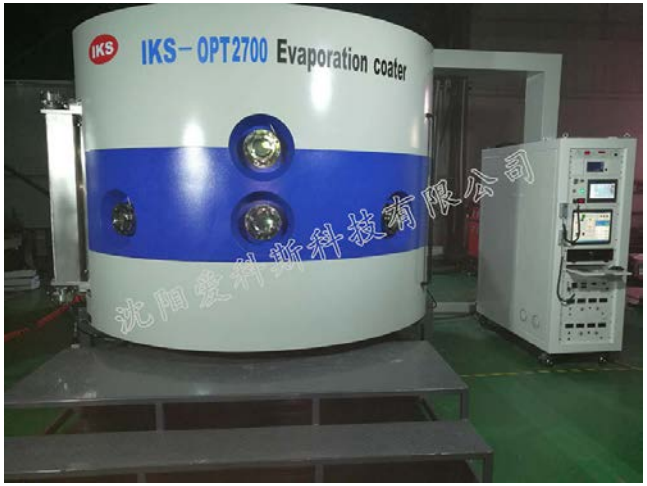
IKS-OPT2700 Electron Beam Evaporation Optical Coating Machine

- **Applications:**

Eyeglasses, reflective mirror, mobile phone backboard, protective cover, optical communication, optical display, etc



- **Equipment Brief**

IKS-OPT2700 is designed for large area optical film coating, It is electron-beam evaporative coating machine. The coating machine system is consist of vacuum chamber, vacuum pump, Vacuum detection and control, substrate heating system, electron beam evaporation system, ion source assisted deposition system, resistance evaporation system, film thickness monitoring system, working gas volume flow control system, work piece rotation system and automatic coating controlled by PLC.

The evaporation material is commonly used of rare metals, like yttrium fluoride, praseodymium fluoride, germanium, zinc sulfide, magnesium fluoride, titanium dioxide, silicon dioxide, zirconia, cobalt, gallium, selenium and other metals. Copper, molybdenum, silicon, germanium and other metals are commonly used in the optical materials of reflectors.

It can be coating visible light color film, aluminum reflective film, AF anti-fingerprint film, low melting point organic film, visible light spectroscopic film, visible light anti-reflection film, etc

- **Equipment Features**

IKS-OPT2700 large area optical film coating system, using re – optimization vacuum chamber structure, innovative cryogenic pump layout, stable work piece rotating frame design, advanced electron beam evaporation system, adjustable uniformity adjustment device and the humanized automatic coating process control, to achieve a stable vacuum process environment, obtained the best coating process, got high quality coated products.

1. Chamber Size;Φ2700×H1670	8. floor space:L6×w5.5×H3.5m
2. Vacuum degree: ultimate vacuum:6×10^{-4}Pa(No load for 24 hours without heating)	9.Weight:8000kg,Floor weight ﹥1000kg/m2
3. Leak rate:＜4×10^{-3}Pa×L/S(Helium leak checking)	10.Temperature: At room temperature to 250 ℃, the temperature uniformity ±5%
4. Working Vacuum:6×10^{-3}Pa(Automatic process start-up)	11.Power Supply:Three-Phase, 380V，50Hz，60-100KW
5.Low Vacuum:10 minutes＜10Pa	12.Water Cooling: Chamber flow ＞ 4000L/H,Pump flow ＞ 1800L/H, Refrigeration Compressor＞1600L/H
6. High Vacuum:6 minutes＜8×10^{-3}Pa	13.Warm Water: Evaporation Source1800L/H,35-60℃
7. Vacuum measurement: Whole-process monitoring and real-time point collection	

- **Technical Parameters**

Film thickness monitoring	1.PLC integrated control 2. Fine film deposition,0.01nm/s 3. Fast ripe corresponding, linkage with electron gun
Flow Control	Control Range: 3~100sccm，5-500sccm, Precise linkage with ion source, synchronous control, flow control, Stable output, stable ion energy is stable
E-beam Source	Type:10KW, A 270 - degree deflection. Ripple less than 0.5%, precise control spot shape and size, System control operation stability and high accuracy. Gun type: tungsten filament, durable type
Resistance evaporation source	Type: Tungsten boat evaporates by heating. Quantity: Two sets of electrodes, choose installation. Suitable for special coating process, aim at the function materials or metal materials to achieve the function of evaporation
Ion source	Type:4KW Hall ion source, High beam, wide Angle of divergence, detachable anode, maintenance and cleaning is very simple
Control System	PC interface: 17inches,1set. TP touch screen:15 omcjes.1set. Main System:IKS Automatic programmable logic control. Automatic process control system developed by IKS PVD, It's an intelligent operating system for real-time recording of processes and feedback of faults.Perfect integration, humanized design, and meet the personalized needs, to provide safe and intelligent design of the operation system,Accurate control of operation.
Safe design	Main circuit protection switch, ground protection, Component abnormal alarm, System operation real-time monitoring protection

Product Superiority

Technological Innovation

1. Reasonable integration of products and technological innovation results, improve the process environment, to achieve stable operation of the coating system!

2. Product structure design innovation is reasonable, firm, concise, maintenance is convenient! (user stance design!)

3. Operation and operating system innovation development, simple operation, efficient and practical!

4. Products and process technology to achieve high quality coating process, improve efficiency, uniformity, excellent repeatability!

5. Achieve intelligent control of coating system operation!

6. Safety system optimization, fault prompt, detailed solve solution!

7. High efficiency, production and management cost reduction!

Technological Feature

1. Product design, by perfect IKS technology and product performance seamless docking integration, to create reliable, stable Fixed, safe, intelligent coating system!

2. Vacuum acquisition, re-optimized design of the vacuum acquisition system, to meet the rapid and stable vacuum environment!

3. Evaporation source and ion source, reasonable layout and high quality processing technology, commissioning technology, to achieve the process

Process automatic adjustment, electron beam innovative structure and accurate rate guarantee material deposition more accurate and stable!

4. Automatic operation control system, the new development of accurate and stable system! Simple setup, easy operation!