LF375	LUM22418LS375
UV385	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA385	LUM22418LF385	LUM22418LS385
UV395	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA395	LUM22418LF395	LUM22418LS395
UV405	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA405	LUM22418LF405	LUM22418LS405
420-VIOLET	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA420	LUM22418LF420	LUM22418LS420
445-INDIGO	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA445	LUM22418LF445	LUM22418LS445
470-BLUE	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA470	LUM22418LF470	LUM22418LS470
505-CYAN	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA505	LUM22418LF505	LUM22418LS505
527-GREEN	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA527	LUM22418LF527	LUM22418LS527
590-AMBER	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA590	LUM22418LF590	LUM22418LS590
630-RED	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LA630	LUM22418LF630	LUM22418LS630
WHITE	24-Well LED Array with 18mm Spacing, Lens Mat	LUM22418LAWHT	LUM22418LFWHT	LUM22418LSWHT

** requires the use of a sufficient chiller/cooling device*

266530

266540

TECH NOTE:

If using in conjunction with a Flow Reactor (page 28), a Thermal Transfer Deck with High-end Fittings (TTD+) must be used

266550

Cat. No.	Description	Qty
266530	SLAS Thermal Transfer Deck (TTD)	Each
266540	TTD+ (Thermal Transfer Deck with High-end Fittings)	Each
266550	SLAS Footprint, "Straight-Thru" Thermal Transfer Deck+ (Thermal Transfer Deck with High-end Fittings)	Each

Thermal Transfer Decks

- **Must be used with a recirculating liquid chiller or heater**
- **Can be attached to a Lumidox® II solid base LED arrays for direct cooling of the array**

When connected to an *external* recirculating liquid chiller or heater, our Thermal Transfer Decks can be used as both chilling plates or hot plates. Apply heat or cold directly to your samples or sample vessels (such as Para-dox® Reaction Blocks), or use it to cool your Lumidox® II solid base LED array.

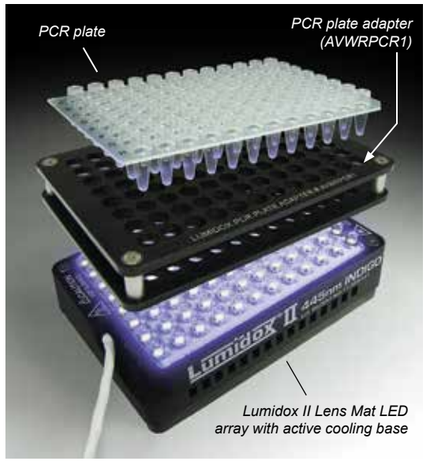
Thermal Transfer Decks may be linked in novel ways to form gradients, or to serve other more experimental needs. Push-to-connect fittings allow for quick tubing insertion/removal. Input and Output ports are user configurable, and may be relocated between side and top faces*. Units are shipped with side exit ports as standard. Decks are stackable, and multiple decks can be chained together for a total temperature control solution. Compatible with a wide variety of coolants (water, propylene glycol, ethylene glycol, etc.).

** Ports are not user configurable on the Straight-Thru TTD*

Attach a Thermal Transfer Deck+ to a Lumidox II SOLID BASE LED Array for direct cooling of the array

Use an additional TTD+ to transfer heat or cold directly to your reaction block samples

PCR & Cell Culture Plates, LED Arrays & Adapters
Photoredox Catalysis



Lumidox / PCR Setup

Lumidox / Cell Culture Setup

Lumidox® II for Cell Culture / Biological Applications

We can support your photon irradiation needs for your cell culture or biological applications, such as:

- Photoconverting live mammalian cells with Dendra protein for fluorescent imaging days after photoconversion
- Testing of light-induced toxicity of certain compounds on different cell lines for photodynamic therapy applications
- Studying the photothermal effects of compounds in live cells
- Testing photodynamic therapy of various innovative compounds on live cells
- The use of photodynamic therapy as a type of cancer treatment

Lumidox II LED Arrays with Active Cooling Base

Lumidox II LED arrays generate wavelength specific light for your cell culture or biological experimentation.

- Available in 15 wavelengths from UV, Visible through IR.
- Run at 37°C indefinitely (70°C max) at humidity <=99%.
- Active Cooling Base LED arrays are fully compatible with incubation chambers.
- Use **Lens Mat** Arrays for 24 or 96 well flat bottom collection plates, or with Analytical's 48-well TCR.
- Use **Diffused Mat** Arrays for cell culture flasks, petri dishes, larger 12-well and 6-well cell culture plates, etc..
- Active Cooling Base arrays are recommended for bio/cell culture work, but other base configurations are available.

Cell Culture Plate Adapters

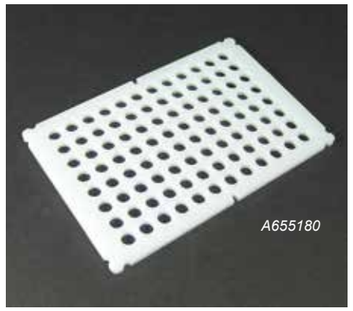
These adapters are designed for **Lens Mat** arrays *(not compatible with diffuse mat arrays)*. Plate specific adapters are currently available for 24 and 96-well cell culture plates. They provide consistent and proper alignment of the plate to the LED array. We currently produce adapters for the following plates:

- All our Low Profile collection plates
- Cellvis P96-1.5H-N
- Greiner 655180
- Corning Costar cell culture plates
- Eppendorf cell culture plates (contact us with your specific plate)
- Thermo Scientific Nunc MicroWell plates
- Perkin Elmer ViewPlate (formerly Packard ViewPlate)

Adapters are available for any standard cell culture plate by request.

Lumidox® II Controller

- Five stages of light intensity to choose from that can be calibrated to your custom levels at the time of purchase - *see STAGE settings, page 19.*
- Controller has an onboard timer to reproducibly limit exposure.



***24 well setup** with Lumidox 24-well LED Array - See page 24 for array options*

Lumidox® II LED Arrays with Active Cooling Base

Recommended wavelengths for biological and cell culture work. Other wavelengths are available.

