



GELINDE

Precision Perfected, Accuracy Redefined

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BALLS

Glass

Ruby

Sapphire

Ceramic



GELINDE

Precision Perfected, Accuracy Redefined



GELINDE Optical Co., Ltd. is a specialized enterprise dedicated to the precision grinding of sphere balls and optical lenses, committed to high-quality customization grinding and standard product grinding. With years of experience and technical expertise, the company provides high-precision, consistent, and optically pristine products and technical solutions for fields such as optics, optical communication, mechanical power transmission, pumps and valves, instrumentation, and more. Serving a wide range of clients, including commercial enterprises, professional laboratories, and renowned universities...

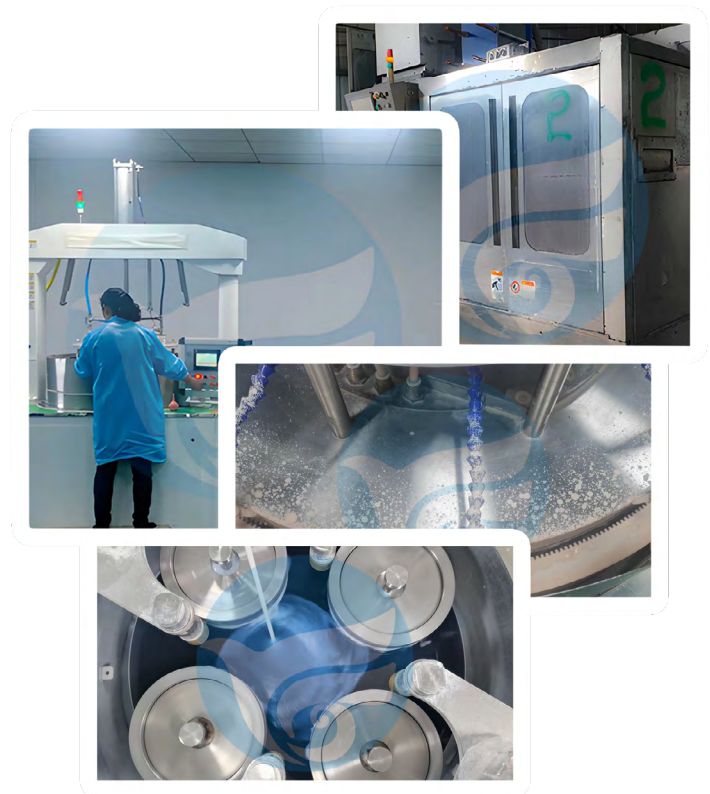
We operate three specialized processing centers: the Optical and Transmission Center in Jiangsu (Xuzhou), the Optical and Transmission Center in Shandong (Zaozhuang), and the Optical Precision Processing Center in Hubei (Xiangyang). In 2023, a global sales and service center was established in Chongqing.

Upholding the founding principle of 'Unwavering Dedication in Precision', our high-quality products and precise delivery services have expanded into new technological frontiers such as optical fiber communication, lens modules, and drone transmission, earning high praise from satisfied customers.



GELINDE possesses a multitude of grinding and polishing techniques, with key processing equipment designed and manufactured in-house, fundamentally ensuring the high precision and consistency of product supply.

GELINDE possesses comprehensive in-house processing capabilities covering the entire production cycle, including material cutting, grinding, rough & fine polishing, purified water cleaning, dust-free inspection, and packaging. Our capabilities extend to processing various materials, such as specialized glass, ruby, sapphire, and ceramics...



GELINDE has a quality inspection team of over 30 people equipped with advanced testing instruments, including high-precision roundness gauges, interferometers, hardness meters. The team possesses capabilities in quality inspection for high precision, hardness, roughness, and other product attributes.

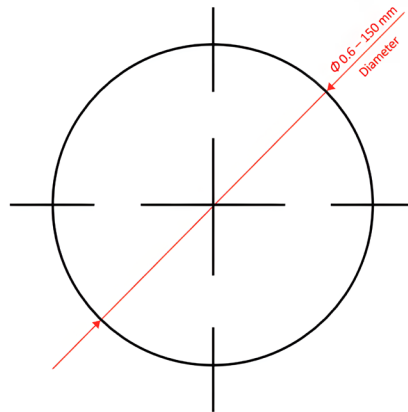


GELINDE
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Precision Glass Sphere Balls



Super Polished
Polished
Ground



We manufacture **High Precision Glass Sphere Balls**, ranging in diameter from 0.60mm to 50mm.

