

## Aspherical Glass Lenses For optical communications

Type: **EYLG**□**F**□□□□□□



These products are aspherical glass lenses by using a press molding, and key devices of optical electronics not only provide compact and light weight but also high-performance by utilizing characteristics of aspherical design.

### Features

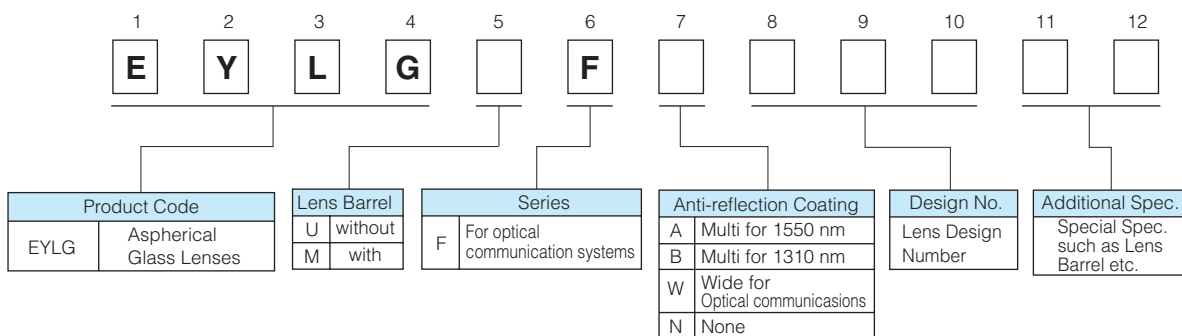
- High numerical aperture achieved via aspherical design
- Short focal length for compact size
- Appropriate lenses and lens material available for many different applications
- Wide temperature and humidity range for increased reliability and stability
- High-quality processing, measurement techniques and precision manufacturing process give less variation in optical properties
- RoHS compliant

\* We can offer custom design, sampling and mass production as requested

### Recommended Applications

- Coupling lens for optical communication systems
- Collimator lens for optical communication systems

### Explanation of Part Numbers



### Ratings

Item	Ratings
Operating Temperature Range	-30 to +85 °C
Storage Temperature Range	-40 to +100 °C

■ Please contact the factory for packaging methods.

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use. Should a safety concern arise regarding this product, please be sure to contact us immediately.

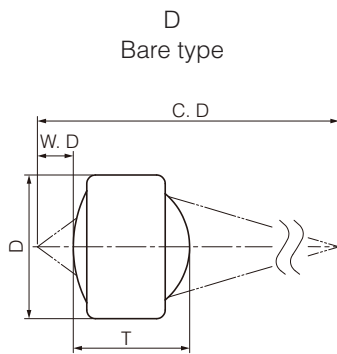
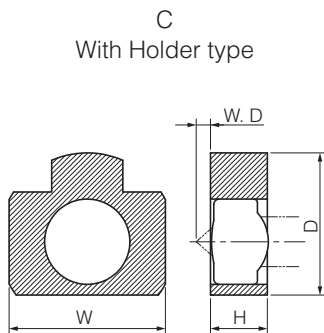
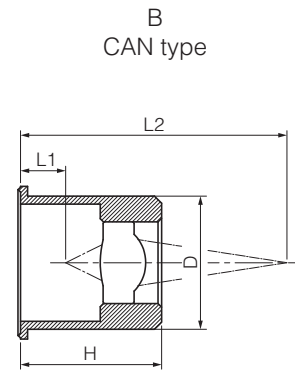
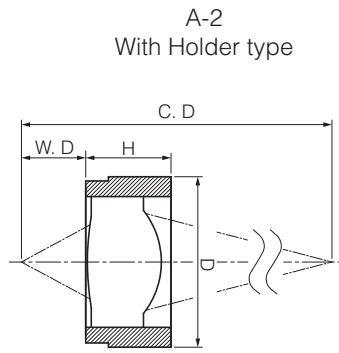
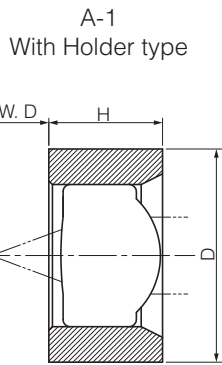
## Specifications

