



# ecoptik

ECOPTIK (CHANGCHUN) LTD

## **YOUR CUSTOMIZATION OPTICS PARTNER**

We have the most advanced modern technology for manufacturing and testing all kinds of precision optical components. We hold a number of invention patents and have passed the national high-tech enterprise certification.



## CONTENTS

Next, you will have an in-depth understanding of our company from the following four aspects

1

Company Profile

2

Our Products

3

Manufacturing and QA  
Assurance

4

Our Objectives

ONE

## Company Profile



About us



Development path



Honor certificate



Core value

ONE

TWO

THREE

FOUR

# About us

## 1 History

- ✓ Over 10-years of professional experience in manufacturing optical components since 2021.
- Located in the city of Changchun “The optics culture base of China”

## 2 Scale of company

- ✓ Area of 2000 square meters, supported by 82 people in our company, including 8 optical engineers, 46 Technicians and 12 Sales team etc.

## 3 Business scope

- ✓ R&D, Manufacturing & Sales



# About us

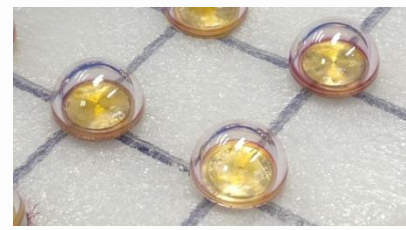
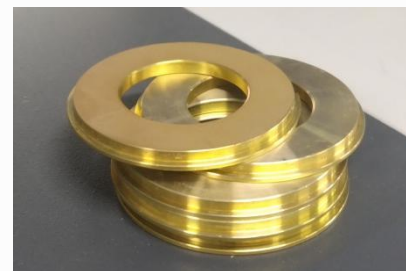
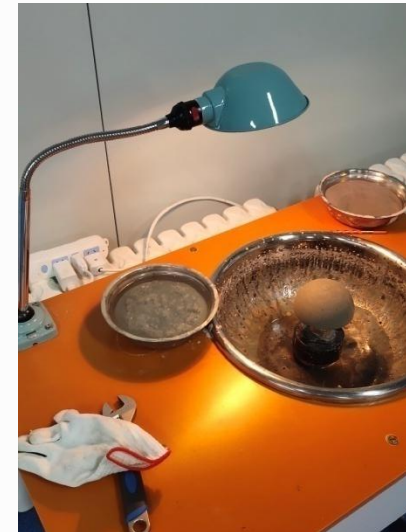
Aerial view



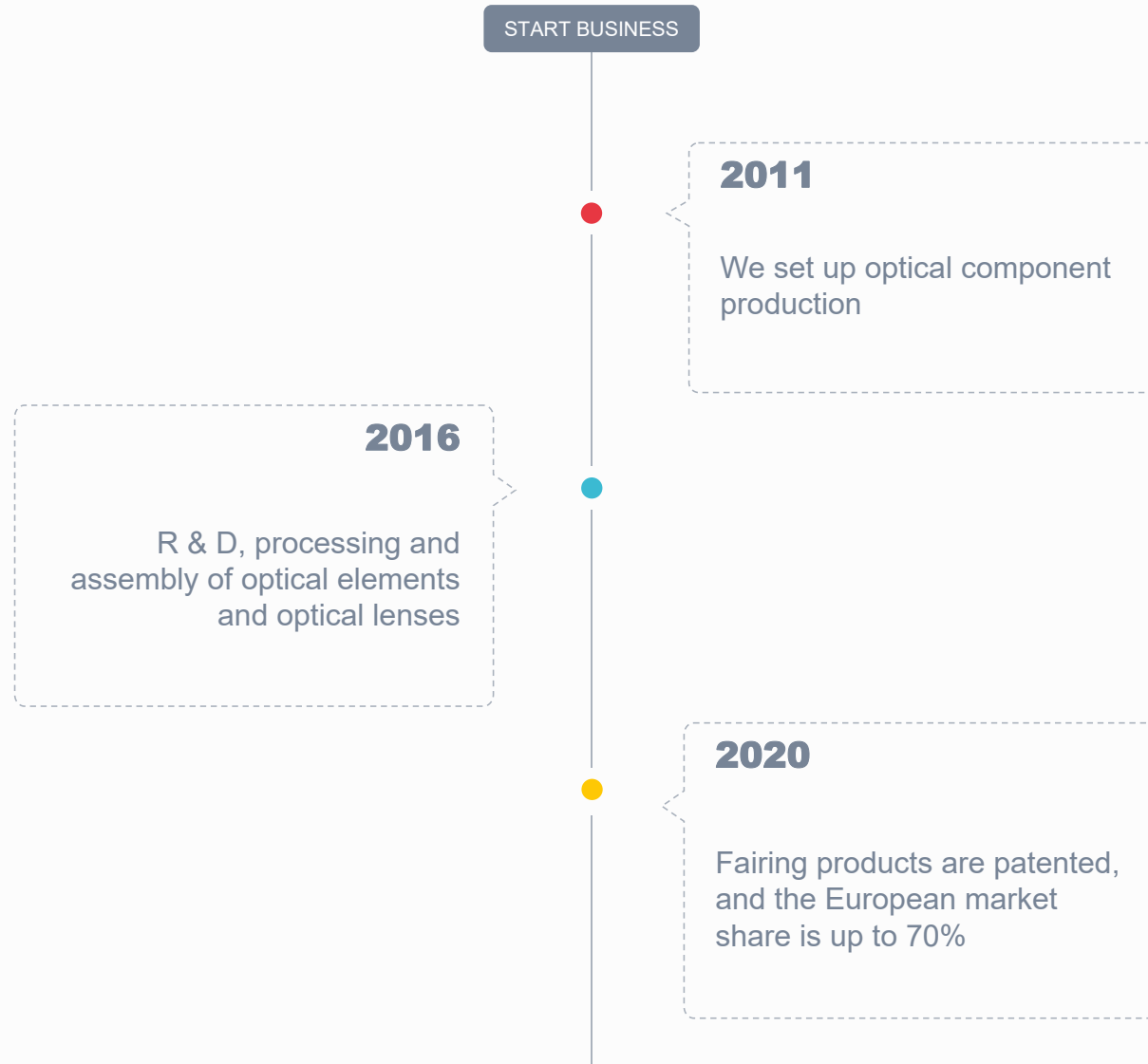


# About us

Factory real shot



## Development path





This concludes the timeline from 2011 to 2021

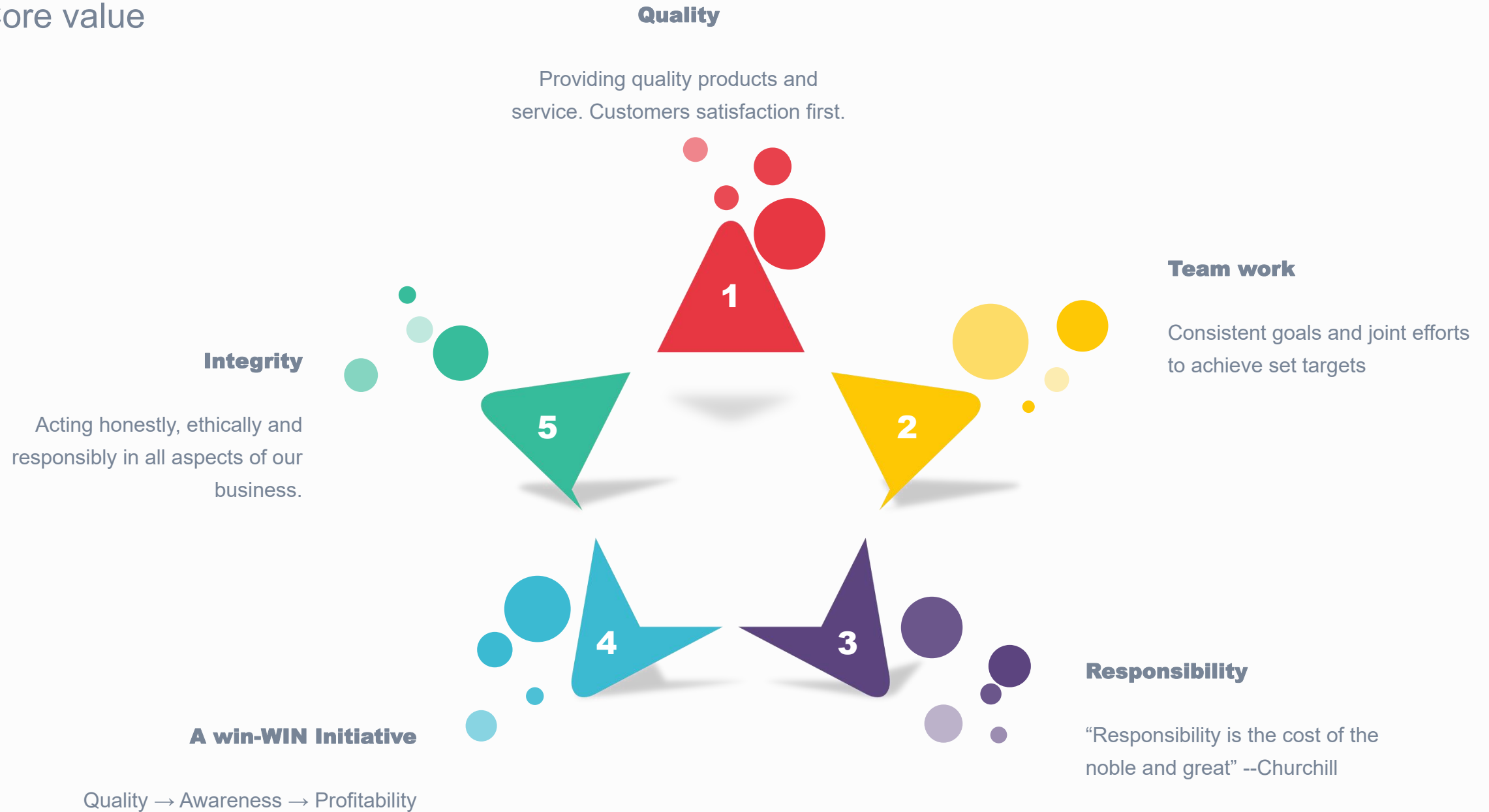
In the future, we will continue to expand our company and further improve and make breakthroughs in scientific research and technology