We collaborate with several high-quality glass suppliers and can provide customers with glass balls of varying densities and colors.

We implement high standards of precision and surface quality control measures, perform rigorous inspections, and insist on high-class cleanroom packaging, so as to ensure our delivery quality.

*** CUSTOMIZATION OF SIZE AND/OR MATERIALS IS ACCEPTED.**

*** OEM FOR CUSTOMER MATERIALS IS ACCEPTED.**

Regular Specifications:

Glass Sphere Ball Roundness:
< 0.00025 mm

Surface Quality (MIL-PRF-13830B)
10/5 max.

100% under microscopic
inspection before delivery.

Diameter Tolerance per Unit
Container:
 ± 0.00025 mm

Packing Method:
Clean Waffle Tray
Clean Glass Bottle + Plastic Bag
Clean Vacuum Plastic Bag

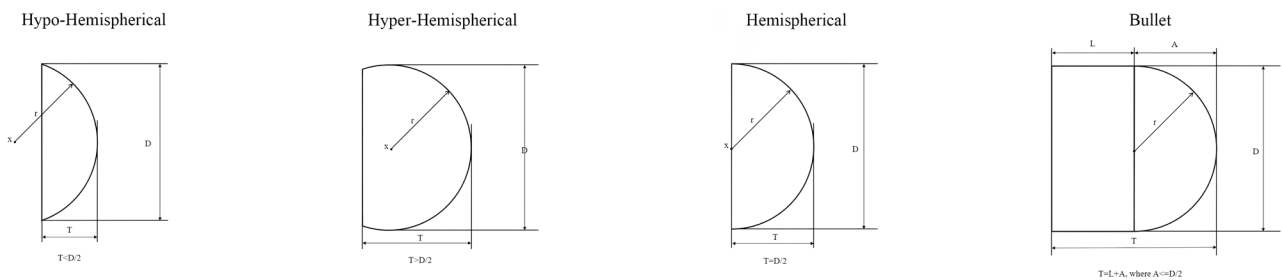
100% clean room inspection
and packing.

Roughness:
2 nm max.

Materials:

Sode Lime Glass, Borosilicate Glass (various color), Black Glass, Quartz Glass.

Half Ball Lenses



We manufacture Half Ball Lenses, ranging in diameter from 0.60mm to 150mm.

We procure optical glass materials from reputable suppliers, such as Sumita, Hoya, and Schott..., implement high standards of precision and surface quality control measures, perform rigorous inspections, and insist on high-class cleanroom packaging, so as to ensure our delivery quality.

*** CUSTOMIZATION OF SIZE AND/OR MATERIALS IS ACCEPTED.**

*** OEM FOR CUSTOMER MATERIALS IS ACCEPTED.**

Regular Specifications:

Half Ball Lens Roundness;
< 0.0005 mm

Diameter Tolerance per Unit
Container;
± 0.0020 mm

Roughness;
2 nm max.

Surface Quality (MIL-PRF-13830B)
20/10 max.

Packing Method:
Clean Waffle Tray
Clean Glass Bottle + Plastic Bag
Clean Vacuum Plastic Bag

100% under microscopic
inspection before
delivery.

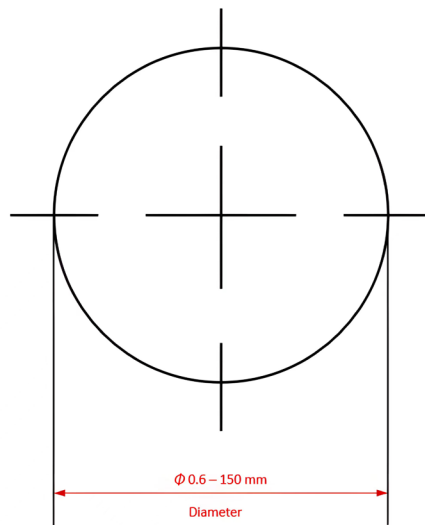
100% clean room
inspection and packing.

Materials:

Optical Glass, Fused Silica Glass.



Low Tg Optical Ball Lenses



We manufacture Low Tg Optical Ball Lenses, ranging in diameter from 0.60mm to 150mm.

We procure optical glass materials from reputable suppliers, such as Sumita, Hoya, and Schott..., implement high standards of precision and surface quality control measures, perform rigorous inspections, and insist on high-class cleanroom packaging, so as to ensure our delivery quality.