Catalog No.	Description	Wavelength
LUM296LA445	Lumidox® II 96-position LED Array with Lens Mat & Active Cooling Base	445nm - Indigo
LUM296LA470	Lumidox® II 96-position LED Array with Lens Mat & Active Cooling Base	470nm - Blue
LUM296LA527	Lumidox® II 96-position LED Array with Lens Mat & Active Cooling Base	527nm - Green
LUM296LA630	Lumidox® II 96-position LED Array with Lens Mat & Active Cooling Base	630nm - Red
LUM296LA660	Lumidox® II 96-position LED Array with Lens Mat & Active Cooling Base	660nm - Deep Red
LUM296LAWHT	Lumidox® II 96-position LED Array with Lens Mat & Active Cooling Base	White

Cell Culture Plate Adapters

Catalog No.	Description
A655180	Adapter for Lumidox II LED Arrays, for use with Greiner 655180 Plate
AP9615HN	Adapter for Lumidox II LED Arrays, for use with Cellvis P96-15H-N Well Plates
A204625	Adapter for Lumidox II LED Arrays, for use with Cell Culture Plate Part # 96624
A204627	Adapter for Lumidox II LED Arrays, for use with Cell Culture Plate Part # 96626
ACRCLP01	Adapter for Lumidox II LED Arrays, for use with Corning Cell Culture Plates
A6005430	Adapter for Lumidox II LED Arrays, for use with Perkin Elmer ViewPlate (Packard ViewPlate)
A204628	Adapter for Lumidox II LED Arrays, for use with Cell Culture Plate Part # 384628
ACRCLP03	Adapter for Lumidox II LED Arrays, for use with Corning 2592 Plate
ACRCLP02	Adapter for Lumidox II LED Arrays, for use with Corning 3631 Plate
A655097	Adapter for Lumidox II LED Arrays, for use with Greiner 655097 Plate
AT11028	Adapter for Lumidox II 24-position LED Arrays, for use with 24 Deep Well Plate #24128

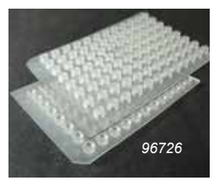
Cell Culture Plates

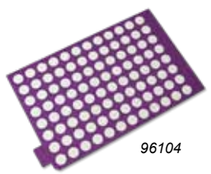
Catalog No.	Description	QTY
96624	96-well Cell Culture/Imaging Microplate (Agilent) - Clear with Flat Bottom, 400µL Per Well	40
96518	96 Well, Flat Bottom Clear PS Microplate, 25-340µL working volume per well	100
96626	96-well Cell Culture/Imaging Microplate (Agilent) - Black with Clear Flat Bottom, 400µL Per Well	32
961515	Cellvis 96-well Black Polystyrene/Glass Bottom Plate with high performance #1.5 cover glass	20
96097	96 Well, Black/Clear Flat Bottom Well PS Microplate, 25-340µL working volume per well, high binding, sterile	40
384628	384-well Cell Culture/Imaging Microplate, 140µL Per Well	32
24128	24 Deep Well Plate, V-Bottom	50

Please see our website or catalog for additional collection plates

PCR Plate Adapter

Catalog No.	Description
AVWRPCR1	PCR Plate Adapter for Lumidox®II 96-position LED Lens Mat Arrays





Cap Mats and Films for PCR Plates

Cat. No.	Description	QTY
96726	6mm Silicone/PTFE Cap Mats for 96-well PCR Collection Plates	5
96104	Pattern Adhesive *Resealable* Silicone Sealing Film, Round 96-Well Pattern	5

266100
Flow Reactor

Flow Reactor

The Para-dox® Flow Reactor offers an alternative way to conduct photoreactive research on fluidic samples. Used in conjunction with a Lumidox®II Diffuse Mat Array, wavelength-specific light can be applied to sample fluid circulating through 1/8” OD tubing. The Flow Reactor can be liquid cooled or heated and is highly configurable. Add a Thermal Transfer Deck for a complete flow solution.

Users may configure the Flow Reactor in various ways, including multiple input streams using the machined channels. Tubing can be replaced and installed by the user with a tubing tamp tool.

- SLAS/SBS footprint
- Dripless CPC fittings
- 1/8″ OD unions for ease of analyte injection
- User-configurable output/input locations, side or top (factory set to side).
- Exposure volume of 2mL using 1/8″ OD, 1/16” ID tubing. The exposure volume may be set to 1mL if two streams are used.
- FEP Tubing Provided
- Cradled design reduces light bleed and helps “seat” and align Lumidox unit
- Compatible with water, glycol based coolants, and silicone based coolants

Flow Reactor

Catalog No.	Description	Qty
266100	Flow Reactor	Each

Recommended chiller:

Cat. No.	Description	Qty
TCube Edge	TCube Edge Chiller	Each

Single Stream Setup

Multistream Setup

Lumidox®II Diffuse Mat Array placement

Flow Reactor (top) paired with a Lumidox®II Diffuse Mat Array (middle) and Para-dox® Thermal Transfer Deck+ (bottom)

A lamp system specifically designed for your experimental needs!

LumLamp

The LumLamp system stands apart with multiple wavelengths, tight line-widths, and remote (corded) operation. It has radiant flux levels up to 3W. LumLamps are directly controlled with our Lumidox® II Controller, providing optical stability, user configurable timing and output configuration.

With 4 differing reflector types, 3 styles of lens, and up to 12 wavelengths, LumLamp is available in 104+* possible configurations.

Lens Types:

Reflector Types:

15º Narrow Spot Beam	30º Medium Beam
40º Wide Beam	80º Extra Wide Beam

LumLamps are available in the following wavelengths:

365 (UV365)	395 (UV395)	470 (Blue)	590 (Amber)
375 (UV375)	405 (UV405)	505 (Cyan)	630 (Red)
385 (UV385)	445 (Indigo)	527 (Green)	White

** Contact us for custom wavelengths*

Lumidox® II Controller

- Controls the output of a Lumidox Array or LumLamp
- 5 individually calibrated levels of optical power (STAGES)
- Optical power levels are provided in easy to read, easy to calculate whole numbers
- Onboard illumination elapsed timer
- Automatic countdown shut off timer
- **USB Enabled API** - for advanced users running their setups remotely

