

FALLING FILM PHOTOREACTOR WITH FORCED LIQUID CIRCULATION

GENERAL

The synthesis via the photo chemistry is a commonly applied method. Organic syntheses often succeed only due to the radiation with UV-light or will be speeded up. Photochemical reactions are often run at room temperature and so they are gentler than other thermal processes. Photoreactors have a wide range of application, e.g. in synthesis, analysis and waste water treatment.

Construction of the Falling Film Photoreactor

The radiation vessel is the main component of the reactor. It has a capacity of approx. 200 ml and distinguish by the silver coated high vacuum jacket with side strips and tempering jacket. Cooling tube and immersion tube, both made of quartz glass, are located in the radiation vessel. The circulation is effected by the forced circulation pump "System Normag", which is controlled by a control unit. Delivery consists of four supply vessels with volumes of 100, 250, 500 and 1000 ml, as well as a low temperature thermometer for low temperature ranges between $-30\text{ }^{\circ}\text{C}$ and $+100\text{ }^{\circ}\text{C}$ and small pieces.

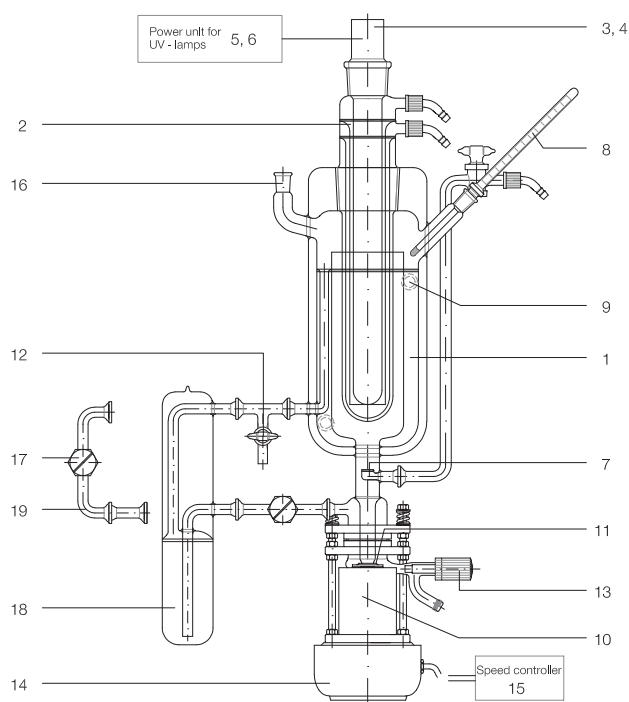
Catalogue No. SAA 09356

Pict.
Falling Film Photoreactor
with forced liquid circulation



The Normag Falling Film Photoreactor offers the following advantages:

- An effective circulation of the liquid to be radiated inside the reactor.
- Due to the falling film principle, an intensive radiation is reached.
- Only a small liquid volume is necessary.
- Operations in low temperature range ensure more application facilities.
- Used materials Borosilicate glass 3.3, quartz glass and plastic parts of PTFE.
- This photoreactor is suitable for mercury medium pressure lamps TQ 718 and TQ 150 and the mercury low pressure lamp TNN 15/32.



Legend:

- 1 - Radiation vessel
- 2 - Cooling tube, Quartz glass
- 3 - UV-lamp TQ 718
- 4 - UV-lamp TNN 15/32
- 5 - Power unit for UV-lamp TQ 718
- 6 - Power unit for UV-lamp TNN 15/32
- 7 - Gassing frit
- 8 - Thermometer
- 9 - Cooling water connections GL 14
- 10 - Forced circulation pump
- 11 - Pump impeller
- 12 - Glass stopcock for sampling
- 13 - Spindle valve for drain off
- 14 - Motor
- 15 - Speed controller
- 16 - Ventilating and feeding connection
- 17 - Throttle valve
- 18 - Supply vessel for reaction solution
- 19 - Equalising line for small volumes

We will be pleased to submit you our detailed offer.

Accessory for the Falling Film Photoreactor

- Mercury medium pressure lamp TQ 718
Capacity 700 W
Lamp voltage 220 V

Catalogue No. SAA 09380

- Mercury medium pressure lamp TQ 718 Z1
With additional radiation intensity 400 - 450 nm

Catalogue No. SAA 09381

- Mercury medium pressure lamp TQ 718 Z2
With additional radiation intensity 500 - 550 nm

Catalogue No. SAA 09382

- Mercury medium pressure lamp TQ 718 Z3
With additional radiation intensity 280 - 360 nm
and 460 - 510 nm

Catalogue No. SAA 09383

- Power unit fitting for TQ 718 lamps
Connecting voltage 220 V, 50 Hz

Catalogue No. SAA 09384

- Table tripod frame
for the mounting of the photoreactor,
made of V4A tube, outer diameter 26.9 mm
with powder-coated tube connectors,
Dimensions: W 800 x D 550 x H 1080 mm

Catalogue No. SAA 09385

We will be pleased to submit you our detailed offer.

- Mercury low pressure lamp TNN 15/32
Capacity 15 W,
Lamp voltage 55 V

Catalogue No. SAA 09370

- Power unit fitting for TNN 15/32,
Connecting voltage 230 V, 50 Hz

Catalogue No. SAA 09371

- Mercury medium pressure lamp TQ 150
Capacity 150 W
Lamp voltage 85 V

Catalogue No. SAA 09360

- Mercury medium pressure lamp TQ 150 Z1
With additional radiation intensity 400 - 450 nm

Catalogue No. SAA 09361

- Mercury medium pressure lamp TQ 150 Z2
With additional radiation intensity 500 - 550 nm

Catalogue No. SAA 09362

- Mercury medium pressure lamp TQ 150 Z3
With additional radiation intensity 280 - 360 nm
and 460 - 510 nm

Catalogue No. SAA 09363

- Power unit fitting for TQ 150, TQ 150 Z1, TQ 150 Z2 and
TQ 150 Z3 lamps
Connecting voltage 220 V, 50 Hz

Catalogue No. SAA 09364