

ecoptik[®]

DOME LENSES

Professional custom processing dome lens more than ten years.
Recognized quality worldwide.



CONTENTS

1

EXPERT IN DOME PRODUCING

Ten years of dedicated research, processing technology continues to improve, to achieve unique quality standards

2

SPECIFICATIONS OF DOME

High-precision, customizable processing solutions.

3

APPLICATIONS OF DOME

From environmental monitoring to national defense technology, a wide range of applications



PART ONE

EXPERT IN DOME PRODUCIN

Ten years of dedicated research, processing technology continues to improve, to achieve unique quality standards



The basic information

ECOPTIK is located in Changchun, China, covering an area of 2,000 square meters, employs 120 workers. Set R & D, production, sales, and after-sales.

Processing capacity

Using advanced processing equipment, including a full set of KWANGJIN optical polishing machinery.

Machined sizes range from $\varnothing 10\text{mm}$ to $\varnothing 300\text{mm}$.

Quality management system

Strict quality control, high precision measuring instruments, including ZYGO laser interferometer, digital video measuring instrument, eccentric instrument



Excellent service

Provide design, processing service according to customer's needs, and guarantee 180 days of quality after-sales service



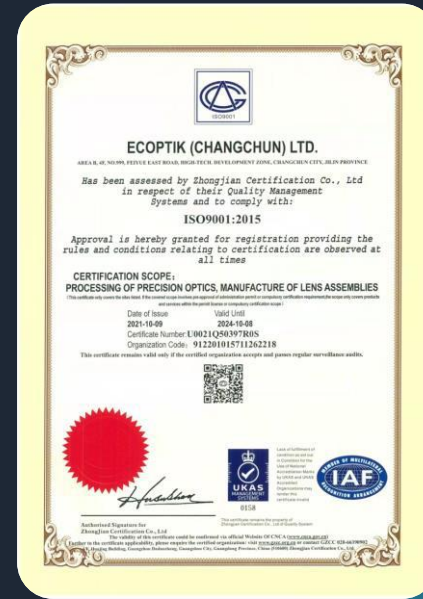
CERTIFIED ECOPTIK



GB/T 19001-2016 ISO 9001:2015
STANDARD CERTIFICATION



GB/T 19001-2016 ISO 9001:2015
STANDARD CERTIFICATION



ISO 9001:2015
CERTIFICATION



PART TWO

SPECIFICATIONS OF DOME

High-precision, customizable processing solutions.

DESCRIPTIONS OF DOME

CHARACTERISTICS

Ecoptik transparent optical glass dome lens is composed of two parallel optical surfaces, (A convex surface & A Concave surface). Normally we can control the parallel tolerance $<\pm 2\mu\text{m}$. A perfect parallel surface, in the imaging, the image does not distort, and in the measurement of light, the light does not distort. Ecoptik Optical Dome, the optical properties are unique, which are produced by the optical technology of optical grinding and polishing. Ecoptik large clear optical glass dome lens mainly are hemisphere, hyper-hemisphere, and customized designing. Whether it is a visible dome, UV dome, or IR dome, Ecoptik Dome has been confirmed in the international market.

1

Two surfaces that are almost perfectly parallel

- To ensure that the two surfaces are absolutely parallel, the eccentricity tolerance and radius of curvature tolerance must be very well controlled.
- The current DOME parallel tolerance of ECOPTIK is $< \pm 2\mu\text{m}$.

2

High precision surface accuracy ensures imaging without distortion

- Although limited by the spherical shape, the overall surface fringe cannot be measured at present, ECOPTIK tries its best to improve each local surface fringe within the detectable range.
- At present, the ECOPTIK dome local surface accuracy can reach $\lambda/10$

3

Unique hyper-hemispheric processing capability

- The super-hemisphere is the part of the height beyond the spherical core, and ECOPTIK has a practical patent for the process.
- The maximum range can exceed the radius by 3mm.



TYPE OF DOMES



Ultraviolet (UV) Dome

UV dome mainly uses quartz material with high UV light transmittance. Such as fused quartz (JGS-1) Coning7980, borosilicate glass and so on. These materials also have a very hard surface, abrasion resistance and high temperature resistance. If the environment is special, such as deep sea (large water pressure), high temperature environment, etc.



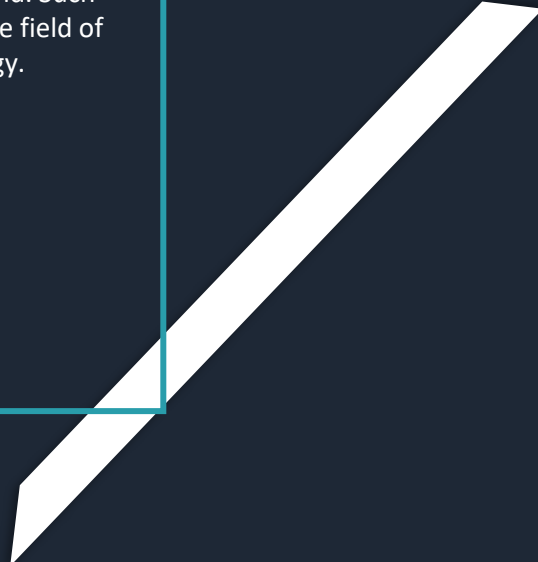
Visible (VIS) Dome

This is the most common dome product. Substrate selection of high quality of visible glass, in the visible band has a very high transmittance. Based on material cost and processing cost, visible light dome is the best choice for common applications.