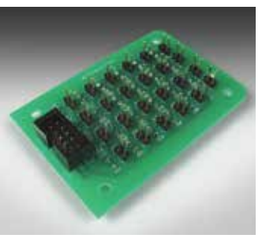
Lumidox II LED Controller

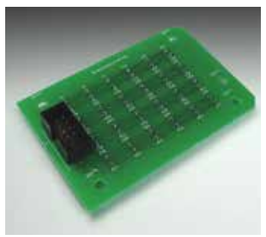
Catalog No.	Description	Qty
LUM2CON	Lumidox II LED Controller. Includes: Controller, Power Supply, Power Cable, Manual	Each

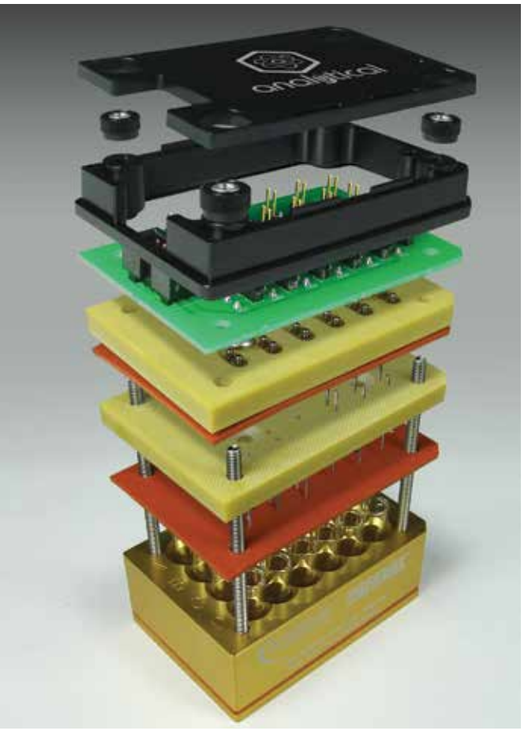
Lumidox Controllers come with one pair of UV protective goggles. Additional goggles can be purchased.

UV Safety Goggles

Catalog No.	Description	Qty
UVGoggles	Additional UV Safety Goggles	Each







HTe⁻Chem Electrochemistry Assemblies

Analytical Sales' new **HTe⁻Chem** line of products allows for broad electrochemical reactions (such as electrosynthesis, organic electrochemistry, electrophotochemistry, etc.) to be carried out on Analytical Sales standard 24-well minirack platform. HTe⁻Chem allows you to accelerate your electrochemistry workflow by permitting multiple simultaneous constant current, constant voltage, and/or electrophotochemical experiments to be run.

There are two optimized setups to choose from:

The **constant current** setup allows the user to set a precise current, which will be maintained by the power supply throughout the reaction. The voltage will automatically be varied based on the changing electrical conditions as the reaction progresses.

The **constant voltage** setup allows the user to set a precise voltage, which will be maintained by the power supply throughout the reaction. In this setup, the current will automatically be varied based on the changing electrical conditions as the reaction progresses.

HTe⁻Chem Assemblies & Kits

Cat. No.	Description	Qty
700100	Constant Current Electrochemistry Assembly	Each
700150	Constant Current Electrochemistry Kit (Includes Electrode Kit)	Each
700200	Constant Voltage Electrochemistry Assembly	Each
700250	Constant Voltage Electrochemistry Kit (Includes Electrode Kit)	Each

Electrodes for HTe⁻Chem Assemblies

Analytical Sales offers a myriad of electrode choices which can be used as either cathodes or anodes depending on your experimental needs.

Cat. No.	Description	Qty
700500	Graphite Electrodes	30
700500-250	Graphite Electrodes - Bulk Pack	250
700550	Tin Electrodes	25
700575	Cadmium Electrodes	25
700600	Zinc Electrodes	25
700600-250	Zinc Electrodes - Bulk Pack	250
700650	Platinum Electrodes	25
700656	Platinum Electrodes - Row Pack	6
700675	Iron Electrodes	25
700700	Stainless Steel Electrodes	25
700700-250	Stainless Steel Electrodes - Bulk Pack	250
700725	Cobalt Electrodes	25
700750	Nickel Electrodes	25
700800	NiChrom Electrodes	25
700800-250	NiChrom Electrodes - Bulk Pack	250
700850	Copper Electrodes	25
700900	Aluminum Electrodes	25
700950	Magnesium Electrodes	25
700400	Electrode Kit. Includes One Pack of Each of Graphite, Zinc, Stainless Steel, Nickel, NiChrom, Aluminum, Copper and Magnesium Electrodes (platinum not included)	Each

700500

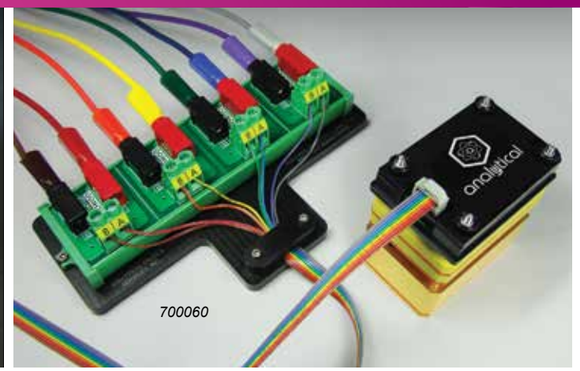
700850

700900

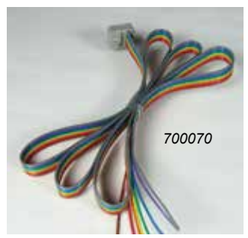
700950

Check website for the latest selection of electrodes


700050



700060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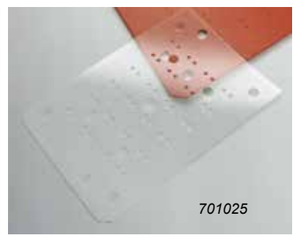
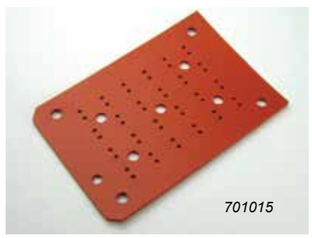
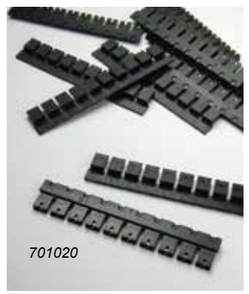