# Honor certificate



# Core value



TWO

## Our Products



Optical components



Optical Assemblies



Optical thin film Service



Optical Design Service

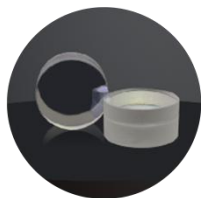
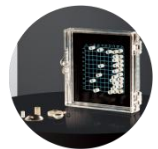
ONE

TWO

THREE

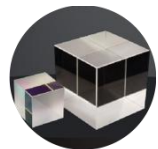
FOUR

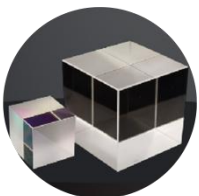
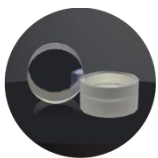
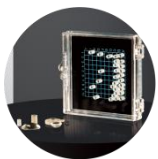




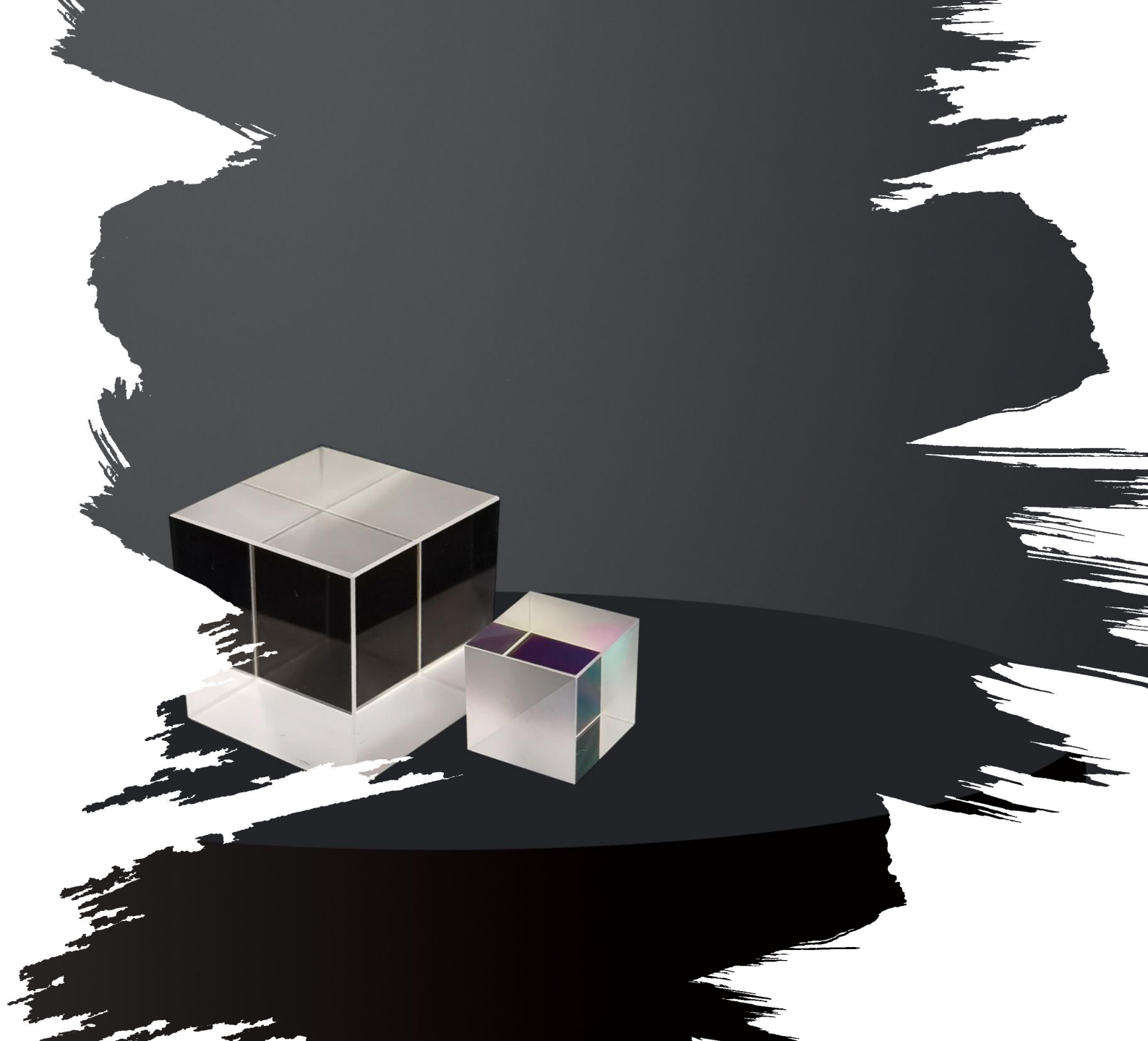
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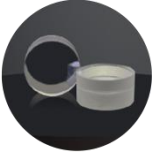
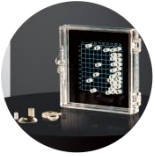
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**Prism**

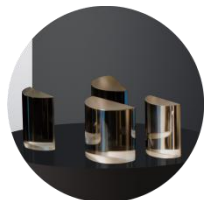
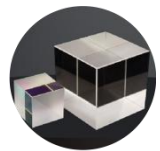
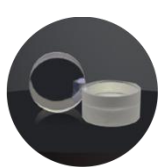




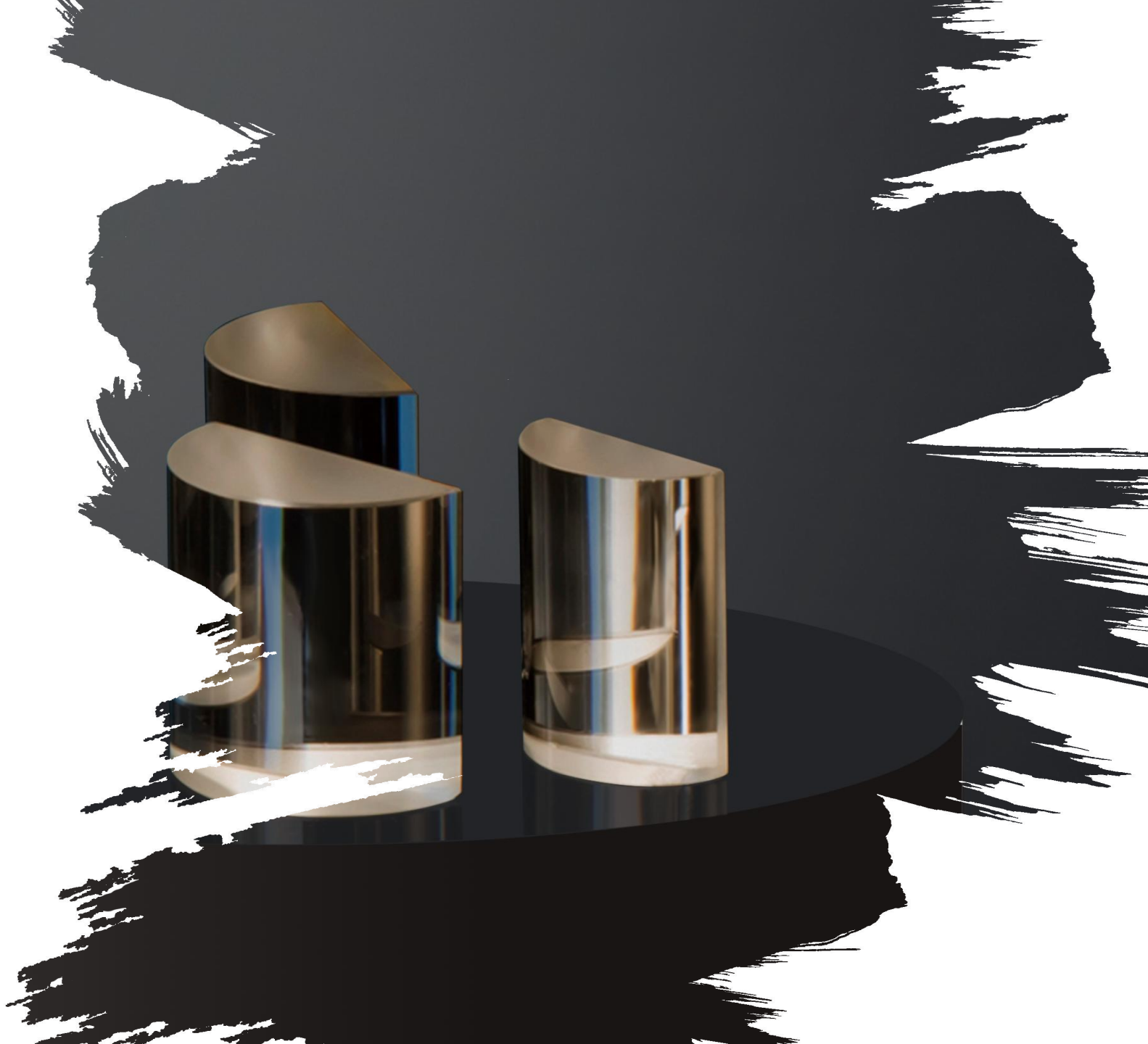
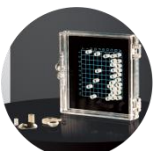
## **Dome**