*** CUSTOMIZATION OF SIZE AND/OR MATERIALS IS ACCEPTED.**

*** OEM FOR CUSTOMER MATERIALS IS ACCEPTED.**

Regular Specifications:

Glass Sphere Ball Roundness:
<0.0005 mm

Diameter Tolerance per Unit
Container:
 $\pm 0.0020 \text{ mm}$

Roughness:
2 nm max.

Surface Quality (MIL-PRF-13830B)
10/5 max.

Packing Method:
Clean Waffle Tray
Clean Glass Bottle + Plastic Bag
Clean Vacuum Plastic Bag

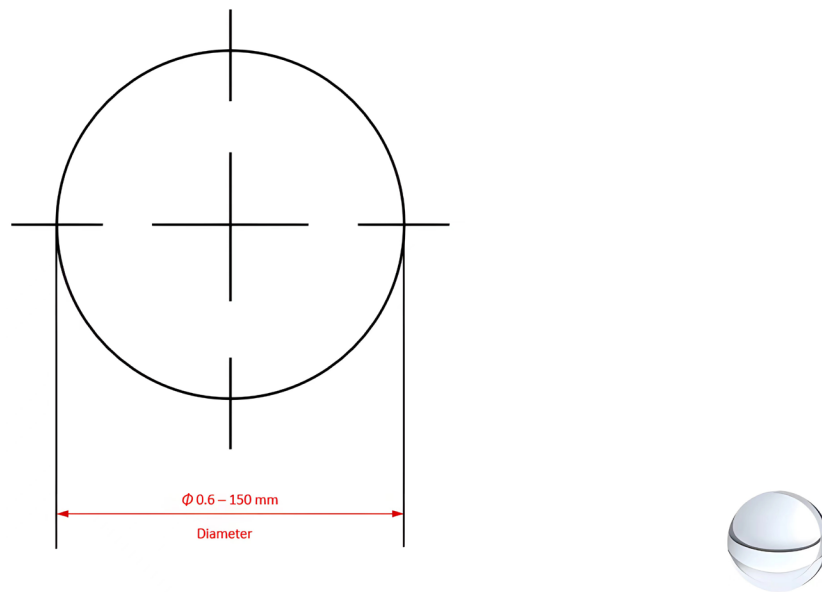
100% under microscopic
inspection before
delivery.

100% clean room
inspection and packing.

Materials:

| CDGM | HOYA | OHARA | SCHOTT | SUMITA |
|------------|--------------|---------|----------|--------|
| D-ZPK1A | (MC-PCD4) | | | |
| D-ZK2 | MC-BACD12 | L-BAL42 | | |
| D-ZK3 | MC-BACD5N | L-BAL35 | P-SK58A | |
| D-ZF10 | MC-FD80 | L-TIM28 | P-SF8 | |
| D-LAF50 | (MC-TAF1) | | | |
| D-ZLAF85L | (MC-TAFD305) | | | |
| D-ZLAF52LA | | | P-LASF51 | |
| D-K9 | | L-BSL7 | P-BK7 | |
| D-FK61 | MC-FCD1 | | | |
| D-FK61A | MC-FCD1 | | | |
| | FCD4 | | | |
| D-ZPK5 | FCD515 | | | |
| D-LaK6 | MC-LAC130 | | | |
| | MC-NBFD130 | | | |
| | MC-TAF401 | | | |
| | | | | K-VC89 |
| | | | | K-VC80 |

Precision Optical Ball Lenses



We manufacture Optical Ball Lenses, ranging in diameter from 0.60mm to 150mm.

We procure optical glass materials from reputable suppliers, such as Sumita, Hoya, and Schott..., implement high standards of precision and surface quality control measures, perform rigorous inspections, and insist on high-class cleanroom packaging, so as to ensure our delivery quality.