701025

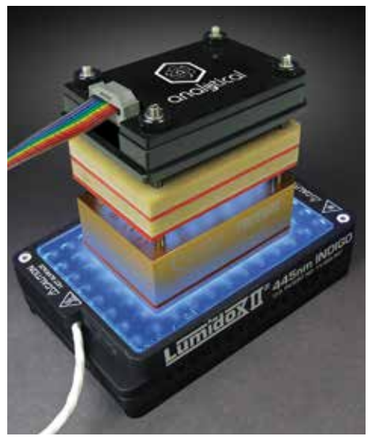

701015


701005


701020

Power Supply and Accessories

Cat. No.	Description	Qty
700050	Calibrated DC Power Supply, 4 Output Multi Range, 420W Combined Output	Each
700060	Breakout Cable Assembly, for use with Calibrated DC Power Supply	Each
700070	Ribbon Cable (if using alternate power supply)	Each
701020	Replacement PCB Jumpers (for constant current setup)	100
701015	Upper Gasket *(recommended: replace after 3-5 uses)*	5
701005	Lower Gasket *(recommended: replace after 3-5 uses)*	5
701025	PFA Sheet for HTe⁻Chem Assembly *(recommended: replace after every use)*	25
24260	Bottom Rubber Mats	25
84001-CASE	1mL Clear Glass Shell Vial	1000



LED array with active cooling base shown

For experimentation with electrophotochemical reactions, HTe⁻Chem assemblies are fully compatible for use with Lumidox®II 24-well, 9mm spaced LED arrays.

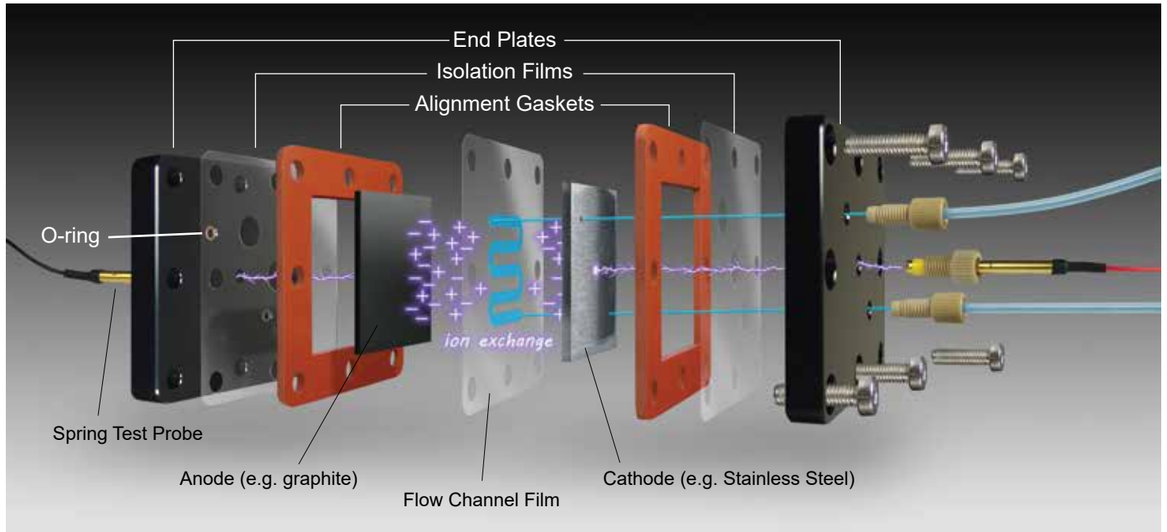
See page 24 for more information

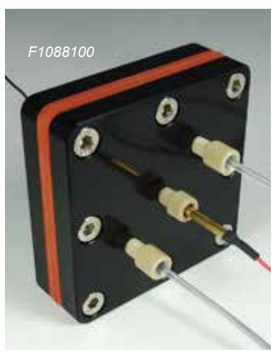
Flow Electrolysis

Analytical is pleased to offer a solution for electrolysis experimentation in the form of a standardized flow electrolysis setup. This new and upcoming technology allows for rapid and efficient production of complex chemical compounds via flow electrolysis. With an interelectrode gap smaller than a millimeter, and the introduction of flow geometries that promote turbulent mixing, our Flow Electrolysis Cell allows for heightened selectivity and yield when compared to flask based reactors. Additionally, the Flow Electrolysis Cell requires minimal new equipment to use. With fittings for 1/8" OD HPLC tubing, fluid flow and electrodes can be connected to power supplies via standard connectors will automatically be varied based on the changing electrical conditions as the reaction progresses.

Undivided Cell (single stream)

In an undivided cell, both electrodes are washed with the same electrolyte and only one fluid circuit is used; the opposite side of the cell is sealed with HPLC plugs and an electrode without through-holes. This allows for low-resistance reactions which will output combined products.





Flow Electrolysis Undivided Cell (single stream) Assembly

Assembly includes:

- Impervious Graphite Plate Electrode (anode)
- 316L Stainless Steel Plate Electrode (cathode)
- Flow Channel PFA Films (1 Meandering, 1 Tangential, 1 Simple, 1 Fin Separator)
- Isolation Layer PFA Films (2)
- Orange Silicone Rubber Alignment Gaskets (2)
- Viton™ Chemical-resistant Internal O-rings, 2mm ID (2)
- Viton™ Chemical-resistant External O-rings, 3mm ID (2)
- Spring Test Probes/Pogo Pins (1 red, 1 black)
- Aluminum End Plates (2)
- Fittings and Hardware