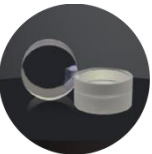
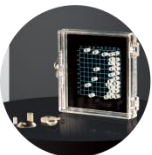
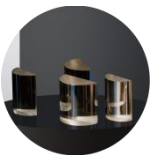
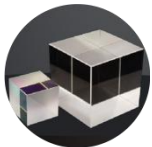






## Cylindrical lens



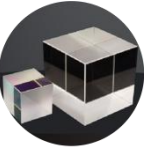
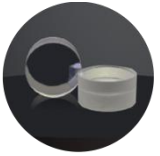
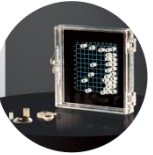


## Reticles

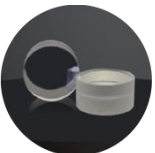




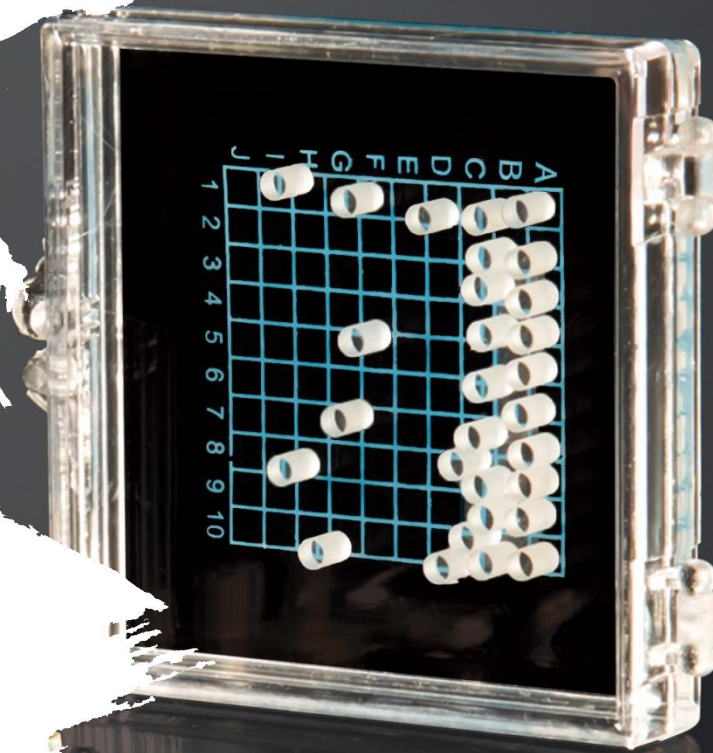
## Infrared optics





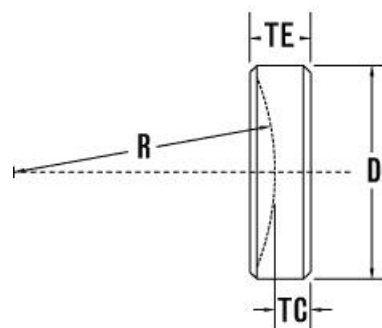


## Micro optics

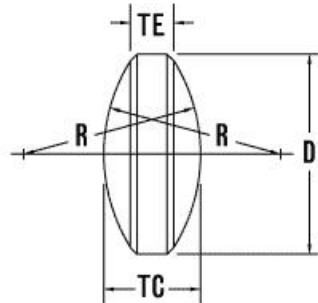


# Optical components

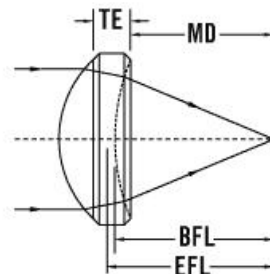
## Spherical lens



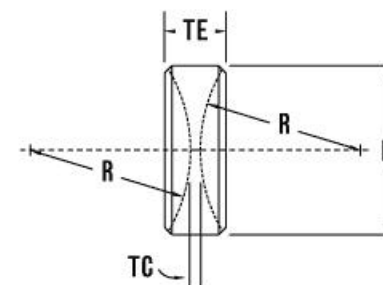
Plano/Concave



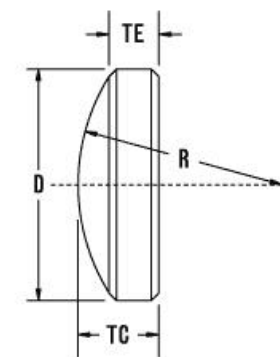
Bi-Convex



Meniscus



Bi-Concave



Plano/Convex

Double convex

Plano concave

Plano convex

Double concave

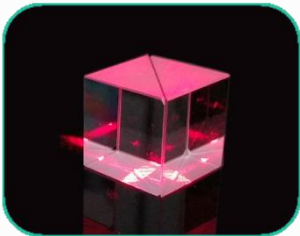
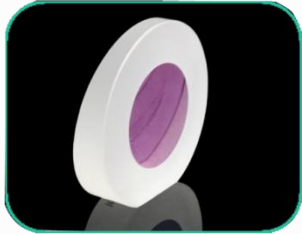
Meniscus

