



AR

Vacuum coating

AR, MIRROR and COLOR COATING – Technological BOX COATERS



COMES develops the most modern generation of Vacuum Coating Machines for sunglass and optical lenses.

Three new Coaters are available for small, medium and large productions.

Improvement of the cycle time (reduction up to 20%) grants a higher production capacity thanks also to the dedicated Software that permits the intuitive and reliable use of the whole system through a user-friendly interface.

The integration of the high quality components and the Management philosophy grant a substantial optimization of the cycle cost.

COMES offers the last generation processes to realize the best quality in Coating Treatments for all lens materials.

The whole **COMES** knowledge and technological expertise comes from more than 30 years Engineering experiences in the Vacuum Coating field.

COMES was founded in 1936 and with more than 80 years of history we are able to satisfy all your exigencies for your business success in a complete and integrated system for Lens Productions and RX Laboratories.

AR•6



Pumping System

Rotary pump (double stage)	80 m ³ / h
Booster Pump	500 m ³ / h
- AR•6 Diffusion Pump	8.000 L / s
- AR•6 Turbo molecular Pump	2.300 L / s
Meissner trap with Cryochiller	80.000 L / s

Electricity

- AR•6 Diffusion Pump	15 Kw. installed. 10/12 Kw. average per cycle
- AR•6 Turbo molecular Pump	11 Kw. installed. 5/7 Kw. average per cycle

Compressed air

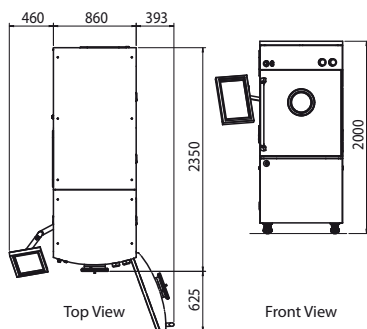
Pressure:	6 bar.
Consumption	6 Lt. / batch approx.

Weights and dimension

Box Coater	900 Kg. W.860 x D.2.350 x H.2.000 mm
Vacuum chamber volume	280 LT
Vacuum chamber internal dimensions	D. 600 mm H. 750 mm
Cryo Chiller	500 Kg.
Hot water system	60 Kg.
Cold water system	120 Kg.

Lens capacity for cycle dome system

Lens diameter 60 mm	56 pcs.
Lens diameter 65 mm	50 pcs.
Lens diameter 70 mm	44 pcs.
Lens diameter 75 mm	40 pcs.
Lens diameter 80 mm	30 pcs.
Lens diameter 85 mm	28 pcs.



measures in mm

AR•10



Pumping System

Rotary pump (double stage)	175 m ³ / h
Booster Pump	1.200 m ³ / h
- AR•10 Diffusion Pump	12.000 L / s
- AR•10 Turbo molecular Pump	4.600 L / s
Meissner trap with Cryochiller	160.000 L / s

Electricity

- AR•10 Diffusion Pump	27 Kw. installed. 16/18 Kw. average per cycle
- AR•10 Turbo molecular Pump	20 Kw. installed. 10/12 Kw. average per cycle

Compressed air

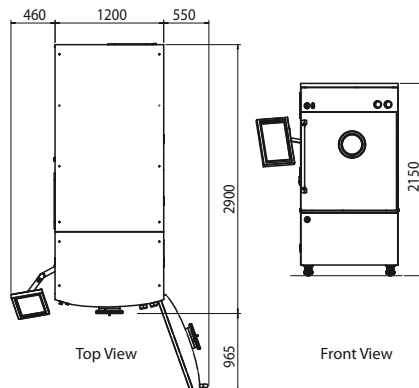
Pressure:	6 bar.
Consumption	6 Lt. / batch approx.

Weights and dimension

Box Coater	1.940 Kg. W.1.200 x D.2.900 x H.2.150 mm
Vacuum chamber volume	1.050 LT
Vacuum chamber internal dimensions	D. 1.000 mm H. 1.200 mm
Cryo Chiller	500 Kg.
Hot water system	60 Kg.
Cold water system	120 Kg.

Lens capacity for cycle dome system

Lens diameter 60 mm	174 pcs.
Lens diameter 65 mm	162 pcs.
Lens diameter 70 mm	126 pcs.
Lens diameter 75 mm	120 pcs.
Lens diameter 80 mm	90 pcs.
Lens diameter 85 mm	90 pcs.



measures in mm

AR•14



Pumping System

Rotary pump (double stage)	275 m ³ / h
Booster Pump	2.600 m ³ / h
- AR•14 Diffusion Pump	20.000 L / s
- AR•14 Turbo molecular Pump	6.900 L / s
Meissner trap with Cryochiller	190.000 L / s

Electricity

- AR•14 Diffusion Pump	38 Kw. installed. 18/20 Kw. average per cycle
- AR•14 Turbo molecular Pump	22 Kw. installed. 12/14 Kw. average per cycle