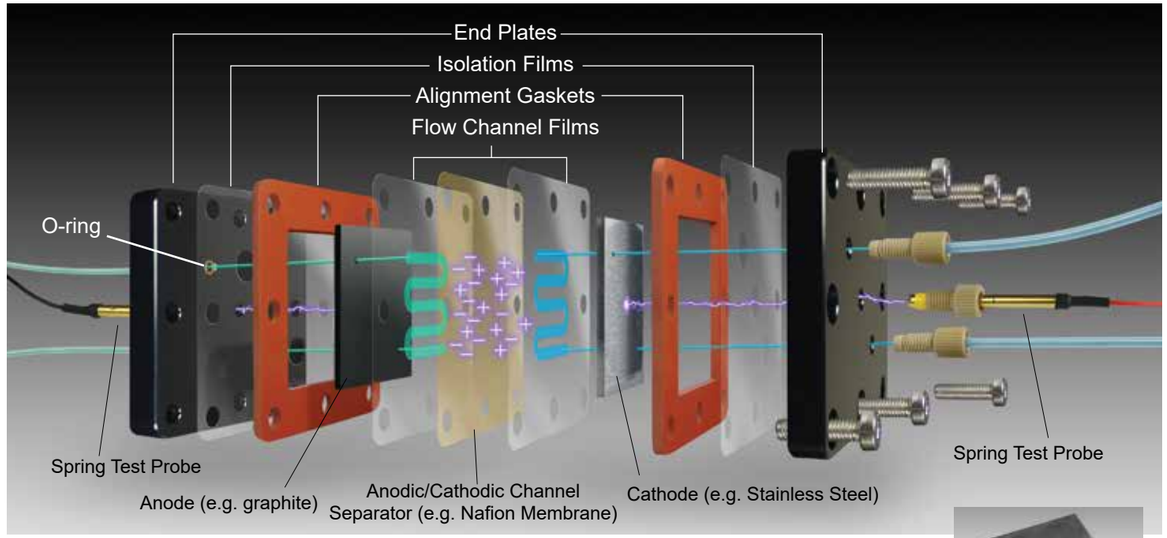
Cat. No.	Description	Qty
F1088100	Flow Electrolysis Undivided Cell Assembly (single stream)	Each

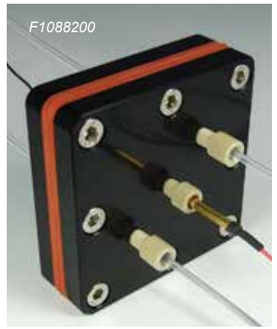
Channel Film Volume

Film Type	Surface Area (mm^2)	Volume at 0.254mm Thick (mm^3)	Volume at 0.127mm Thick (mm^3)
Simple	681.06193	0.26813	0.13407
Tangential	485.74568	0.19124	0.09562
Meandering	631.43901	0.24860	0.12430
Fin Separator	474.58642	0.18685	0.09342

Divided Cell (dual stream)

In a divided cell the electrodes and their flow channels are separated by a Nafion membrane, allowing for reactions to be performed that produce separate output streams. This can be advantageous if the two electrolyte solutions are incompatible or if the products of their reaction are troublesome to separate.



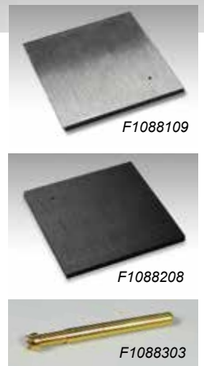


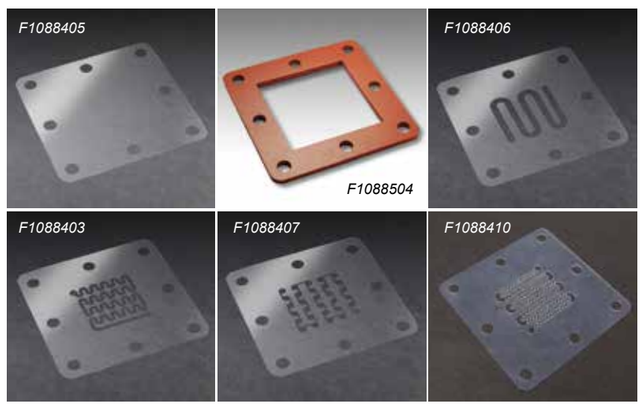
Flow Electrolysis Divided Cell (dual stream) Assembly

Assembly includes:

- Impervious Graphite Plate Electrode with holes (anode)
- 316L Stainless Steel Plate Electrode (cathode)
- Flow Channel PFA Films (2 Meandering, 2 Tangential, 2 Simple, 2 Fin separator)
- Isolation Layer PFA Films (2)
- Nafion Ion Exchange Channel Separator Membrane
- Orange Silicone Rubber Alignment Gaskets (2)
- Viton Chemical-resistant Internal O-rings, 2mm ID (4)
- Viton Chemical-resistant External O-rings, 3mm ID (4)
- Spring Test Probes/Pogo Pins (1 red, 1 black)
- Aluminum End Plates (2)
- Fittings and Hardware

Cat. No.	Description	Qty
F1088200	Flow Electrolysis Divided Cell Assembly (dual stream)	Each





Electrode Plates and Consumable Accessories

Cat. No.	Description	Qty
F1088109	316L Stainless Steel Plate Electrode (cathode)	Each
F1088119	Titanium Electrode (cathode)	Each
F1088108	Impervious Graphite Plate Electrode (anode)	Each
F1088208	Impervious Graphite Plate Electrode (anode) w/ Holes	Each
F1088405	PFA Isolation Layer Films	25
F1088504	Silicone Rubber Alignment Gaskets	10
F1088406	PFA Simple Channel Films	25
F1088403	PFA Meandering Channel Films	25
F1088407	PFA Tangential Mixer Channel Films	25
F1088410	PFA Fin Separator Channel Films	25
F1088201	Nafion Ion Exchange Channel Separator	Each
F1088302	Viton Chemical-resistant External O-rings	50
F1088301	Viton Chemical-resistant Internal O-rings	50
F1088303	Spring Test Probes / Pogo Pins	10
F1030050	Flow Electrolysis Power Supply	Each

EquaVAP (23096) shown with
Gen II Para-dox® Reaction Block (101960)

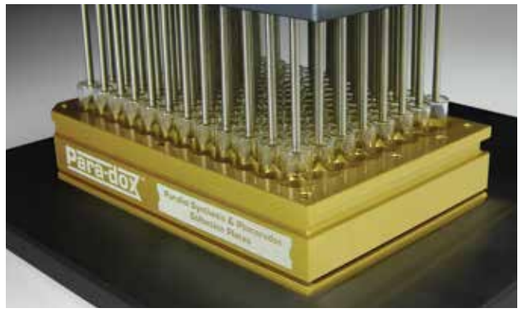
PRODUCT NOTE:

Requires regulated air supply set between 80-110 psi

EquaVAP® 96-Well Blowdown Evaporators - for Reaction Blocks

Rapidly evaporates common organic solvents

- **Internal Flow Equalizers** - Distributes equal output across all needle ports to ensure even and symmetrical evaporation.
- **Stainless Steel Needle Tips** - Long term robust use, sturdy, wide solvent compatibilities
- **Step-down Height Adjustment** - Offers positive repeatable height positions
- **Stand Alone** - Simple to operate, connects to Nitrogen or air supply with a standard socket
- **Small Footprint (8" base)** - Fits into small glove boxes & standard fume hoods