Achromatic cemented doublet

Achromatic cemented triple

# Optical components

## Prism



Right angle prism

Equilateral prism

Foursquare prism

Penta Prism

Wedge prism

Cube prism

Roof prism

Dove prism

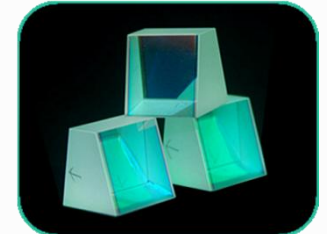
Powell prism

Paul prism

Rhomboid prism

Trapezium prism

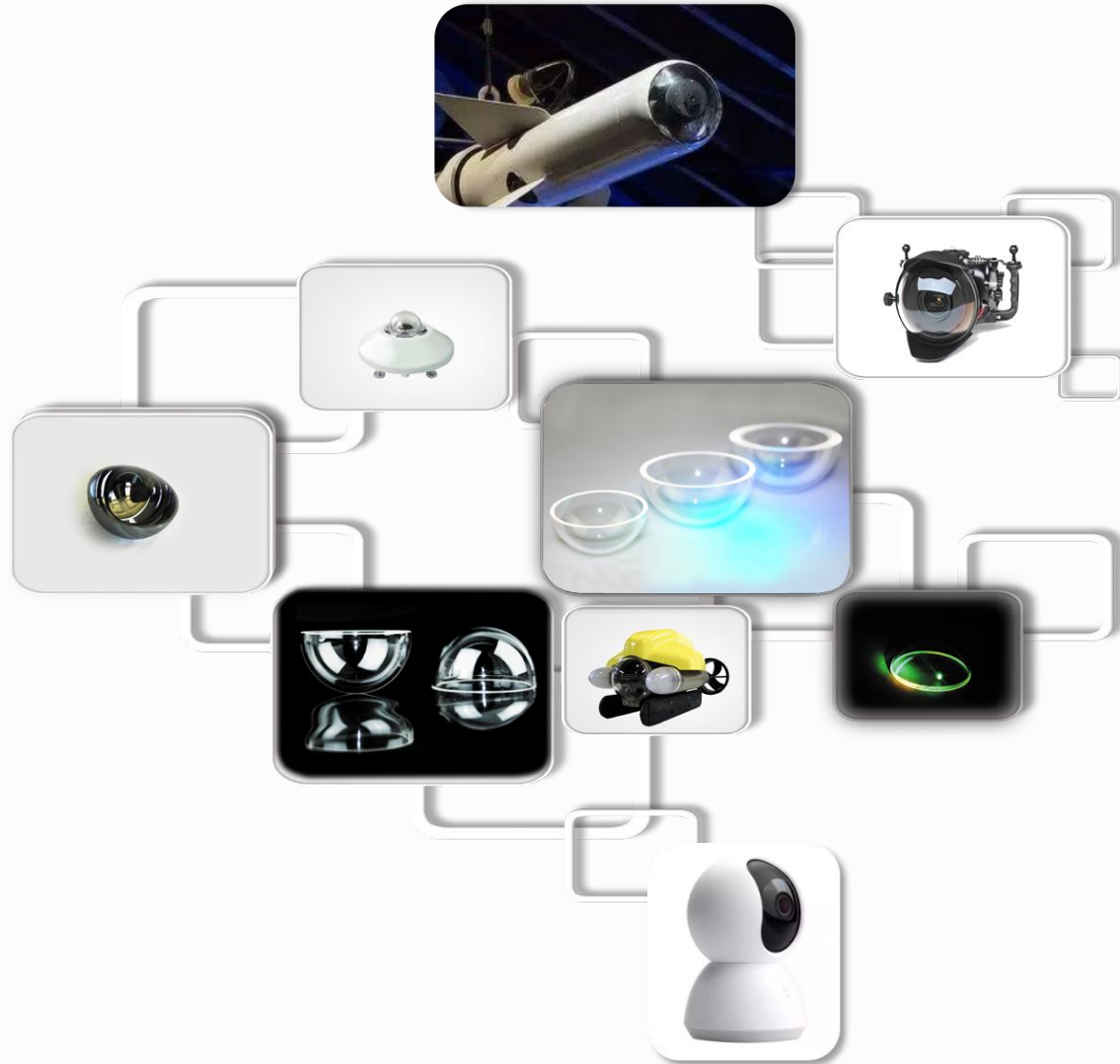
Corner prism





# Optical components

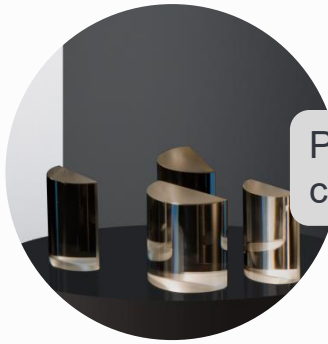
## Dome



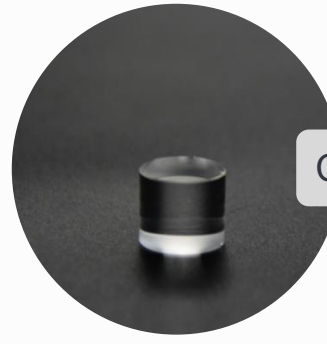
- ✓ High numerical aperture (NA) optical domes from ECOPTIK is produced with a high optical technology of optical grinding and polishing.
- ✓ An optical dome is essentially a window: two parallel surfaces, curved. The dome protects and isolates critical sensors and electronics from the environment with minimal disruption to the optical path.
- ✓ ECOPTIK Optical's domes are hemisphere, hyper-hemisphere with a customized design to respond to our customers need whether the material is visible, UV or IR. Our qualified engineers are confident with controlling a parallel surfaces tolerance of  $\pm 2\mu\text{m}$ .
- ✓ ECOPTIK Optical's domes are used in submersibles, underwater camera systems, defense technology, weather monitoring and optical imaging systems. Our domes are designed to withstand sea salt, spray, and other challenging environmental conditions, by applying Diamond-like coatings in order to improve its performance in the field.