Compressed air

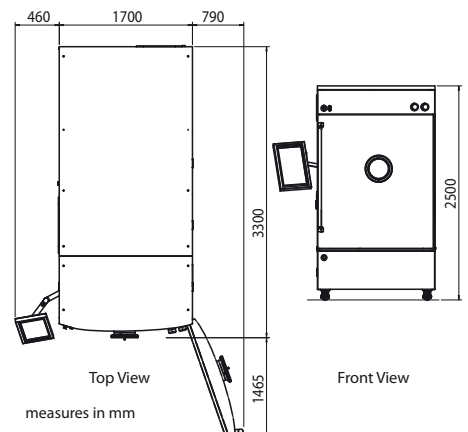
Pressure:	6 bar.
Consumption	6 Lt. / batch approx.

Weights and dimension

Box Coater	3.240 Kg. W.1.700 x D.3.300 x H.2.500 mm
Vacuum chamber volume	2.650 LT
Vacuum chamber internal dimensions	D. 1.400 mm H. 1.460 mm
Cryo Chiller	500 Kg.
Hot water system	80 Kg.
Cold water system	150 Kg.

Lens capacity for cycle dome system

Lens diameter 60 mm	312 pcs.
Lens diameter 65 mm	270 pcs.
Lens diameter 70 mm	246 pcs.
Lens diameter 75 mm	210 pcs.
Lens diameter 80 mm	174 pcs.
Lens diameter 85 mm	162 pcs.



measures in mm

Available Processes:

- Antireflection / UV & Blue Block
- Dielectric Mirrors
- Internal Dielectric Mirrors with Colors (all on the backside)
- Whole Color
- Gradient Color
- Antistatic layer
- Super Top Coat

- * All processes are available for CX and CC surface.
- * All lens materials



Graphic User Friendly Interface

21,5" High Resolution Touchscreen interface.

Synoptic Page permits an immediately Control of all Coater functions and the immediately machine state survey.

Accurate parameters for the control of all working steps

- Chamber vacuum value acquisition in real time
- Deposition thickness control in real time
- Automatic Maintenance Advices for machine Service.
- Languages: English / Spanish / French / Italian / Portuguese other on demand.

Vacuum Chamber & fittings

The vacuum chamber is manufactured in Italy with the best stainless steel and tested at $1,0 \times 10^{-11}$ mbar.

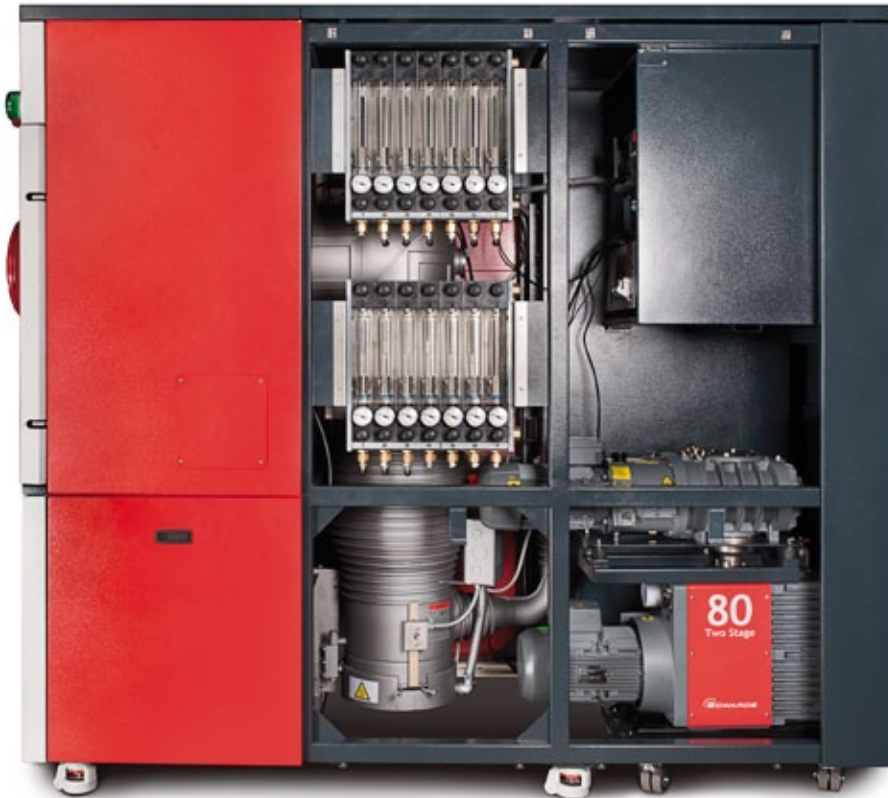
Chamber contains:

- EB-Gun
- ION-Gun
- Thermal Source
- Meissner Trap
- IR-Lamp



Top Brand Components:

- Industrial PLC and Components Siemens
- Edwards
- Pfeiffer
- Varian
- HSR
- Telemark / Temescal



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