96-Well EquaVAP Evaporator

- Use with 96-well Reaction Blocks with 1mL Vials or 96-well Polypropylene Collection Plates

Cat. No.	Description
23096	EquaVAP 96-Well Blowdown Evaporator

Evaporation Times

Chemical	Avg Evap Time* (HH:MM:SS)
Dichloromethane 99.9%	00:00:23
Acetone 100%	00:02:04
Methanol 99.9%	00:06:09
Ethyl Acetate	00:03:04
Acetonitrile	00:06:37
Isopropyl Alcohol 99.0%	00:08:48
Water (DI)	01:23:46

Conditions: 100 uL of solvent evaporated at AIR flow of 100 L/min
(using 1mL round deep well plate)

**Individual results may vary*

EquaVAP® 48 and 24-Well Blowdown Evaporators - for Reaction Blocks

48-Well EquaVAP Evaporator

- Use with 48-well **Aluminum Reaction Blocks** with 2mL Vials (101480), (48612), (48012)

Cat. No.	Description
23048	EquaVAP 48-Well Blowdown Evaporator for 48-Well Reaction Blocks with 2mL vials

24-Well EquaVAP for 9mm Vial Spacing

- Use with 24-well optimization blocks with 9mm vial spacing
- 24-well block fits into 96-well footprint with use of rack adapter (24245)

Cat. No.	Description
23024-09	EquaVAP 24-Well Evaporator for 24-Well Reaction Blocks with 9mm Vial Spacing

24-Well EquaVAP Evaporator (20mm)

- 20mm center-to-center needle distance
- Use with 24-well **Aluminum Reaction Blocks** with 1 Dram (4mL) or 2 Dram (8mL) Vials (24015), (24017), (24615), (24617)

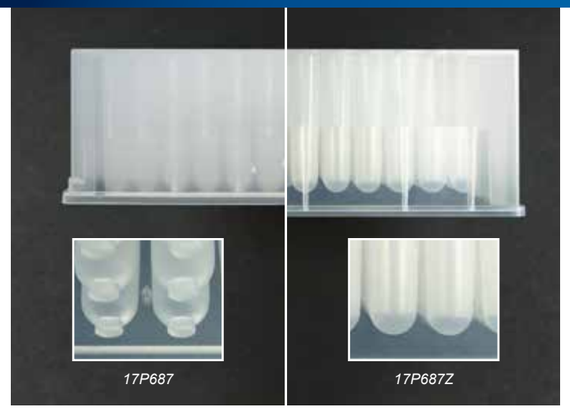
Cat. No.	Description
23024-20	EquaVAP 24-Well Evaporator for 24-Well Reaction Blocks with 20mm Spacing

Shown with
Gen II Para-dox®
Reaction Block (101240)

24-Well EquaVAP Evaporator (18mm)

- 18mm center-to-center needle distance
- Use with 24-well **Aluminum Reaction Blocks** with 18mm Well Spacing (101240), (24626)

Cat. No.	Description
23024-20	EquaVAP 24-Well Evaporator for 24-Well Reaction Blocks with 18mm Spacing



Advantage™ 1mL Collection Plates

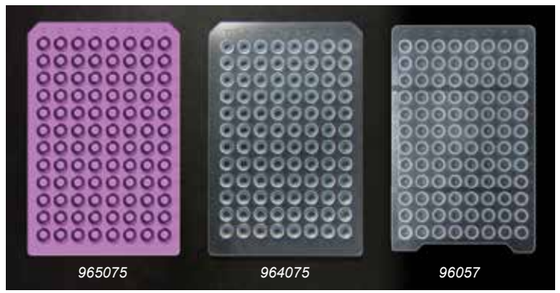
Round Well with Round Bottom

Cat. No.	Description	Qty
17P687Z	1mL 96-Well Collection Plate with Round Well Bottoms	20
17P687	1mL 96-Well Collection Plate with Round Well Bottoms	20

Advantage™ 2mL 96-Well Collection Plates

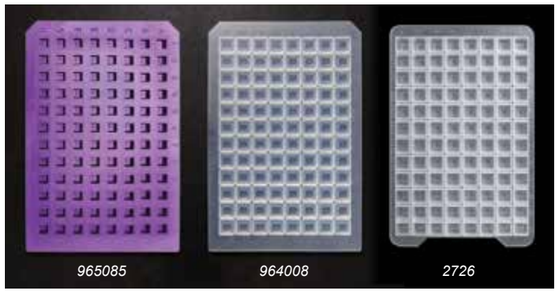
Square Well with V-Shaped or Round Bottom

Cat. No.	Description	Qty
27P687	2mL 96-Well Collection Plate with **Round-Bottom** Wells	20
59623-23	2mL 96-Well Collection Plate with **V-Bottom** Wells	10



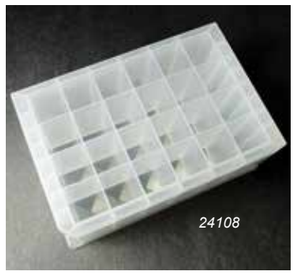
Advantage™ 96-Well Cap Mats - Round Well

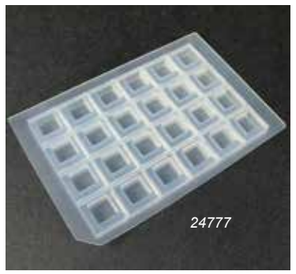
Cat. No.	Description	Qty
965075	Purple Pre-Scored Ultra Thin Round Cap Mat	5
964075	Clear Pre-Slit Ultra Thin Round Well Cap Mat	5
96057	Autosampler Compatible 1mL Cap Mat with “X”	20



Advantage™ 96-Well Cap Mats - Square Well

Cat. No.	Description	Qty
965085	Purple Ultra Thin ***Pre-Slit*** Square Cap Mat	5
964008	Mighty Mat Purple Ultra Thin Square Cap Mat	5
2726	2mL Pierceable Cap Mat with “X” on Surface	20