# Optical components

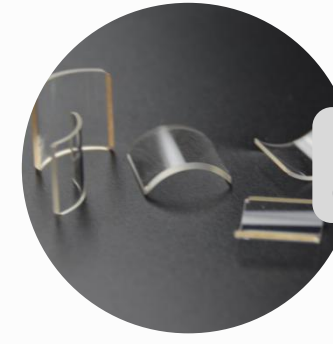
## Cylindrical lens



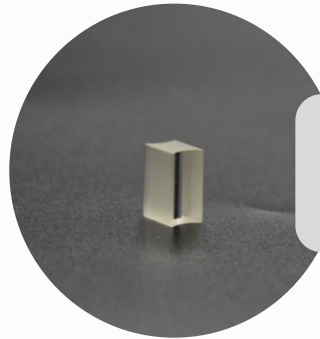
Plano convex  
cylindrical



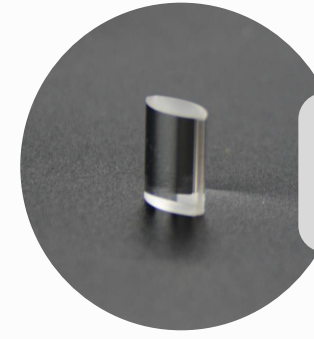
Cylinder



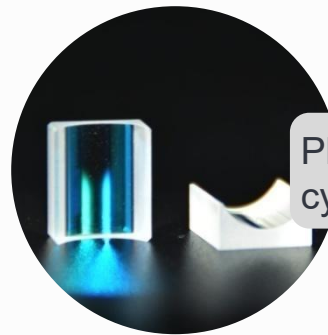
Meniscus  
cylindrical



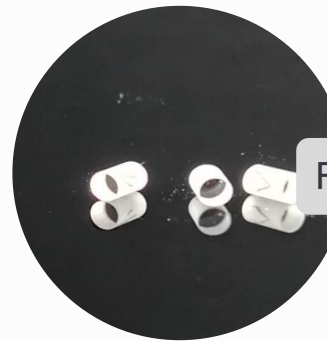
Double  
concave  
cylindrical



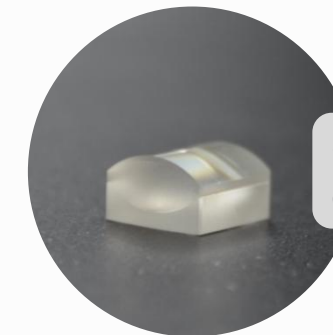
Double  
convex  
cylindrical



Plano concave  
cylindrical



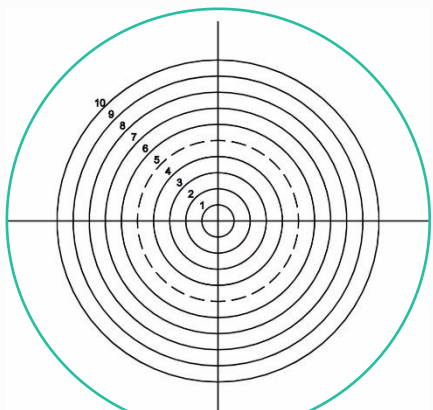
Rod



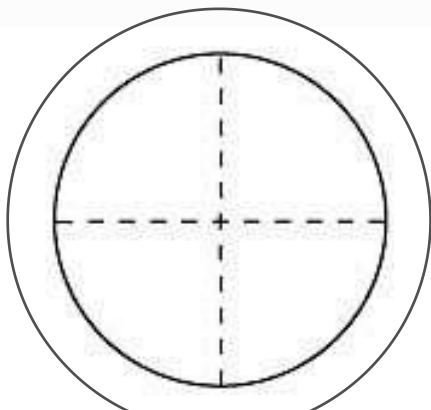
Cemented  
cylindrical

# Optical Components

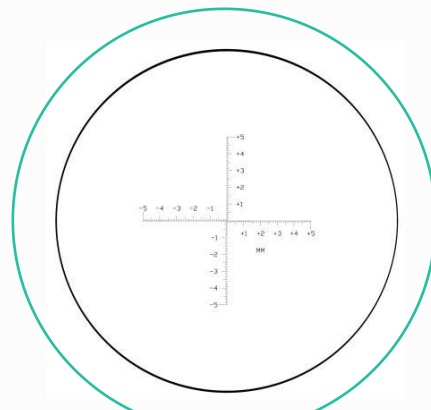
## Reticles



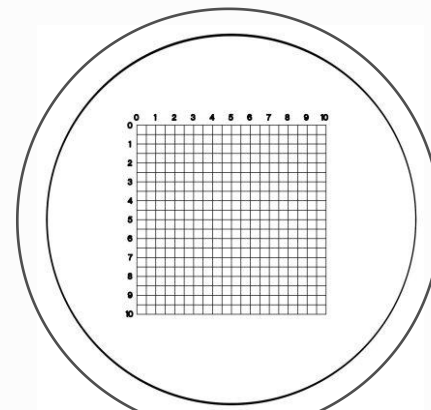
concentric circles with crosshairs



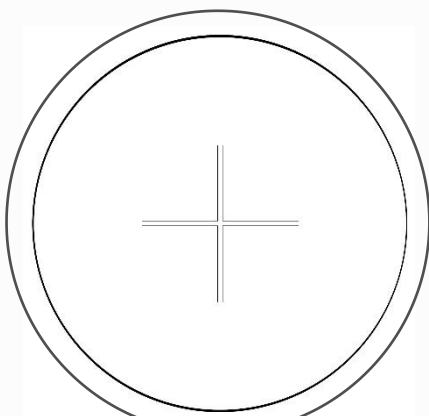
Dashed crosshairs



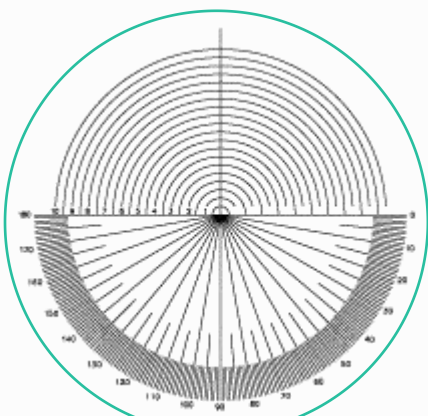
Dual axis linear scale



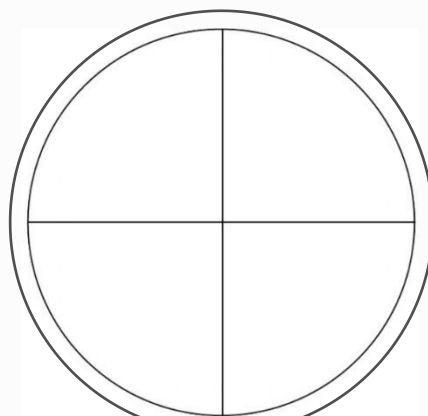
labeled grids



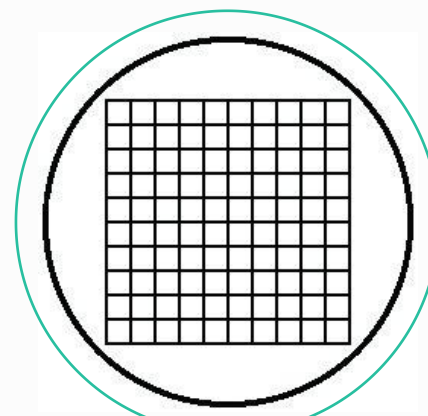
Parallel crosslines



Protractor



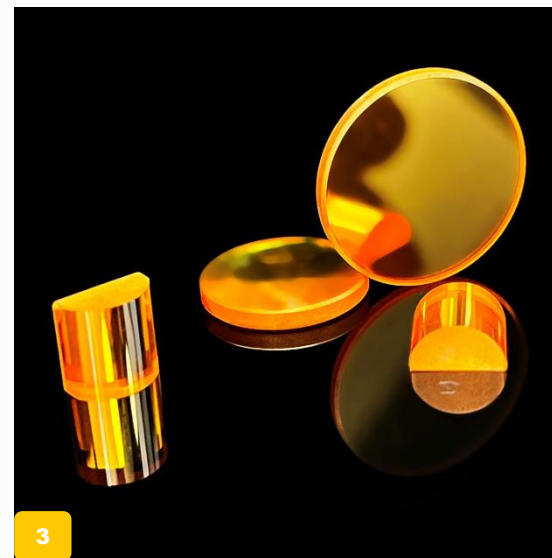
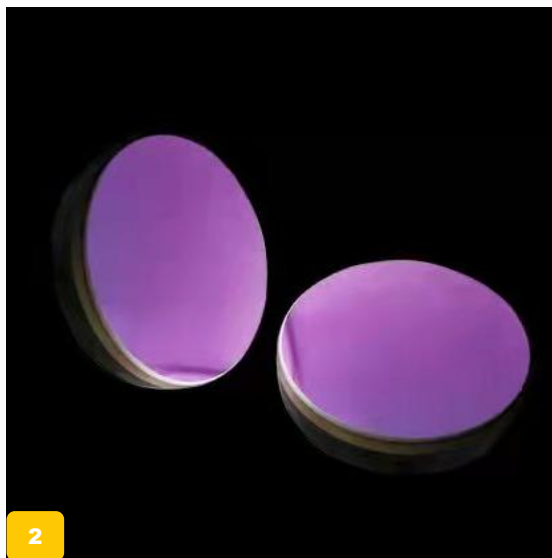
Simple crosshairs



Simple grids

# Optical components

## Infrared optics

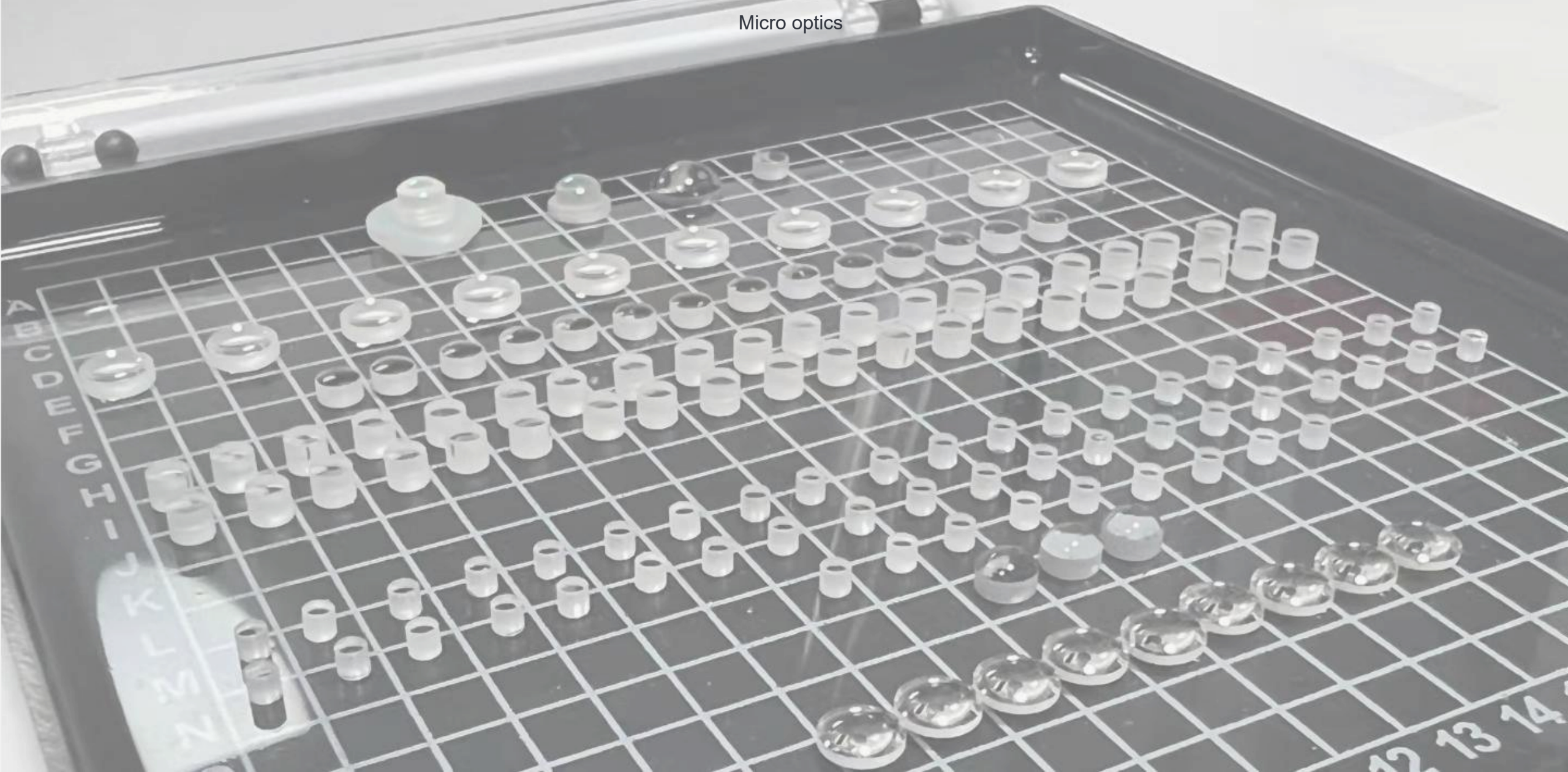


- 1 Sapphire
- 2 Germanium (Ge)
- 3 Zinc selenide
- 4 Silicon (Si)



# Optical components

Micro optics



## Optical Assemblies



Anamorphic lenses



Glass Dome Port



Fisheye lens



Medical lens

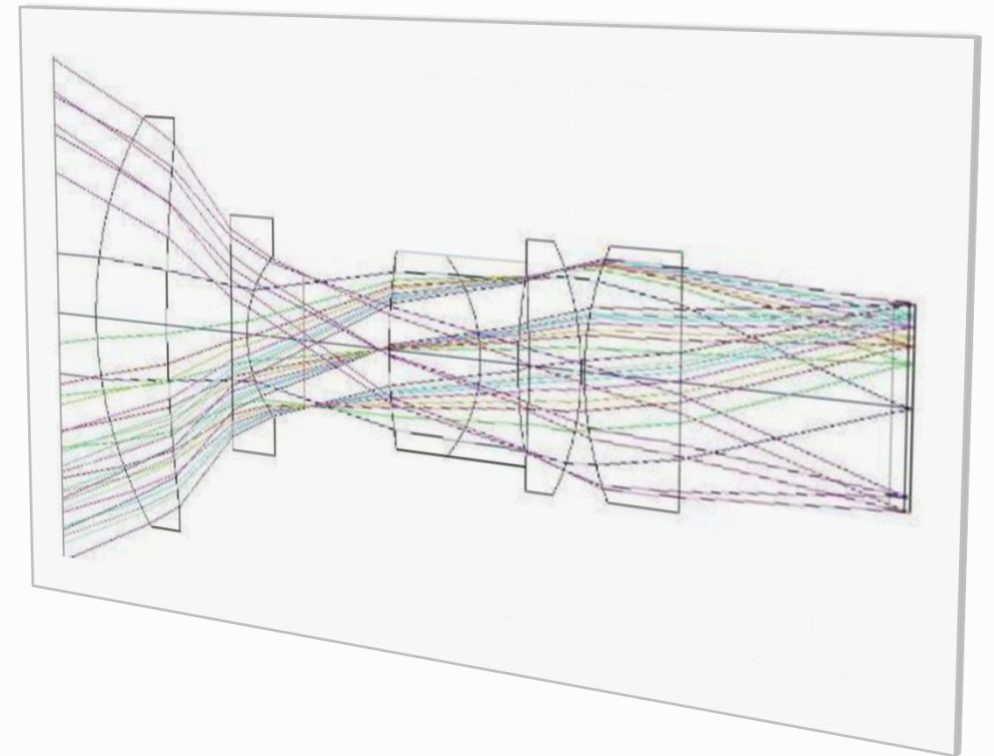
Our optical assemblies are manufactured according to our customers requirements

# Optical Design service

Dome

✓ ECOPTIK is not only an optical components manufacturer, but also a professional optical service designer.