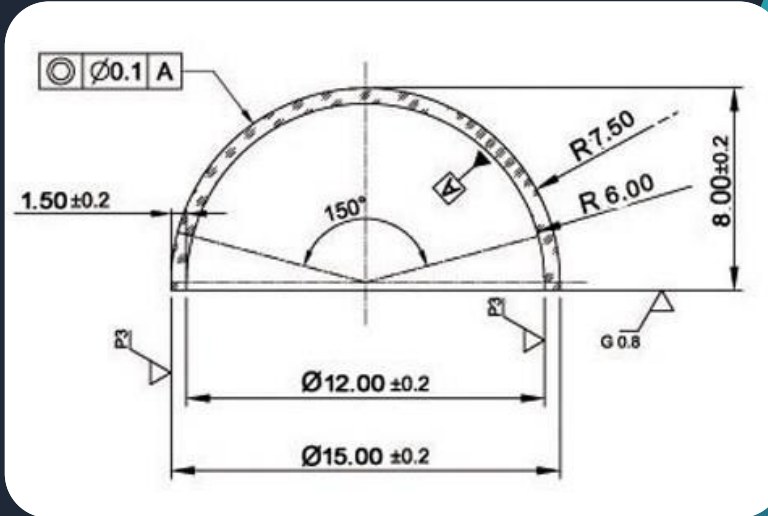


Infrared (IR) Dome

Infrared dome, as the name implies, uses infrared materials, such as sapphire, silicon, zinc selenide, etc., mainly used in the infrared band. Such products are mainly used in the field of defense science and technology.



SPECIFICATIONS OF DOMES



- 1, Substrate: UV material (fused silica JGS1, Coning 7980, Borosilicate glass)
Visible material-----Optical glass (Schott N-BK7, N-BK10, WG295, N-K5, etc.)
IR material (Fused Silica JGS3, Sapphire, Silicon, ZnSe, etc.)
- 2, Dimension: 10mm-350mm
- 3, Thickness: 1mm-10mm
- 4, Surface Quality: 60/40, 40/20, 20/10
- 5, Surface fringe: 10(5)-3(0.5)
- 6, Coating: Antireflection (AR) Coating
- 7, Strengthened via heat treatment (tempering)

PRODUCTS LIST OF DOME

Type No.	Out diameter (mm)	Height (mm)	Wall thickness (mm)
ECO-D-10	10	5	1
ECO-D-15	15	8	1.5
ECO-D-24A	24	12	2
ECO-D-24B	24	13	2
ECO-D-25A	25	12.5	2
ECO-D-25B	25	12.5	4
ECO-D-25C	25	14.5	2
ECO-D-28A	28	14	1.5
ECO-D-28B	28	16	1.5
ECO-D-30A	30	15	2
ECO-D-30B	30	16	2
ECO-D-30C	30	16	4
ECO-D-30D	30	16.5	2
ECO-D-30E	30	17	2
ECO-D-32A	32	16	2
ECO-D-32B	32	16	4
ECO-D-32C	32	17	2
ECO-D-32D	32	17	4
ECO-D-36	36	18	2
ECO-D-40A	40	20	2
ECO-D-40B	40	21	2
ECO-D-50A	50	25	2
ECO-D-50B	50	25	4
ECO-D-50C	50	26	2
ECO-D-50D	50	26.6	2
ECO-D-50E	50	28	2
ECO-D-60	60	30	5

Type No.	Out diameter (mm)	Height (mm)	Wall thickness (mm)
ECO-D-70A	70	35	5
ECO-D-70B	70	35	8
ECO-D-75	75	37.5	3
ECO-D-76	76	38	6
ECO-D-80	80	40	4
ECO-D-100A	100	50	2
ECO-D-100B	100	50	4
ECO-D-100C	100	50	5
ECO-D-127	127	50.8	4
ECO-D-136	136	60	4
ECO-D-140A	140	70	4
ECO-D-140B	140	70	12
ECO-D-170	170	56	6.5
ECO-D-180	180	60	7.5
ECO-D-184	184	61	7
ECO-D-190	190	95	5
ECO-D-203	203	80	4
ECO-D-212	212	106	6
ECO-D-230	229.6	87.4	8



PART THREE

APPLICATIONS OF DOMES

From environmental monitoring to national defense technology, a wide range of applications

APPLICATIONS OF DOME



Meteorological monitoring

A device that collects sunlight in a total solar radiometer. The nearly absolute parallel design makes no refraction loss of light, perfect record of the radiation data of sunlight



Deep sea exploration

ROVs is a mainstream imaging instrument for deep-sea exploration at present. dome not only provides a perfect imaging protection system, but also ensures that the imaging will not be distorted due to its high-precision surface, making it a helpful aid for deep-sea exploration. ECOPTIK's dome is currently operating at a depth of 6,000 m.



National defense and security

Dome's application in the field of defense should not be underestimated, mainly as a missile guide head. The high precision infrared dome greatly improves the accuracy of the missile



Observation to space

Dome in all-sky camera is designed to provide high quality sky images for weather and meteor observations. The purpose of these systems is to carry out All or Full Sky (180°x180°) surveillance of the night or day sky, and in a continuous fashion. It is possible to assess, in real time, the night sky quality, and to record fast phenomena (meteors and fireballs) or slower (satellites, rockets, noctilucent clouds, zodiacal light, aurora, airglow ...).

ecoptik®

Thank you!