

## Reflecting sheets for air cooled UV modules

## type Aachen, Köln, Ellwangen, Koblenz, Twist

UV curing is an essential process step in the printing of temperature-sensitive substrates with solventfree inks and coatings, or in the application of adhesives, as the heat load is usually lower than with classic heat drying.

Our air-cooled UV modules are equipped with service-friendly reflecting sheets, which should be replaced at regular intervals, depending on the amount of use, e.g. if ink mist or dust has accumulated on the reflecting sheets.

For most applications, electrolytically polished and anodised aluminium sheets are used (high-gloss anodised; standard insert sheets). These are specially optimised for use as UV reflectors and have been established on the market for many years. Their advantages: On the one hand, they have a good reflection over the entire UV range, on the other hand, they are cost-effective and can also be replaced by the user himself.



Technical data reflecting sheets (standard)	
Art. no.	025 00941 LLLL
	(LLLL: length in mm)
Spectral reflection	Ravg. $\geq$ 87% reflexion light (DIN 5036-3)
	Ravg. > 80% 254 nm (self measurement)
	Ravg. > 85% 365 nm (self measurement)
Heat resistance	approx. 180 °C value applies with uniform heating of the reflector

Spectral specification, AOI = 45°, measured values taken with flat substrate.

Reflexion Alu-Reflektorbleche / Reflection highly polished anodised aluminium reflectors





## Cold Mirror (dichroic) reflecting sheets

A big portion of energy emitted by uv medium pressure lamps is thermal radiation. If it is important that the substrate is to be irradiated with heat as little as possible it is advisable to use dichroic-reflecting sheets (cold mirror) instead of standard reflector sheets, which can be recognised by their bluish shimmering surface.

The advantage of cold light coating is that UV light is reflected very well, but the unwanted longwave portion (IR) is absorbed, which means that the substrate is exposed to less heat. This effect is achieved by numerous  $\lambda/4$  layers of different refractive indices and thicknesses vapour-deposited onto the aluminium substrate.

#### Advantages

- very good UV reflection due to the dichroic coating
- less heat due to separation of UV light from light and IR radiation, extremely important for heat-sensitive substrates

#### Applications

- printing machines
- packaging, glossy brochures, plastic foils, sensitive labels, etc.
- electronic industry, bonding of SMD components, etc.
- printed circuit board production, wood processing industry, surface treatments

# Reflexion Dichroitische Reflektorbleche/





Technical data cold mirror (dichroic) reflecting sheets (Cold UV)	
Art. no.	025 00456 0000: cold mirror on alu reflecting sheet, length 175 mm
	025 00457 0000: cold mirror on alu reflecting sheet, length, 300 mm
	Other lengths on request.
Spectral reflection	Ravg. ≥ 92% 220 - 400 nm
	Ravg. ≤ 25% 450 - 1600 nm
	Ravg. ≤ 50% 1600 - 2000 nm
	The values apply to aluminium cold mirror reflectors.
Heat resistance	aluminium carrier substrate: 150 °C
	This value applies with uniform heating of the reflector.
	It is recommended not to set the specific lamp power higher than 140 W/cm.

Spectral specification, AOI = 45°, measured values taken with flat substrate.

2

## Cleaning of reflecting sheets

Dust, paint mist and solvents in the ambient air affect the reflective properties of the reflecting sheets, which is why we recommend cleaning the reflecting sheets regularly with a cloth soaked in alcohol (see example on the right; available from the shop at <u>www.uvtechnik.com</u>) and replacing them every second or third time the uv lamp is changed.

### If the above instructions are observed and the lamps and reflectors are handled with care, a longer service life and optimised UV irradiation will be achieved.

## Change of reflecting sheets

The replacement of the reflecting sheets, whether standard or dichroic, can be carried out by the customer. To do this, proceed as follows:

## A) Removal of an old reflecting sheet

- 1. Loosen all M2.5 screws on the L-form holding devices (1) with a Phillips screwdriver. Note: The screws are secured against loss and therefore cannot be unscrewed completely.
- 2. Pull out the entire L-form holding devices (retaining bar 2) to one side completely.
- 3. Remove the old reflecting sheets (3).

The installation of a new reflecting sheet is done in reverse order:







#### B) Inserting a new reflecting sheet

1. Peel off the protective foil (4) on new sheets to approx. 5 mm on both long sides so that it is not pinched later on:



2. Now carefully place the new reflecting sheet (5) from the top into the lower groove of the reflector profile (6). Make sure that the protective foil (4) is not pinched.



3. Carefully push the L-form holding devices (retaining bar) (2) back into the reflector profile and make sure that the protective foil is not pinched at the upper edge either. Tighten all M2.5 Phillips screws again in two passes (1).

Remove the protective foil completely (7).



If the unprotected reflectings sheets have been accidentally touched with the fingers, clean it with isopropanol.

Further spare parts, such as fastening material, are available on request. Please contact us.

