



Industrial Equipments



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CE

## Instruction Manual

Product: VL-RGF Series

Ring Light

## 1. Intended Use

"The VL-RGF Series Ring Light is designed for use in industrial environments, primarily in machine vision applications such as part inspection, code reading (1D / 2D), OCR / OCV, surface inspection, and other applications requiring direct illumination. The light source is intended to illuminate the inspected object and is typically positioned between the camera and the object in order to achieve the required illumination conditions. For maximum performance, the camera should be positioned as close as possible to the light source.

The VL-RGF Series supports continuous operation as well as trigger mode operation for synchronization with industrial cameras and control systems. Trigger functionality enables precise illumination timing, improved image acquisition performance, reduced motion blur, and optimized light intensity during high-speed inspection processes.

The system must be operated within the limits specified in the technical data and used according to the technical specifications as well as the installation instructions. The system must be used in such a way that no persons are endangered and no machines or other material goods are damaged in the event of malfunction or total failure of the system. Additional precautions must be taken for safety and damage prevention in safety-related applications."

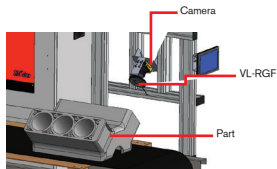
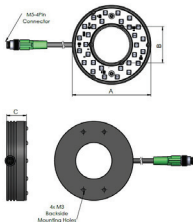
## 2. Technical Information

| Model                  | Color | Wavelength/<br>Color Temperature | Power Supply | Power Consumption | IP Rating<br>(Option: IP67) | Connection             | A(mm) | B(mm) | C(mm) | Housing Material           | Light Angle<br>(°) |
|------------------------|-------|----------------------------------|--------------|-------------------|-----------------------------|------------------------|-------|-------|-------|----------------------------|--------------------|
| VL-RGF-51-30-R-24-C30  | R     | 660nm                            | 24VDC        | 1.7W              | IP50                        | M8 4 pin w 300mm cable | 56,5  | 26,5  | 19    | Aluminum (Black, Anodized) | 30°                |
| VL-RGF-51-30-W-24-C30  | W     | 9000K                            | 24VDC        | 2.7W              | IP50                        | M8 4 pin w 300mm cable | 56,5  | 26,5  | 19    | Aluminum (Black, Anodized) | 30°                |
| VL-RGF-51-30-B-24-C30  | B     | 9000K                            | 24VDC        | 2.7W              | IP50                        | M8 4 pin w 300mm cable | 56,5  | 26,5  | 19    | Aluminum (Black, Anodized) | 30°                |
| VL-RGF-30-G-24-C30     | G     | 9000K                            | 24VDC        | 2.7W              | IP50                        | M8 4 pin w 300mm cable | 56,5  | 26,5  | 19    | Aluminum (Black, Anodized) | 30°                |
| VL-RGF-70-38-R-24-C30  | R     | 660nm                            | 24VDC        | 3.4W              | IP50                        | M8 4 pin w 300mm cable | 75    | 34,5  | 19    | Aluminum (Black, Anodized) | 30°                |
| VL-RGF-70-38-W-24-C30  | W     | 9000K                            | 24VDC        | 5 W               | IP50                        | M8 4 pin w 300mm cable | 75    | 34,5  | 19    | Aluminum (Black, Anodized) | 30°                |
| VL-RGF-70-38-B-24-C30  | B     | 9000K                            | 24VDC        | 5 W               | IP50                        | M8 4 pin w 300mm cable | 75    | 34,5  | 19    | Aluminum (Black, Anodized) | 30°                |
| VL-RGF-70-38-G-24-C30  | G     | 9000K                            | 24VDC        | 5 W               | IP50                        | M8 4 pin w 300mm cable | 75    | 34,5  | 19    | Aluminum (Black, Anodized) | 30°                |
| VL-RGF-100-45-R-24-C30 | R     | 660nm                            | 24VDC        | 8 W               | IP50                        | M8 4 pin w 300mm cable | 105,5 | 41    | 19    | Aluminum (Black, Anodized) | 30°                |
| VL-RGF-100-45-W-24-C30 | W     | 9000K                            | 24VDC        | 12 W              | IP50                        | M8 4 pin w 300mm cable | 105,5 | 41    | 19    | Aluminum (Black, Anodized) | 30°                |
| VL-RGF-100-45-B-24-C30 | B     | 9000K                            | 24VDC        | 12 W              | IP50                        | M8 4 pin w 300mm cable | 105,5 | 41    | 19    | Aluminum (Black, Anodized) | 30°                |
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| Model                  | Color | Wavelength/<br>Color Temperature | Power Supply | Power Consumption |      | Connection             | A(mm) | B(mm) | C(mm) | Housing Material           | Light Angle<br>(°) |
|------------------------|-------|----------------------------------|--------------|-------------------|------|------------------------|-------|-------|-------|----------------------------|--------------------|
| VL-RGA-51-30-R-24-C30  | R     | 660nm                            | 24VDC        | 1.7W              | IP50 | M8 4 pin w 300mm cable | 56,5  | 26,5  | 19    | Aluminum (Black, Anodized) | 30°                |
| VL-RGA-51-30-W-24-C30  | W     | 9000K                            | 24VDC        | 2.7W              | IP50 | M8 4 pin w 300mm cable | 56,5  | 26,5  | 19    | Aluminum (Black, Anodized) | 30°                |
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| VL-RGA-70-38-R-24-C30  | R     | 660nm                            | 24VDC        | 3.4W              | IP50 | M8 4 pin w 300mm cable | 75    | 34,5  | 19    | Aluminum (Black, Anodized) | 30°                |
| VL-RGA-70-38-W-24-C30  | W     | 9000K                            | 24VDC        | 5 W               | IP50 | M8 4 pin w 300mm cable | 75    | 34,5  | 19    | Aluminum (Black, Anodized) | 30°                |
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### 3. Dimensions / Installation