*** CUSTOMIZATION OF SIZE AND/OR MATERIALS IS ACCEPTED.**

*** OEM FOR CUSTOMER MATERIALS IS ACCEPTED.**

Regular Specifications:

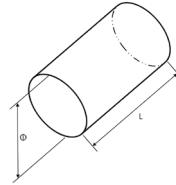
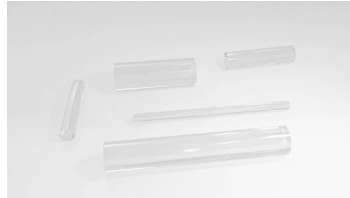
| | | |
|---|--|--|
| Glass Sphere Ball Roundness: <0.0005 mm | Surface Quality (MIL-PRF-13830B) 10/5 max. | 100% under microscopic inspection before delivery. |
| Diameter Tolerance per Unit Container: ± 0.0020 mm | Packing Method: Clean Waffle Tray Clean Glass Bottle + Plastic Bag Clean Vacuum Plastic Bag | 100% clean room inspection and packing. |
| Roughness: 2 nm max. | | |

Materials:

| CDGM | HOYA | OHARA | SCHOTT | Fused Quartz |
|-----------|--------|----------|-----------|---------------|
| H-FK61 | FCD1 | S-FPL51 | N-PK52A | |
| H-QK3L | FC5 | S-FSL5 | N-FK5 | |
| H-K9L | BSC7 | S-BSL7 | N-BK7 | |
| H-ZPK1A | PCD4 | S-PHM52 | N-PSK53A | |
| H-BaK2 | BAC2 | S-BAL12 | N-BAK2 | |
| H-BaK7 | BAC4 | S-BAL14 | N-BAK4 | |
| H-ZK2 | BACD12 | S-BAL42 | SK12 | |
| H-ZK3 | BACD5 | S-BAL35 | N-SK5 | |
| H-ZK3A | BACD5 | S-BAL35 | N-SK5 | |
| F1 | F5 | PBM5 | F5 | |
| H-BaF5 | | S-BAM4 | N-BAF4 | |
| H-ZF7LA | FD60 | S-TIH6 | N-SF6 | |
| H-ZF13 | FD110 | S-TIH11 | N-SF11 | |
| H-QF6A | E-FEL6 | S-TIL6 | N-LLF6 | |
| H-ZF62 | E-FDS1 | | N-SF66 | |
| H-ZLAF52 | NBFD13 | S-LAH53V | N-LASF43 | |
| H-ZLAF68C | TAFD30 | S-LAH58 | N-LASF31A | |
| H-ZLaF90 | TAFD40 | | | |
| H-K5 | BSC1 | BSL1 | BK1 | |
| H-K6 | C7 | NSL7 | K7 | |
| H-K9LGT | | | N-BK7HT | |
| H-K50 | C5 | S-NSL5 | N-K5 | |
| H-K12 | ZNC5 | ZSL5 | ZK5 | |
| H-ZPK1A | PCD4 | S-PHM52 | N-PSK53A | |
| H-BaK2 | BAC2 | S-BAL12 | N-BAK2 | |
| H-BaK6 | BACD11 | S-BAL41 | N-SK11 | |
| | | | | JGS1 |
| | | | | JGS2 |
| | | | | JGS3 |
| | | | | Corning 7980 |
| | | | | Corning 7989 |
| | | | | Nikkon Quartz |



Glass Rods



We manufacture Rod Lenses, ranging in diameter from 0.80mm to 25mm.

*** CUSTOMIZATION OF SIZE AND MATERIAL IS ACCEPTED.**

Regular Specifications:

Tolerance on Sphericity :
≤0.0020 mm

Surface Quality (MIL-PRF-13830B)
20/10 max.

100% under microscopic
inspection before
delivery.

Tolerance on Diameter :
±0.0050 mm

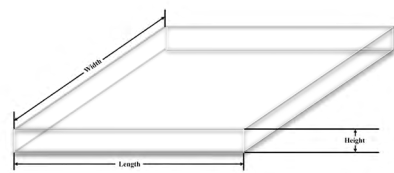
Packing Method :
Clean Waffle Tray
Dust-free Tape Wrapping
Clean Vacuum Plastic Bag

100% clean room
inspection and packing.

Tolerance on Length :
±0.0050 mm

Materials: Optical Glass, Ceramics, Sapphires, Ruby.

Flat Lens / Substrate



We manufacture Optical Glass Flat Lenses, ranging in dimensions from 1mm to 300mm.

*** CUSTOMIZATION OF SIZE AND MATERIAL IS ACCEPTED.**

Regular Specifications:

Tolerance :
±0.0200 mm

Surface Quality (MIL-PRF-13830B)
10/5 max.

100% under microscopic
inspection before
delivery.

