

# OPTICAL COATING SYSTEMS



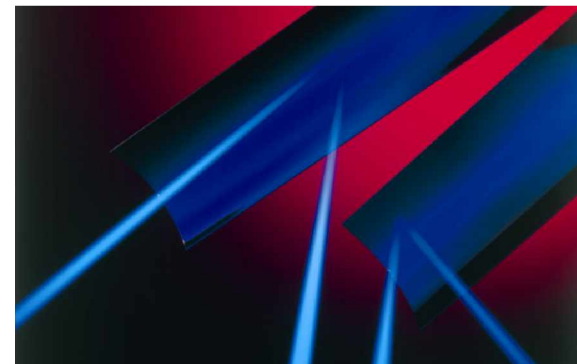
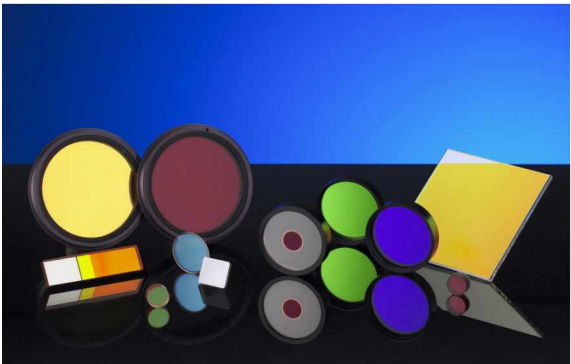
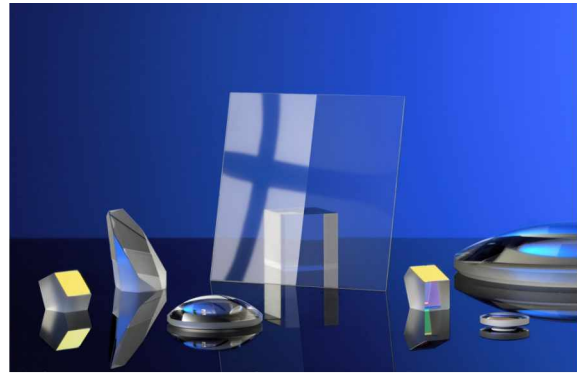
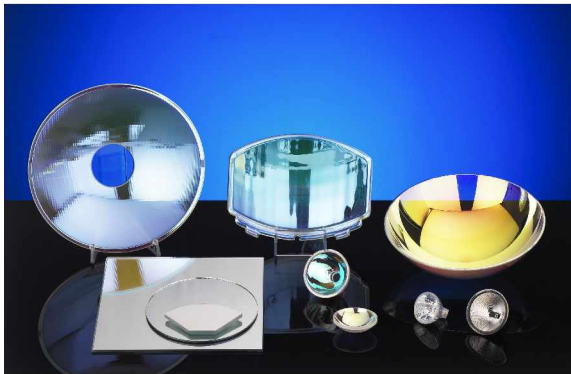
# VTD



## PRECISION IN A HIGH VACUUM

The coating systems developed and supplied by **VTD VAKUUMTECHNIK DRESDEN** GmbH are designed to process mainly three-dimensional optical components and are particularly suitable for:

- Coating high-precision optical elements (lenses, prisms) made of glass, quartz, metal or certain plastics
- Coating elements made of steel, aluminium, glass or certain plastics that are used in the manufacture of high-precision instruments (e.g. optical trains)
- Coating large optical elements such as telescope reflectors in various designs



## USERS OF VTD'S SYSTEM TECHNOLOGY

- Manufacturers of high-precision optics and contract coaters with a wide range of services and/or small job lots who set great store in the ability to modify their system equipment. Various preinstalled coating technologies ensure a flexible use with short retrofitting times
- Manufacturers of special reflectors (UV reflectors, cold-light reflectors) and other spectral-selective functional elements (filters, heat protectors, beam splitters)
- Operators of reflecting telescopes whose sophisticated and expensive reflectors have to be regularly recoated on site.

## COMPLETE SYSTEMS

for a variety of optical coatings in the UV,  
visual and near IR spectral range

These fully automated coating systems are ideal for the inexpensive optical coating of planar and convex components in production.

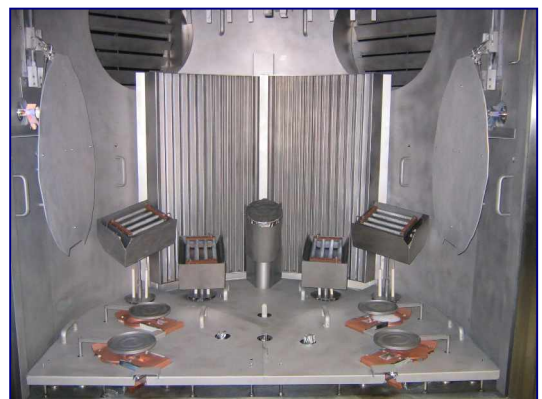
They offer a very flexible and wide range of Technological possibilities for the production of anti-reflection coatings, highly reflective mirror coatings, beam splitters or edge filters in the spectral range from ultraviolet through to near infrared, for example.

VTD also develops customized technological coating solutions to user-specific requirements.



### The hardware is characterized by the following main features:

- Fully automated, computer-controlled process
- Complex user-specific programming and logging possibilities
- Use of an industrially-tested vacuum system
- Stainless steel chamber to hold components in an enveloping circle of 770 to 1200 mm in diameter
- Use of electron-beam evaporators and resistance evaporators as required
- Ion source for ion-assisted deposition (IAD) of sophisticated coating systems
- Film thickness and deposition rate measurement with a quartz-crystal thin film monitor or an optical film thickness gauge as required
- A wide variety of supplementary technological equipment
- Data management for quality control and external networking
- Easy handling during maintenance and service



**Basic technologies:**

Broadband anti-reflection coatings, highly-reflective mirrors, beam splitters, edge filters, gradient layers

**Substrate:**

Glass, ceramics, various plastics, metals

**Productivity:**

System	VERA 1100	VERA 1400	VERA 1600	VERA 2000	ASTA 2400	ASTA 2800
max. substrate diameters	920 mm	1.200 mm	1.480 mm	1.750 mm	2.050 mm	2.400 mm
coatable area	approx. 60 dm <sub>2</sub>	approx. 110 dm <sub>2</sub>	approx. 150 dm <sub>2</sub>	approx. 240 dm <sub>2</sub>	approx. 330 dm <sub>2</sub>	approx. 450 dm <sub>2</sub>
typical batch time	approx. 60 min 4 layers, broadband	approx. 300 min > 60 λ / 4 layers	approx. 300 min > 60 λ / 4 layers	approx. 60 min 4 layers, broadband	approx. 60 min Al + MgF <sub>2</sub>	approx. 60 min Al + MgF <sub>2</sub>



**The Philosophy of VTD Vakuumtechnik Dresden GmbH is characterized by:**

- A strong focus on customer requirements right through to purpose-built systems
- Technological support from the project phase to safeguarding the production



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