### ● Lenses for Optical Communications

Part No.	Design Wavelength (nm)	Suitable Wavelength (T>97 %) (nm)	Designed with CG	Focal Length (mm)	Working Distance (* L1) (mm)	Conjugate Distance (* L2) (mm)	Magnification
			CG material / Thickness (mm)				
EYLGFW135DR	1550	1260 to 1625	–	2.51	1.68	–	–
EYLGFW192KR	1550	1260 to 1625	–	1.81	1.03	–	–
EYLGFW192WR	1550	1260 to 1625	–	1.81	0.81	–	–
EYLGFW265AR	1550	1260 to 1625	–	3.02	2.26	–	–
EYLGFW479A	1550	1260 to 1625	–	1.59	0.93	–	–
EYLGFB240BR	1310	1260 to 1625	–	1.40	1.13	10.69	5.0
EYLGFB456R	1310	1260 to 1625	–	0.54	0.25	3.85	4.5
EYLGFB508A	1310	1260 to 1625	–	0.55	0.25	3.98	5.3
EYLGFB506A	1310	1260 to 1625	–	0.63	0.52	4.00	4.0
EYLGFB245R	1310	1260 to 1625	BK7 t0.25	1.13	1.27*	7.50*	2.5
EYLGFB295R	1310	1260 to 1625	–	1.35	1.27*	10.18*	4.0
EYLGFB415R	1310	1260 to 1625	–	0.94	1.27*	7.56*	4.0
EYLGFB480A	1310	1260 to 1625	–	0.93	1.20*	5.73*	2.0
EYLGFB305R	1310	1260 to 1625	–	0.46	1.40*	3.90*	3.1
EYLGFB502B	1310	1260 to 1625	–	0.46	1.00*	3.50*	3.1
EYLGFB488A	1577	1260 to 1625	–	1.44	2.62*	12.02*	3.8
EYLGFB463R	1570	1260 to 1625	–	1.48	2.15*	12.10*	4.2
EYLGFB485A	1577	1260 to 1625	–	0.95	2.8*	8.20*	3.1

Part No.	N.A		Effective Diameter (mm)		Beam Diameter (mm)	Dimensions (mm)			Glass Material	Lens Shape type
	S1	S2	S1	S2		Diameter (D)	Height (H)	Thickness (T)		
EYLGFW135DR	–	0.20	1.04	0.80	0.50	2.5	1.4	–	K-PBK40	A-1
EYLGFW192KR	–	0.30	1.08	0.82	0.34	2.5	1.4	–	K-PBK40	A-1
EYLGFW192WR	–	0.30	1.08	0.73	0.36	3.0	1.6	–	K-PBK40	A-1
EYLGFW265AR	–	0.22	1.33	1.14	0.60	3.0	1.6	–	K-PBK40	A-1
EYLGFW479A	–	0.26	0.82	0.70	0.26	1.8	1.4	–	K-PBK40	A-1
EYLGFB240BR	0.50	0.10	1.31	1.70	–	3.0	1.5	–	K-VC89	A-2
EYLGFB456R	0.50	0.11	0.34	0.64	–	1.8	1.0	–	K-VC89	A-2
EYLGFB508A	0.58	0.11	0.40	0.70	–	1.0	–	0.81	K-VC79	D
EYLGFB506A	0.48	0.12	0.59	0.76	–	□1.0	–	0.63	K-VC89	D
EYLGFB245R	0.40	0.16	0.90	1.20	–	3.75	3.97	–	K-VC89	B
EYLGFB295R	0.40	0.10	1.02	1.33	–	3.75	3.90	–	K-VC89	B
EYLGFB415R	0.50	0.13	0.76	1.14	–	3.75	3.50	–	K-VC89	B
EYLGFB480A	0.40	0.20	0.91	1.10	–	4.70	3.23	–	K-VC89	B
EYLGFB305R	0.50	0.16	0.34	0.52	–	3.20	2.45	–	K-VC89	B
EYLGFB502B	0.50	0.16	0.34	0.52	–	3.23	2.10	–	K-VC89	B
EYLGFB488A	0.60	0.16	1.40	2.20	–	5.00	5.90	–	K-VC89	B
EYLGFB463R	0.59	0.14	1.60	2.12	–	5.00	4.93	–	K-VC89	B
EYLGFB485A	0.53	0.17	1.00	1.30	–	4.90	5.00	–	K-VC89	B