Dimension :
1-100 mm

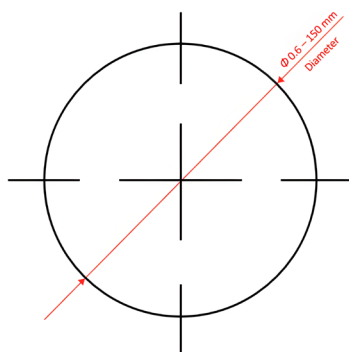
Packing Method :
Clean Waffle Tray
Dust-free Tape Wrapping
Clean Vacuum Plastic Bag

100% clean room
inspection and packing.

Thickness
0.1-100 mm

Materials: Optical Glass, Ceramics, Sapphires, Ruby.

Sapphire Balls / Ruby Balls



We manufacture High Precision Sapphire and ruby Balls, ranging in diameter from 0.60mm to 150mm.

Material: Synthetic Sapphire/Ruby
 Chemical: Al_2O_3
 Hardness: 9 Mohs
 Melting Point: 2045 °C (3713°F)
 Index: $n_o = 1.768$, $n_e = 1.760$
 High Wear Resistance
 Severe Chemical Corrosion Resistance

*** CUSTOMIZATION OF SIZE IS ACCEPTED.**

Applications :

Sapphire Balls: Special bearings, chemical, medical and check valves, flowmeters, pens and styli tips, measurement instruments, bar code readers, fiber optical connectors.

Ruby Balls: Special bearings, pumps and valves (chemical pumps, check valves), measurement instruments, pen tips, optical and probing applications, flow meters.

Regular Specifications:

Glass Ball Lens Roundness
 $< 0.0005 \text{ mm}$

Surface Quality (MIL-PRF-13830B)
 10/5 max.

100% under microscopic inspection before delivery.

Roughness:
 2nm max.

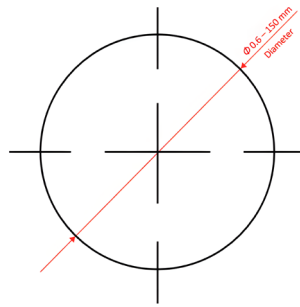
Packing Method:
 Clean Waffle Tray
 Clean Glass Bottle + Plastic Bag
 Clean Vacuum Plastic Bag

100% clean room inspection and packing.

Tolerance on Diameter:
 $\pm 2 \text{ nm max.}$

Ceramic Balls

Silicon Nitride and others



We manufacture High Precision Silicon Nitride Ceramic Balls (Si₃N₄).

The precision of our ceramic balls can reach the highest standards according to ISO 3290, i.e. requirements of G3.

We procure raw balls from China's leading silicon nitride sintering supplier, offering products processed through both GPS (Gas Pressure Sintering) and HIP (Hot Isostatic Pressing Sintering) techniques.

Silicon nitride ceramic balls exhibit excellent properties such as superhard wear resistance, low density, low thermal expansion coefficient, strong fracture toughness, high compressive strength, high tensile strength, high temperature resistance, corrosion resistance, electrical insulation, non-magnetic, and self-lubrication. They serve as outstanding bearings in applications such as electric vehicles, drones, industrial robots, and other fields.

Regular Size: Diameter 0.4 - 80 mm

Precision: max. G3 (ISO 3290)

*** CUSTOMIZATION OF DIMENSION SIZE IS ACCEPTED.**

Applications: Special bearings and pumps, electric switches and sensors, medical instruments. They are used in automotive, aviation and aerospace, naval, petroleum, chemical and electronic industry.

Features Comparison:

| Indicators | Steel Balls (for comparison) | GPS Si ₃ N ₄ Balls | HIP Si ₃ N ₄ Balls |
|--|---------------------------------|---|---|
| Density (g/m ³) | 7.6 | 3.24 | 3.26 |
| Hardness (HRC) | 81.2 | 93 | 95 |
| Young's modulus (Gpa) | 190 | 320 | 320 |
| Thermal Expansion (10 ⁻⁶ /K) | 12.3 | 3.1 | 3.1 |
| Service Temperature (°C) | 320 | 1000 | 1000 |
| Fracture Toughness (Mpa.m ^{1/2}) | | 6.1 | 7.3 |
| Flexural Strength (MPa) | | 820 | 1030 |

Except Silicon Nitride Ceramic Balls, we provide also **Silicon Carbide Ceramic Ball**, **Zirconia Oxide Ceramic Balls** and **Alumina Oxide Ceramic Balls**. You're welcome to contact our sales people for details.



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