



CREAFLOW

Scalable Flow Reactors

presents

HANU™ 2X 5 Flow Reactor

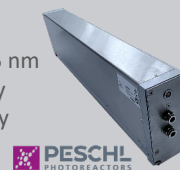
*Your Ultimate Toolbox
for Scalable Photochemistry*

Lab to Production Scale
5mL | 15mL | 150 mL

Extended T/p range
Up to 150°C / 25 bar

Irradiation Sources

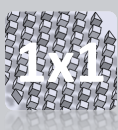
- Interchangeable LEDs
- Wavelength: 365 – 625 nm
- Tuneable light intensity
- ATEX certification ready



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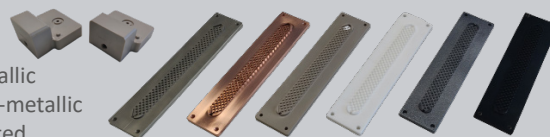


Static Mixing Element
Configurations



Process Inlays & In/Outlet Ports

- Metallic
- Non-metallic
- Coated



SS 316L, HC276, Tigr2, E-Cu, PTFE, PEEK, SiC, etc.

Unique Features



Scalable UV & VIS Photochemistry

Seamless single-technology scale-up strategy for both UV & VIS Photochemistry



Long Residence Time Reactions

Continuous single-pass operation with no need for recirculation



Demanding Multi-phase Reactions

Effective handling of solid particles and gas bubble formation at any flow rate



Multi-Purpose Solution for cGMP Production

'open-shell' system, disassembly allows straight-forward physical cleaning, swab sampling and parts exchange



Non-invasive Inline Reaction Monitoring

Through-window PAT methods (i.e. Raman, NIR) or visual inspections



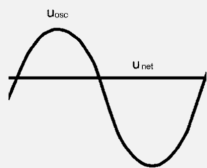
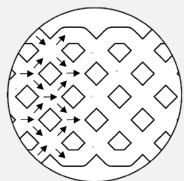
Visual Inspections

Inspection window to visually monitor and understand your particular process

Working Principle: COSTA™ Technology



◆ Continuous processing in a linear plate flow reactor



◆ Oscillating flow regime

◆ STAtic mixing elements located in process channel

Excellent process control

Single-technology scale-up strategy



Low Flow
Mixing



Temperature
Control



Plug Flow
Profile



Assembled Unit
Modularity



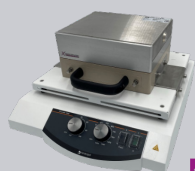
Linear
Scalability



Multi-ton/year
Production

HANU™ Flow Reactors

Your Ultimate Toolbox for Scalable Photochemistry



HANU™ PX 9

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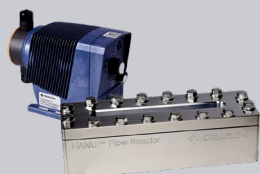
photoLAB HANU™ 2X 5

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photoLAB HANU™ 2X 15
(turnkey system)

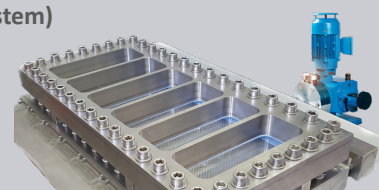
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HANU™ 2X 5



HANU™ 2X 15



HANU™ HX 150

Laboratory R&D

mg/h – g/d

Process Development

g/h – kg/d

Pilot & Production

kg/h – multi-MT/y

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