Fits nicely with Lumidox® II 24-well LED arrays

24-Well Collection Plates and Cap Mats

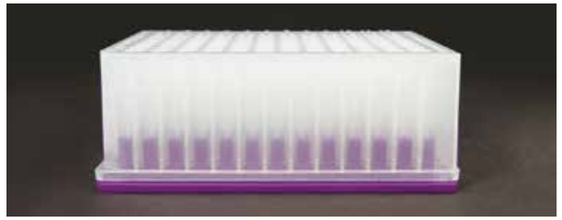
Cat. No.	Description	Qty
24727	24-Well Collection Plate with Round-Bottom Wells. 10mL/well, 240mL max	25
24108	24-Well Collection Plate with Pyramid-Bottom Wells. 10mL/well, 240mL max	25
24777	Silicone/PTFE **Cap Mat** for 24-well Collection Plates	5
24128	24 Well Plate, V-Bottom, 15mL Per Well, Polypropylene (127.2L x 85.3W x 63.2H in mm)	50

Thermal Adapter Plates

- **For improved temperature transfer to samples**
- **For use with matching polypropylene collection plates**

Our Thermal Adapter Plates conform to the well shape of their complementing polypropylene collection plate. They ensure uniform thermal transfer for heating and cooling when used in conjunction with a heating block or chiller (not included). The plate features a SLAS footprint and easy to identify purple anodized coating.

Analytical Sales & Services can make Thermal Adapter Plates to accommodate any shape and style polypropylene collection plate we offer. Please call 973-616-0700 for more information.



Thermal Adapter Plates

Cat. No.	Description	Qty
967720TAP	Thermal Adapter Plate for 967720 PP Collection Plate	Each
967720	2mL Round Well/Round Bottom 96-Well Collection Plate	25
59623-23TAP	Thermal Adapter Plate for 59623-23 PP Collection Plate	Each
59623-23	2mL Round Well/V-Bottom 96-Well Collection Plate	25
968810TAP	Thermal Adapter Plate for 1mL TrueTaper Collection Plate	Each
968810	1mL TrueTaper Collection Plate	25
968820TAP	Thermal Adapter Plate for 2mL TrueTaper Collection Plate	Each
968820	2mL TrueTaper Collection Plate	25
17P687ZTAP	Thermal Adapter Plate for 17P687Z PP Collection Plate	Each
17P687Z	1mL 17P687Z PP Collection Plate	25

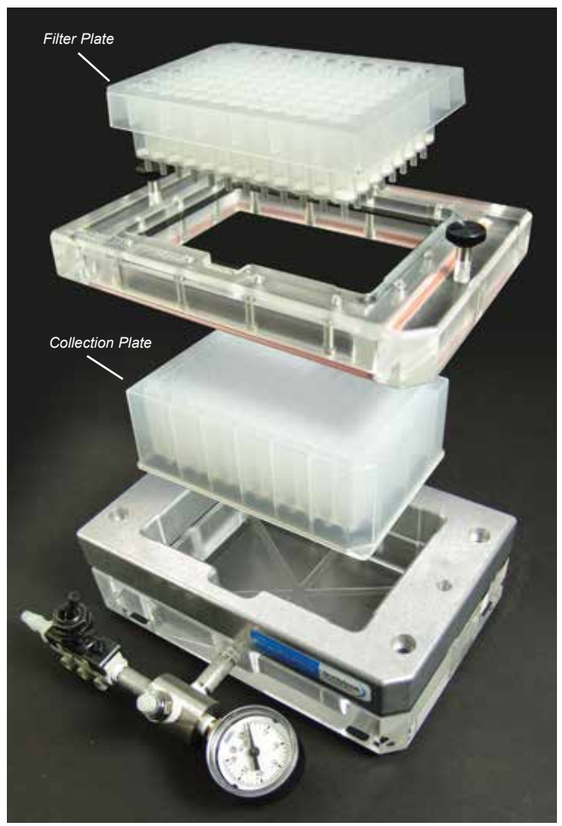
Vacuum Manifold Filtration System

for SPE Sample Preparation

- Sturdy, clear acrylic construction
- Adjustable vacuum control
- Easy access to filtrate
- Compatible with all standard filter bottom microplates
- Collect into any storage plate
- Compatible with robotic handling

The Advantage™ Vacuum Manifold Filtration System allows you to collect into any storage plate (including low volume collection plates) and is compatible with robotic handling systems. It uses an integral flat gasket between the collection plate and the filtration plate which stays totally secure within the system. A spacer is supplied for use with low volume collection plates. The Vacuum Manifold is constructed of tough acrylic for optimum performance and visual accessibility.

Cat. No.	Description	Qty
96844	Vacuum Manifold Filtration System for SPE Sample Filtration	Each



Drug Discovery 96-Well Filter Plates

• Low Protein Binding • General Filtration

Cat. No.	Description	Qty
964PP45	400µL Hydrophobic PP, 0.45µm	25

General Filtration 96-well Filter Plates

• After SPE • Dilute and Shoot
• Use prior to LCMS and Microarraying

Low Protein Binding - Sample in Solvent

Cat. No.	Description	Qty
96245-10	2mL Hydrophilic PP, 0.45µm	10
96254-10	2mL Hydrophobic, PP 0.45µm	10

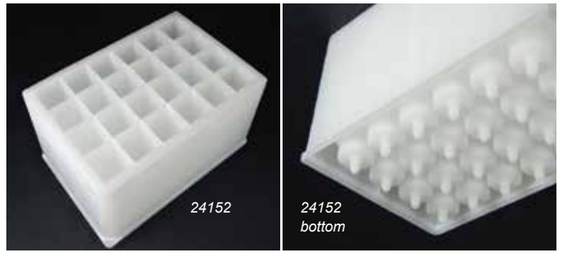
Diatomaceous 96-Well Filter Plates

• pH 1-13 • No Pre-Treatment of the Bed is Necessary
• Packed with Flux Calcinated Diatomaceous Earth

Cat. No.	Description	Qty
96160-5	1mL Diatomaceous Filter Plate	5
96260-5	2mL Diatomaceous Filter Plate	5

General Filtration 384-well Filter Plates

Cat. No.	Description	Qty
38407	384-Well Filter Plates, 140µL, Glass Fiber, 0.7µm	10
384603	Poly DVB SPE, 384 Well filter plate, 3mg/well	Each



24-well Filter Plates

Cat. No.	Description	Qty
24152	24 Well Filter Plates, PE 25µm, 15mL	15
2415SCX500	24 well SCX (Strong Cation exchange) 15 mL/500 mg bed	Each
241010	24 well Filter plates, Hydrophobic PP, 10 µm	25

Assembled Vials in Stackable Trays

Recommended for top performance!