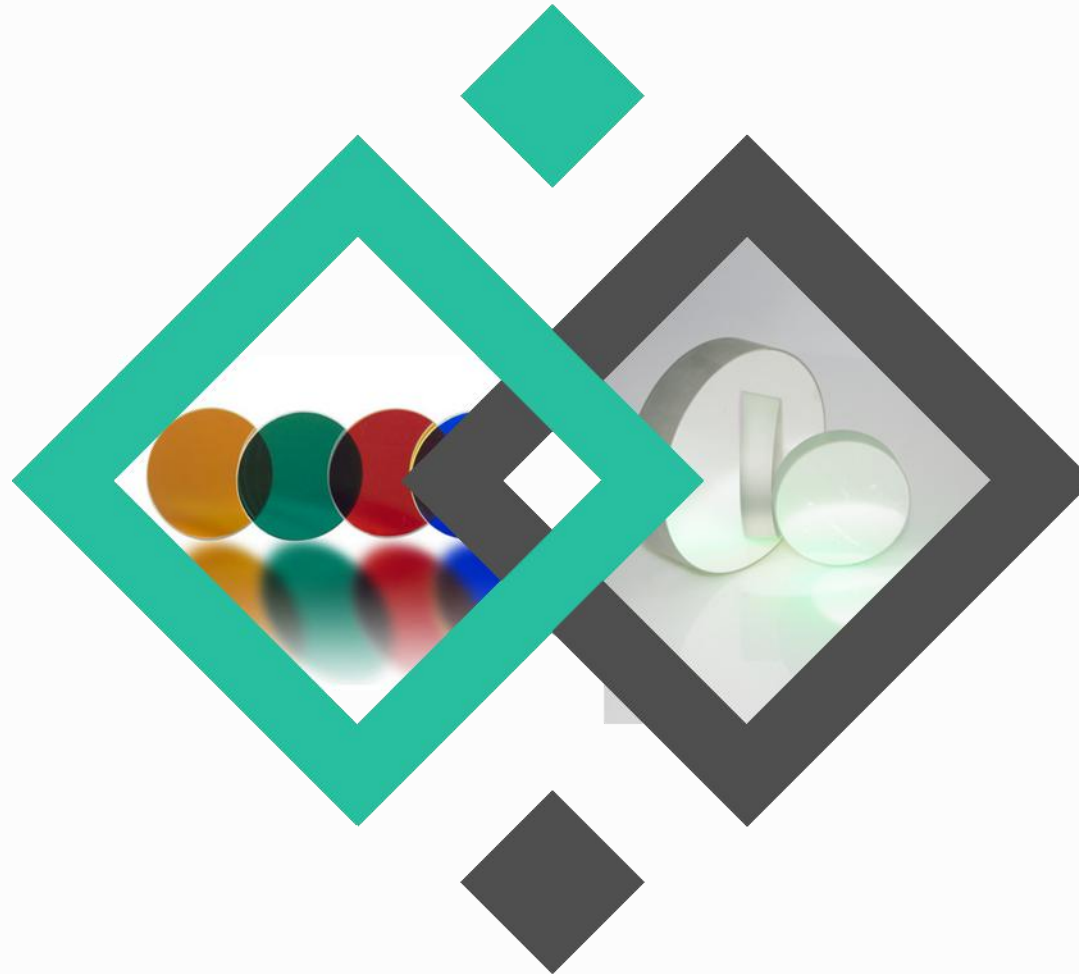
- ✓ We provide a professional optical consultancy services including:
- ✓ Imaging optical design (mobile lens, scanning lens, vehicle lens, monitoring lens, infrared lens, projection lens, other imaging optical system)
  - ✓ Lighting system design
  - ✓ Laser system design (laser system)
  - ✓ Laser rangefinder lens
  - ✓ Medical optical lens
  - ✓ Solar collector optical path design
  - ✓ Coating system design



# Optical thin film coating service

## Filters

- Band pass filter
- Long pass filter
- Short pass filter
- Notch filter
- Neutral density filter
- Dichroic beam splitter



## Coating Service

- Anti-Reflection Coating (AR)
- High Reflective Metal Coatings
- High Reflective Coatings
- Partial Reflective Coatings
- Beam Splitter coatings



**THREE**

## Manufacturing and QA assurance



Production process



Quality management system

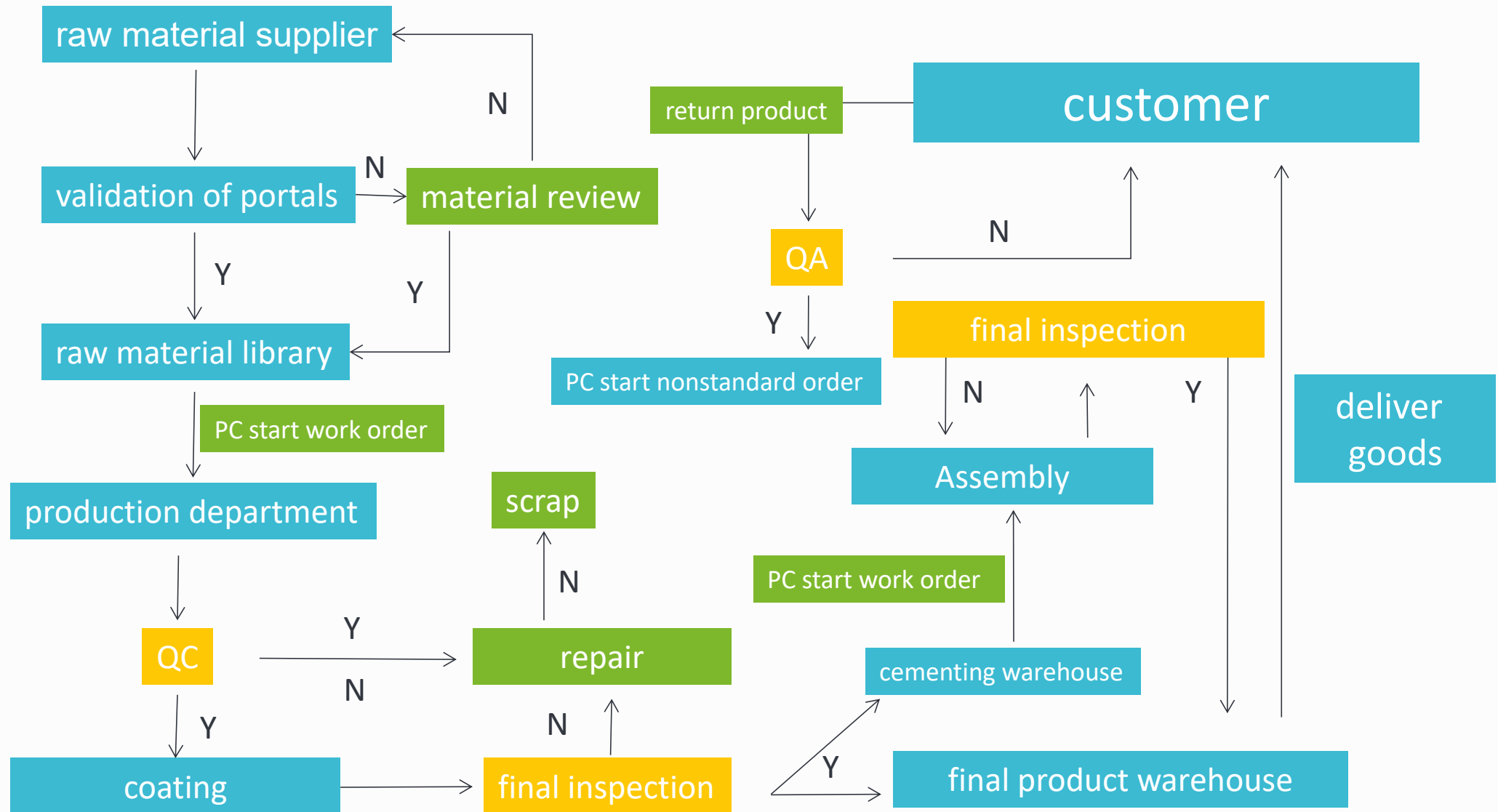
ONE

TWO

THREE

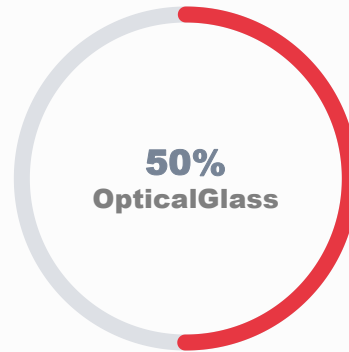
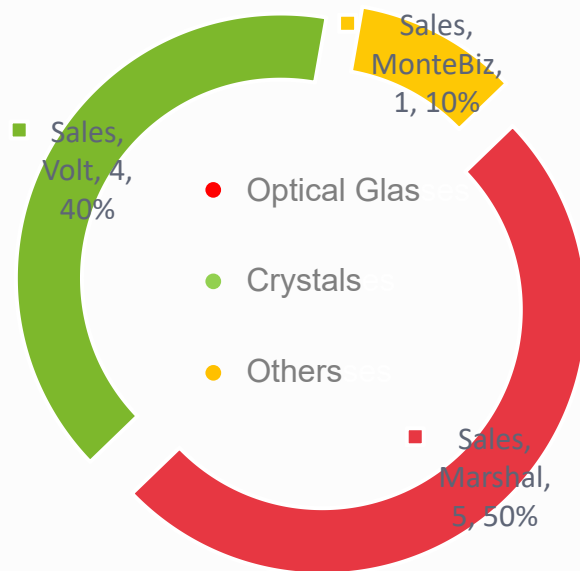
FOUR