System operation assumes knowledge of the assembly instructions. The symbols used for safety is shown in section 8(Safety) of manual.



Part defect detection,  
positioning, part checking



OCR on metal moulded parts,  
aluminum part defect  
detection



OCR, datamatrix code reading  
on metal parts marked with  
laser, violet markers



Hole, defect detection on  
machined metal parts



Missing part detection inside  
box, part positioning



Metal part completeness  
check, positioning



Picking applications, angle,  
position detection, part  
identification



Concentricity measurement,  
part identification, part  
positioning

## 4. Electrical Connection

For proper light function, apply either a PNP or NPN signal, not both.  
Failure to supply light with correct input current will result in inconsistent lighting behavior.  
(see Product Specifications for requirements)

| Cable                                              | Ordering Code | Drawing/Connection |  |
|----------------------------------------------------|---------------|--------------------|--|
| M8 female 0" with cable PVC 4x0.25 bk UL/CSA 2.5m  | TKPM-Z-2.5/4  |                    |  |
| M8 female 0" with cable PVC 4x0.25 bk UL/CSA 4m    | TKPM-Z-5/4    |                    |  |
| M8 female 90" with cable PVC 4x0.25 bk UL/CSA 2.5m | TKPM-W-2.5/4  |                    |  |
| M8 female 90" with cable PVC 4x0.25 bk UL/CSA 4m   | TKPM-W-5/4    |                    |  |

| Pins | Function        | Wire Color |
|------|-----------------|------------|
| 1    | Power In +24VDC | BROWN      |
| 2    | NPN             | WHITE      |
| 3    | GND             | BLUE       |
| 4    | PNP             | BLACK      |

## 5. Display/Controls

Product does not have this specification.

## 6. Faults

In any case do not open the product.  

If the LEDs are not on, check the connection and power supply.

If still LEDs are not on, contact FÖGE or distributor.

## 7. Warnings

- Connect the power supply and the display/output device according to the safety regulations for electrical equipment.
- The supply voltage must not exceed the specified limits.
- Avoid shocks and impacts to the sensor.
- Protect the cable against damage.

Possible Results of Avoidance

Risk of injury by electric shock 

Damage to or destruction of the sensor  

## 8. Safety

System operation assumes knowledge of the assembly instructions. The following symbols are used in these assembly instructions:



Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.



Indicates a situation that may result in property damage if not avoided.



Indicates an electrical shock if not avoided or properly follow comments.

## 9. Liability for Material Defects

All components of the device have been checked and tested for functionality at the production facility. However, if defects occur despite our careful quality control, FÖGE or your dealer must be notified immediately.

The liability for material defects is 12 months from delivery.

Within this period, defective parts, except for wearing parts, will be repaired or replaced free of charge, if the device is returned to FÖGE with shipping costs prepaid. Any damage that is caused by improper handling, the use of force or by repairs or modifications by third parties is not covered by the liability for material defects. Repairs are carried out exclusively by FÖGE.

Further claims can not be made. Claims arising from the purchase contract remain unaffected. In particular, FÖGE shall not be liable for any consequential, special, indirect or incidental damage. In the interest of further development, FÖGE reserves the right to make design changes without notification.

## 10. Decommissioning, Disposal

Remove the power supply and output cable on the sensor.

Incorrect disposal may cause harm to the environment.

Dispose of the device, its components and accessories, as well as the packaging materials in compliance with the applicable country-specific waste treatment and disposal regulations of the region of use.