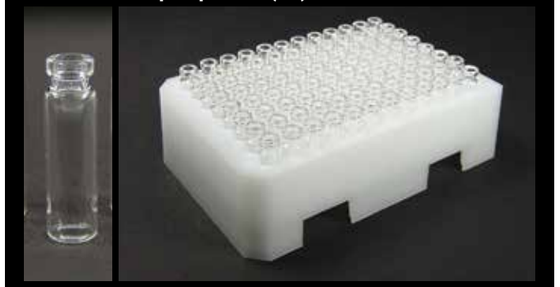
- For easy loading - ***Saves Time!***
- Our thorough QC process ensures ***Less Evaporation*** compared to loose vials

8x30mm Crimp Top Vials in Loaders

8x30mm Crimp Top Vials for TCR (48)

Cat. No.	Description	Qty
488408	Assembled Stackable Tray Loaded with 48 8x30mm Crimp Top Vials (84008-CASE) for TCR, Includes Tray and Vials	Each

8x30mm Crimp Top Vials (96)



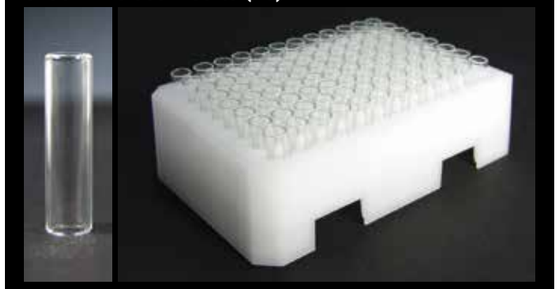
Cat. No.	Description	Qty
884008	Assembled Stackable Tray Loaded with 96 **8x30**mm Crimp Top Vials (84008-CASE), Includes Tray and Vials	Each

Shell Vials in Loaders

8x30mm Glass Inserts for TCR (48)

Cat. No.	Description	Qty
488401	Assembled Stackable Tray Loaded with 48 8x30mm Flat-Bottom Vials (84001-CASE) for TCR, Includes Tray and Vials	Each

8x30mm Glass Inserts (96)



Cat. No.	Description	Qty
884001	Assembled Stackable Tray Loaded with **8x30**mm Shell Vials (84001-CASE), Includes Tray and Vials	Each

4x21mm Vials (96)

Cat. No.	Description	Qty
96342	Assembled Stackable Tray Loaded with 4x21mm Flat-Bottom Vials (10421-CASE), Includes Tray and Vials	Each

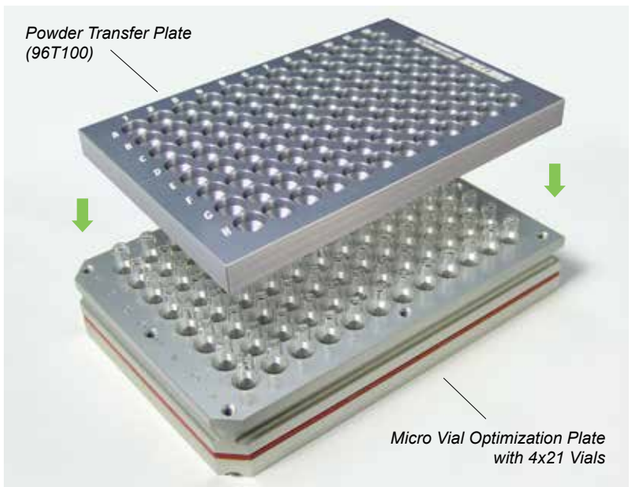
5x31mm Vials (96)

Cat. No.	Description	Qty
96242	Assembled Stackable Tray Loaded with **5x31**mm Flat-Bottom Vials (20303-CASE), Includes Tray and Vials	Each

Powder Transfer Plate for 4x21mm Vials

Easily dispense powder into 4x21mm (50µL) Micro Vials

- Wide funneled holes guide powder into vials
- Grooves on bottom surface "lock" vials into position to avoid spillage



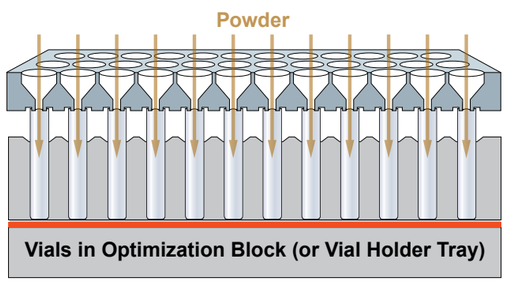
Use with:

- 96-Well Polypropylene Tray with 4x21mm Vials (96342)
- 4x21mm Vials (10421-Case) in 96-Well Micro Optimization Block (96970)

Cat. No.	Description	Qty
96T100	Powder Transfer Plate for 4x21 Vials	Each

Top Surface | Bottom Surface

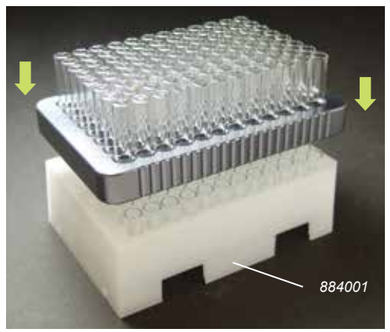
- Wide funneled holes guide powder into vials
- Grooves on bottom surface "lock" vials into position to avoid spillage



1. *Lower plate onto vials and let the vials "settle" into the grooves on the bottom surface of transfer plate*
2. *Powder can now be easily dispensed into each vial*

Powder Transfer Plate for 8x30mm Vials

Use to transfer powder from vial to vial or to mix powders between vials



Use with 96-Well Stackable Trays with 8x30mm Vials (884001 Shell), (884008 Crimp)

Flip repeatedly to mix powders between vials

Cat. No.	Description	Qty
96T105	Powder Transfer Plate for 8x30mm Shell Vials	Each
884001	96-Well Stackable Tray Loaded with 8x30mm Shell Vials	Each
96T102	***NEW!*** Powder Transfer Plate for 8x30mm Crimp Vials	Each
884008	96-Well Stackable Tray Loaded with 8x30mm Crimp Vials	Each

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