# Production process



# Production process

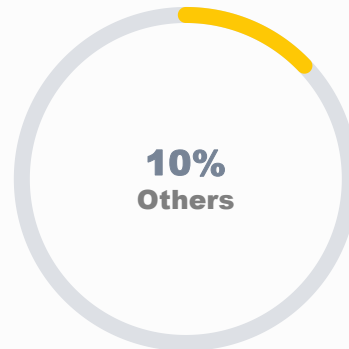
## Substrates



**Optical glass:** Main glass from Schott, CDGM, HOYA, Corning



**Crystal Material:** Sapphire, ZnSe, ZnS, Ge, Si



**Others, new optical material, such as PMMA**

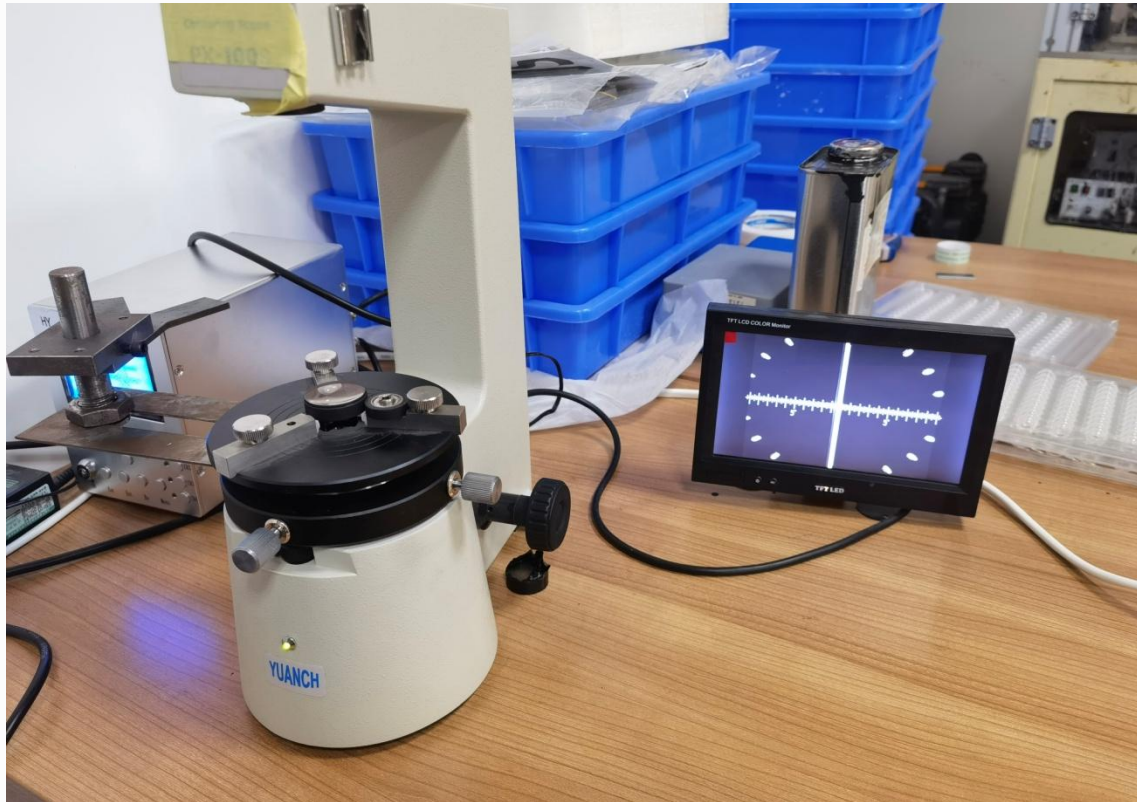
# Production process

## Grinding & Polishing



# Production process

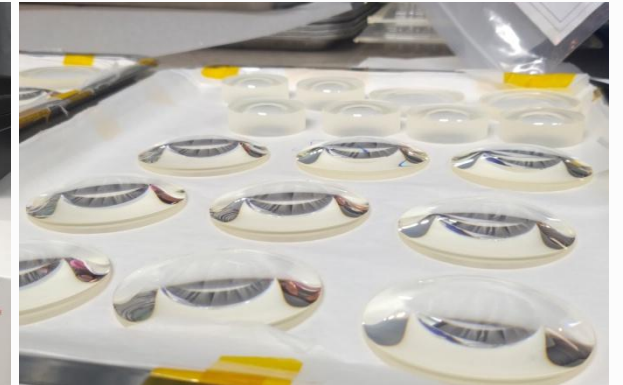
Cemented





# Production process

## Coating



# Metrology

Surface Accuracy — Zygo Laser Interferometer

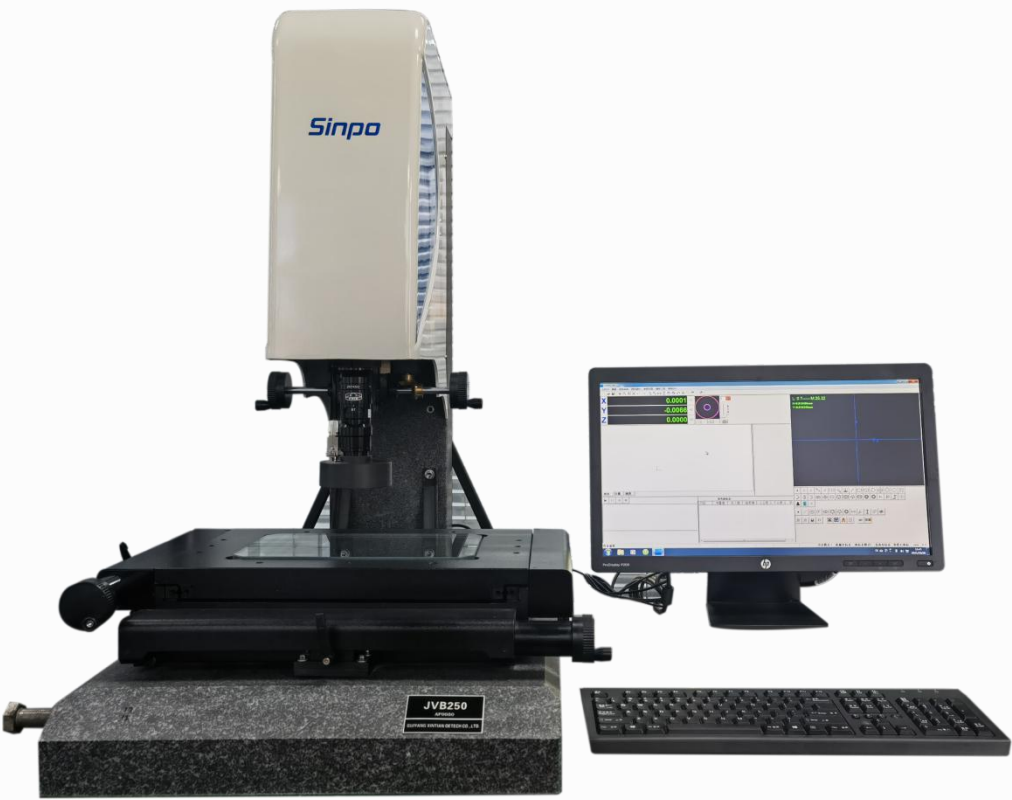


As we know ZYGO continues to maintain the leadership role in surface form metrology using laser interferometry. It main measure radius of curvature, surface fringe and transmission wave front distortion. Meanwhile, it can improve the accuracy and repeatability of the inspection process. Mainly for the flat surface, sphere, cylinder and so on.

- Assuring the high surface accuracy, arrived  $\lambda/20$

# Metrology

Dimension — Video Measuring Machine



Be able to measure the dimensions, angles and positions of various workpieces efficiently. The geometrical parameters of cutter, measuring tool and measuring tool.