Dimensions in mm (not to scale)



W.D : Working Distance  
C.D : Coujugate Distance

## Aspherical Glass Lenses For LD applications



Type: EYLGUL□□□□□

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### Features

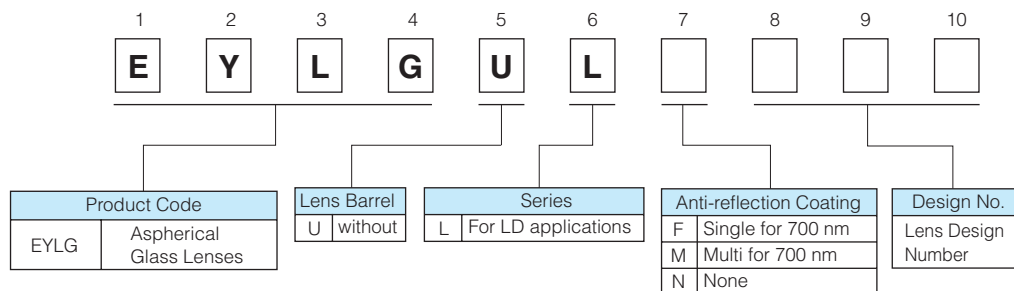
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### Recommended Applications

- Lens for LD applications

### Explanation of Part Numbers



### Ratings

Item	Ratings
Operating Temperature Range	-30 to +85 °C
Storage Temperature Range	-40 to +100 °C

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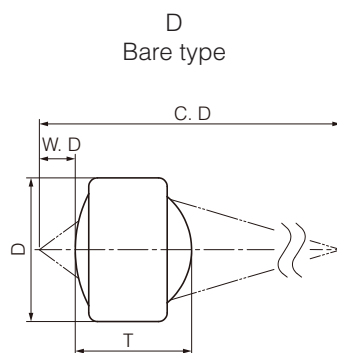
## Specifications

- Lenses for LD applications

Part No.	Design Wavelength (nm)	Suitable Wavelength (T>97 %) (nm)	Designed with CG	Focal Length (mm)	Working Distance (mm)	Magnification
			CG material / Thickness (mm)			
EYLGULM216	780	600 to 800	BK7 t0.25	10.00	8.85	∞
EYLGULF273	780	660 to 700	BK7 t0.30	12.50	10.93	∞
EYLGULF274	780	660 to 700	BK7 t0.25	6.25	4.84	∞
EYLGULF276	780	660 to 700	BK7 t0.25	8.00	6.60	∞
EYLGULF277	780	660 to 700	BK7 t0.30	8.98	7.72	∞
EYLGULF279	780	660 to 700	BK7 t0.30	4.00	2.66	∞
EYLGULF292	780	660 to 700 (T > 95 %)	BK7 t0.27	6.00	3.82	∞
EYLGULF319	780	660 to 700 (T > 95 %)	BK7 t0.25	12.50	11.12	∞
EYLGULM330	780	630 to 800	BK7 t0.25	3.59	2.55	∞

Part No.	N.A	Effective Diameter (mm)		Dimensions (mm)		Glass Material	Lens Shape type
	S1	S1	S2	Diameter (D)	Thickness (T)		
EYLGULM216	0.33	6.06	6.60	8.00	2.15	K-VC81	D
EYLGULF273	0.23	5.07	5.70	6.40	2.80	K-VC80	D
EYLGULF274	0.40	4.15	5.00	6.40	2.50	K-VC80	D
EYLGULF276	0.25	3.36	4.00	6.40	2.50	K-VC80	D
EYLGULF277	0.29	4.79	5.40	6.40	2.30	K-VC80	D
EYLGULF279	0.50	2.96	4.00	6.40	2.50	K-VC80	D
EYLGULF292	0.35	2.85	4.20	6.00	4.20	K-PBK40	D
EYLGULF319	0.23	5.20	5.70	8.00	2.50	K-PBK40	D
EYLGULM330	0.29	1.58	2.16	4.00	2.00	K-PBK40	D

## Dimensions in mm (not to scale)



W.D : Working Distance  
C.D : Conjugate Distance

## NOTES

### 1) Formation of the lens barrel

Since the lenses with barrels for optical communications are integral-molded with the barrels, no further processing is possible after the assembly. Please note that if the thickness of a lens barrel is 0.25 mm or less, the barrel tends to expand during assembly. The lenses are designed on the assumption that the barrel is in a simple or a two-step cylindrical shape.