Travel(mm)XxYxZ	250x150x100
Measurement resolution	0.5μm
Measurement accuracy	X,Y accuracy: (3+L/200) μm
Repeatability	2μm
Optical magnification	0.7x - 4.5x
Image magnification	28x - 108x

# Metrology

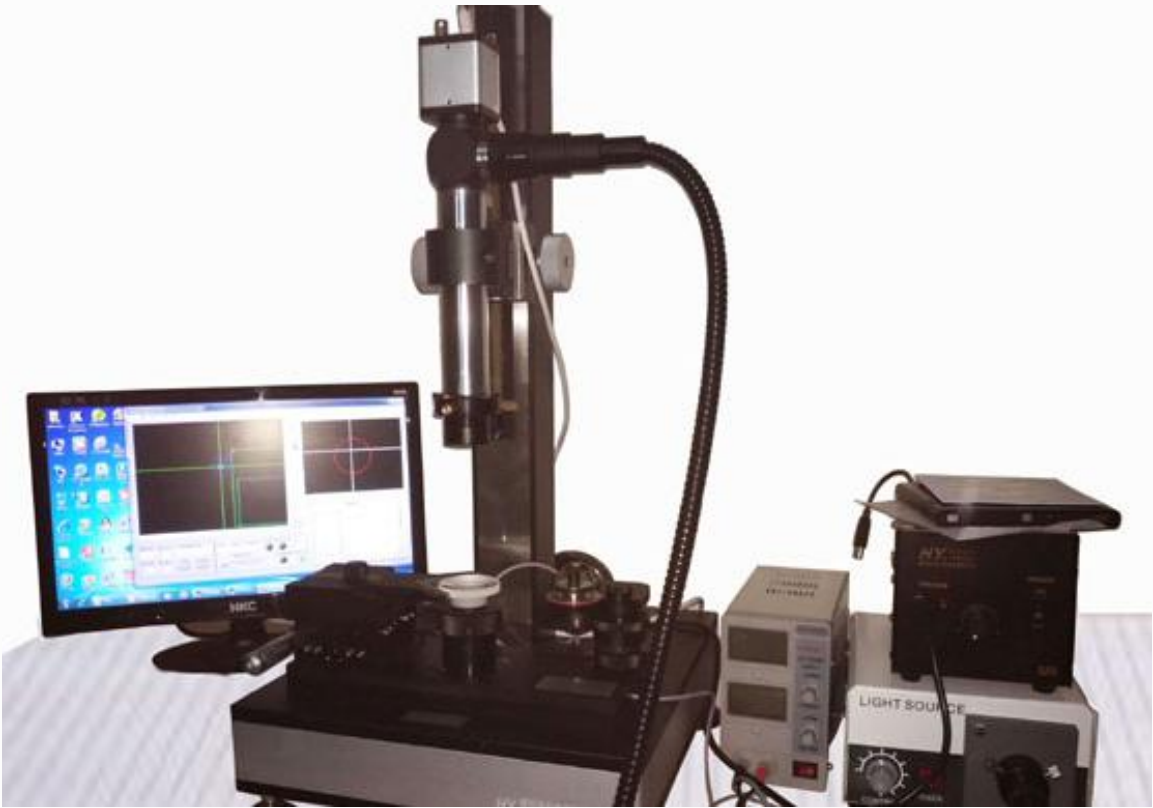
Centration / Radius — Opticentric



- Single lens center deviation measurement.
- Cemented lens center deviation measurement.
- Single lens curvature radius measurement.
- Cylindrical lens center deviation measurement.
- Adjustment of visible light optical system

# Metrology

Focal length — DIGITAL FOCOMETER



Main measure the focal length and centration. Automatic measurement, high efficiency of measurement ; High accuracy, powerful function, wide range of measurement.

	Effort Focal Length (EFL)	Centration
Measurement range(mm)	$\pm 5 \sim \pm 450$	-450 ~ +450
Measurement accuracy	0.03% ~ 0.3%	0.2 $\mu$ m



# Metrology

Angle — Absolute Goniometer



Measuring all kinds of angles, more accurate than comparison goniometer, which is composed of self-aligning light tube, dial and reading head

## Applications

- ✓ Any prism angle
- ✓ Optical wedge angle
- ✓ The parallelism of the plate
- ✓ Pentaprism angle
- ✓  $90^\circ$  right angle prism

# Metrology

Coating — Spectrophotometer (UV-VIS-IR)



Main application fields: spectral performance research and content determination in ultraviolet/visible/near-red/external spectral region suitable for various materials, polymers, petrochemical products, medicines, tobacco, food and crops, etc.

## The key technical indexes

U-4100 Solid sample testing system	
Spectroscopic system	Prism-grating
Sample compartment	Standard
Identification wavelength range	240-2600nm
Detector	Standard integrating sphere
It is very suitable for transmission, reflection and diffuse reflection measurement of solid samples. Different test accessories may be selected for different test purposes, and rich accessories can make the system meet the work requirements better.	
U-4100 Liquid sample testing system	
Spectroscopic system	Prism-grating
Sample compartment	10mm angle liquid pool
Identification wavelength range	185-3300nm
Detector	Photomultiplier tube (UV-VIS) and cold PbS(NIR)
Used for measuring absorbance of liquid samples. The measure wavelength range is widened by directly inject that light beam into the detector. A standard 10mm angle liquid cell is equipped to measure the transmittance and absorbance of liquid samples. Integral sphere accessories can also be used for testing solid samples.	

## Quality inspection



### Inspection:

We use a S/D master

Optics are examined in T% with a 60W bulb on a black background



### Packaging:

Available to suit your need

### Cleaning

Dust free cloths, Pick-Up Tools, Tweezers, Compressed Air, designed to remove residue or debris from an optical component without the risk of damaging its surface.

Variety of cleaning products and cleaning methods depending upon the type of optic to be cleaned and the nature of the care needed.

**FOUR**

## Our Objectives



More direct quality service



Total sales and Growth rate



Our objectives

ONE

TWO

THREE

FOUR

## More direct quality service

### Why ECOPTIK?

One

We are manufacturer and not only distributor – So your are in direct contact with the production.

Two

We have the top technology machines for manufacturing and metrology inspection to insure your components are to specification.

Three

We have highly qualified employees from sales engineers, production, to final inspection.

Four

We have ECOPTIK LTD In Hungry with Multilingual Sales Engineer to insure a better service for the European and USA Market.

Five

We have 10 years expertise in our products working with: Medical, Laser, Commercial, Military, Research institution, Engineering and industrial Manufacturing, and others ...

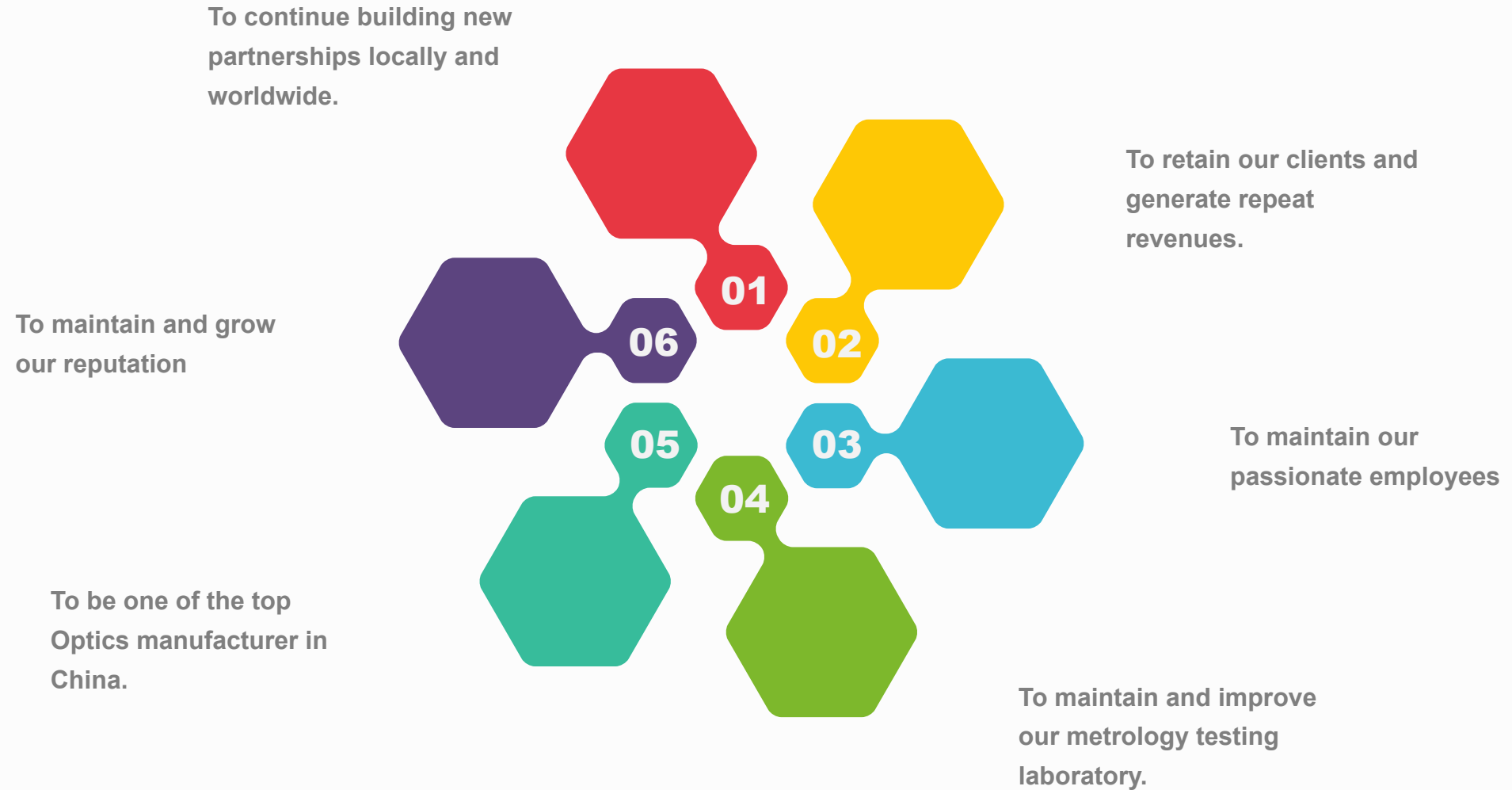
Six

We stock our customer's optics to help them manage their stock level





## Our objectives



# THANK YOU

ECOPTIK (CHANGCHUN) LTD



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Web: [www.ecoptik.net](http://www.ecoptik.net)

Email: [Sales@ecoptik.net](mailto:Sales@ecoptik.net)