### 2) Anti-reflective coating

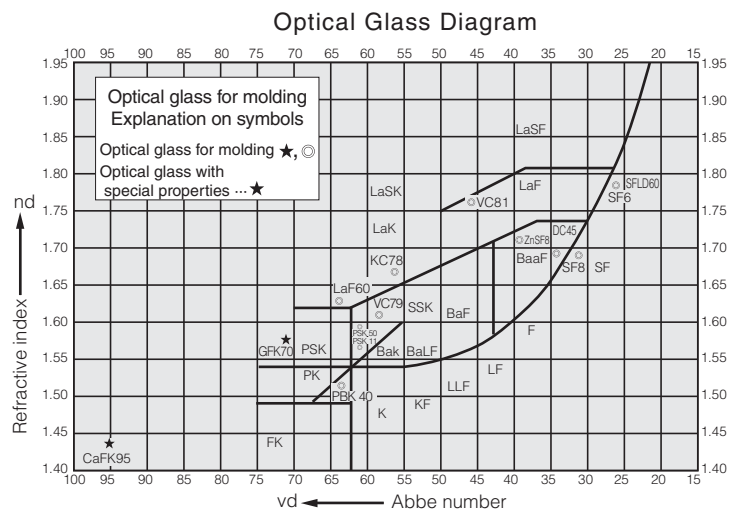
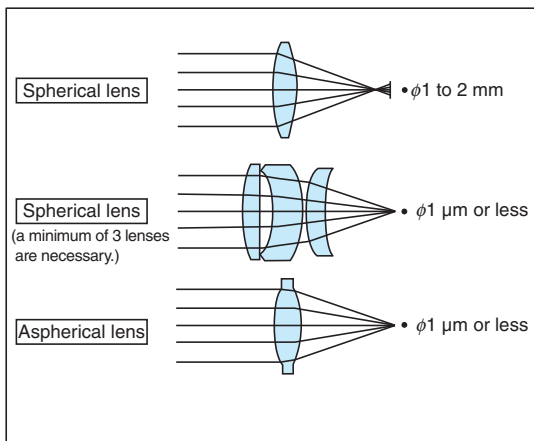
a) Panasonic uses only the best glass materials and applies an anti-reflective coating to achieve the highest possible performance.

b) Average center wavelength of a lens' transmittance band is either 1310 or 1550 nm for optical communications. Wide wavelength (1310 to 1550 nm) and dual wavelength (980/1550) designs are available as well. Custom anti-reflective coatings are available upon request. Wide wavelength designs become increasingly prohibitive as the length of lens barrel increases.

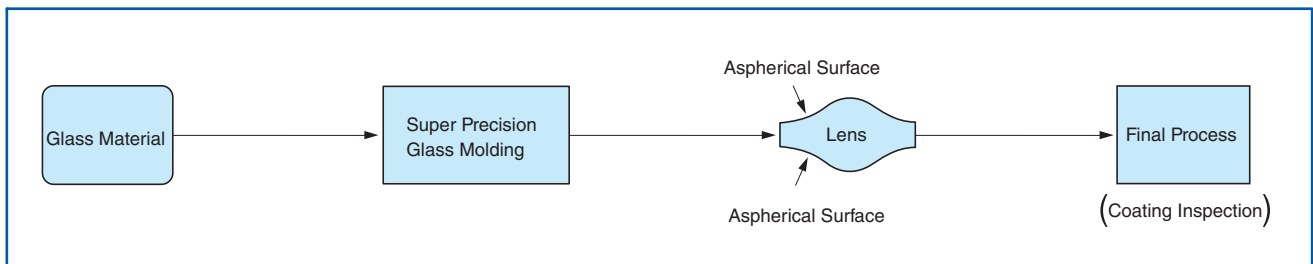
### 3) Custom Specification lenses

Lenses of various shapes and dimensions can be designed to meet the individual needs of customers. Please consult with Panasonic for details.

## Performance of Aspherical Glass Lens



## Production Process of Aspherical Glass Molded Lens



## ⚠ Safety Precautions

### (Common precautions for Aspherical Glass Lenses)

- When using our products, no matter what sort of equipment they might be used for, be sure to make a written agreement on the specifications with us in advance. The design and specifications in this catalog are subject to change without prior notice.
- Do not use the products beyond the specifications described in this catalog.
- This catalog explains the quality and performance of the products as individual components. Before use, check and evaluate their operations when installed in your products.
- Install the following systems for a failsafe design to ensure safety if these products are to be used in equipment where a defect in these products may cause the loss of human life or other significant damage, such as damage to vehicles (automobile, train, vessel), traffic lights, medical equipment, aerospace equipment, electric heating appliances, combustion/gas equipment, rotating equipment, and disaster/crime prevention equipment.
- \* Systems equipped with a protection circuit and a protection device
- \* Systems equipped with a redundant circuit or other system to prevent an unsafe status in the event of a single fault

#### 1) Precautions for use

- These products are designed and manufactured for general and standard use in general electronic equipment (e.g. AV equipment, home electric appliances, office equipment, information and communication equipment)
- These products are not intended for use in the following special conditions. Before using the products, carefully check the effects on their quality and performance, and determine whether or not they can be used.
  1. In liquid, such as water, oil, chemicals, or organic solvent
  2. In direct sunlight, outdoors, or in dust
  3. In salty air or air with a high concentration of corrosive gas, such as Cl<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>2</sub>, or NO<sub>2</sub>
  4. In an environment where these products cause dew condensation
- Carefully position these products so that their temperatures will not exceed the category temperature range due to the effects of neighboring heat-generating components.
- Dust or dirt on the surface of a lens should be removed using compressed air, or by blowing air across the lens surface.

If dust/dirt remains, wipe the lens lightly with a swab soaked in ethanol. Note that the performance or appearance of lenses will be affected if their surfaces are scratched as a result of being rubbed strongly.

Do not cleanse lenses with water, doing so could also influence their performance or make the surfaces dull.
- Do not directly touch the surfaces of lenses when taking them out from trays. Hold the flange or lens barrel instead.
- Always use plastic tweezers when handling lenses.

#### 2) Precautions for storage

- Always store lenses in desiccators.
- Avoid storage under conditions of high temperature and high humidity.

#### <Package markings>

Package markings include the product number, quantity, and country of origin. In principle, the country of origin should be indicated in English.

## Guidelines and precautions regarding the technical information and use of our products described in this online catalog.

- If you want to use our products described in this online catalog for applications requiring special qualities or reliability, or for applications where the failure or malfunction of the products may directly jeopardize human life or potentially cause personal injury (e.g. aircraft and aerospace equipment, traffic and transportation equipment, combustion equipment, medical equipment, accident prevention, anti-crime equipment, and/or safety equipment), it is necessary to verify whether the specifications of our products fit to such applications. Please ensure that you will ask and check with our inquiry desk as to whether the specifications of our products fit to such applications use before you use our products.
- The quality and performance of our products as described in this online catalog only apply to our products when used in isolation. Therefore, please ensure you evaluate and verify our products under the specific circumstances in which our products are assembled in your own products and in which our products will actually be used.
- If you use our products in equipment that requires a high degree of reliability, regardless of the application, it is recommended that you set up protection circuits and redundancy circuits in order to ensure safety of your equipment.
- The products and product specifications described in this online catalog are subject to change for improvement without prior notice. Therefore, please be sure to request and confirm the latest product specifications which explain the specifications of our products in detail, before you finalize the design of your applications, purchase, or use our products.
- The technical information in this online catalog provides examples of our products' typical operations and application circuits. We do not guarantee the non-infringement of third party's intellectual property rights and we do not grant any license, right, or interest in our intellectual property.
- If any of our products, product specifications and/or technical information in this online catalog is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially with regard to security and export control, shall be observed.

## <Regarding the Certificate of Compliance with the EU RoHS Directive/REACH Regulations>

- The switchover date for compliance with the RoHS Directive/REACH Regulations varies depending on the part number or series of our products.
- When you use the inventory of our products for which it is unclear whether those products are compliant with the RoHS Directive/REACH Regulation, please select "Sales Inquiry" in the website inquiry form and contact us.

**We do not take any responsibility for the use of our products outside the scope of the specifications, descriptions, guidelines and precautions described in this online catalog.**