# User Manual
# MirrorEye Peregrine MP

User Manual
No. UM0972270A01

8/2023
English

MirrorEye Peregrine MP LHD/RHD

Stoneridge | ORLACO

# MirrorEye Peregrine MP;
# Camera MirrorEye Peregrine MP Left
# Camera MirrorEye Peregrine MP Right
# Monitor MirrorEye Peregrine MP 12.3”
# Monitor MirrorEye Peregrine MP 15”
# ECU MirrorEye Peregrine MP

**User Manual no.: 0972270ENA01**

## Preface

The manual is intended for the driver of a vehicle equipped with the MirrorEye system.
This manual contains user instructions. Use this manual to familiarize yourself with how to operate the system in order to use the system in a correct and safe way. For information not mentioned in this manual, contact your Stoneridge dealer.

**The use of this system while driving is only Permitted by persons who are (legally) authorized to operate a Vehicle and are considered physical capable of driving a vehicle. Drivers with reduced visual accommodation capacity shall use suitable aids when using the system.**

**The display may be slightly disturbed by direct sunlight shining on the camera lens or monitor. If this happens, the user must carry out additional checks so that no unsafe situation arises.**

All data is subject to change without notice. All dimensions are for commercial purpose only. The camera/monitor systems from Stoneridge comply with the latest CE, ADR, EMC and mirror-directive regulations, where applicable. All products are manufactured in accordance with the ISO 9001 quality management system, IATF 16949 quality automotive management system, ISO 14001 environmental management systems, where applicable.

## Table of Contents



### Monitors

This manual describes the MirrorEye system independent of the monitor size. The left and right side monitors used to display class II and class IV can either be a 12.3" monitor, or a 15" monitor. The monitor size has no influence on the system functionality or system performance. This manual is applicable for both the system solutions.

### Display layout

The system in this manual is depicted with a display layout showing class II at the top of the monitor and class IV below. However, it is also possible for your dealer to configure the system to show class IV at the top and class II below.

### Available documentation

Datasheet DS0961570 Camera Wings RHD & LHD (Right- and Left Hand Drive)
Datasheet DS0963710 ECU (Electronic Control Unit)
Datasheet DS0962310 Monitors Mirrors 12" & 15"

Installation Manual IM0973720
User Manual UM0972270 (current one)

### Information

Download the available documentation
www.stoneridge-orlaco.com/downloads

## 1. Introduction

The MirrorEye Peregrine MP system is used as a Camera Monitor System to replace the conventional class II and class IV rear-view mirrors for on-road heavy duty applications in Europe and North America and complies with the regulations as described in UNECE R46Rev6.

### System description

The function of the MirrorEye system is to show the legal Field of View of class II and class IV to the driver. See figure 1.

### Class II

The class II field of vision for the main rear-view device according to R46R6 shows the driver the rear vision next to the Vehicle towards the horizon.

### Class IV

The class IV field of vision for the wide-angle view device according to R46R6 shows the driver the wide angle rear vision next to the Vehicle.

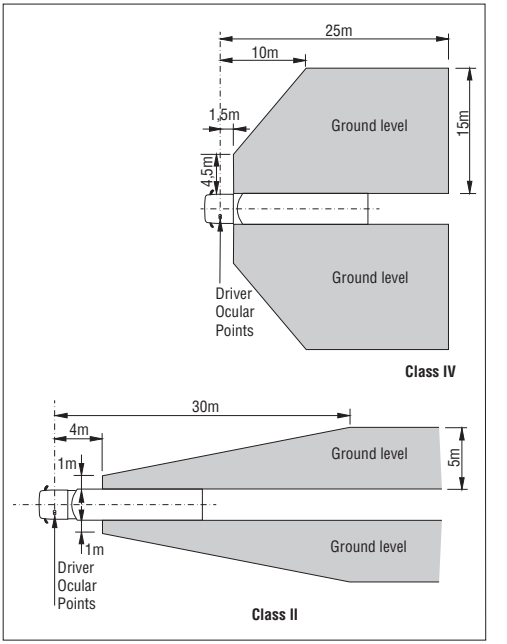


*Figure 1*

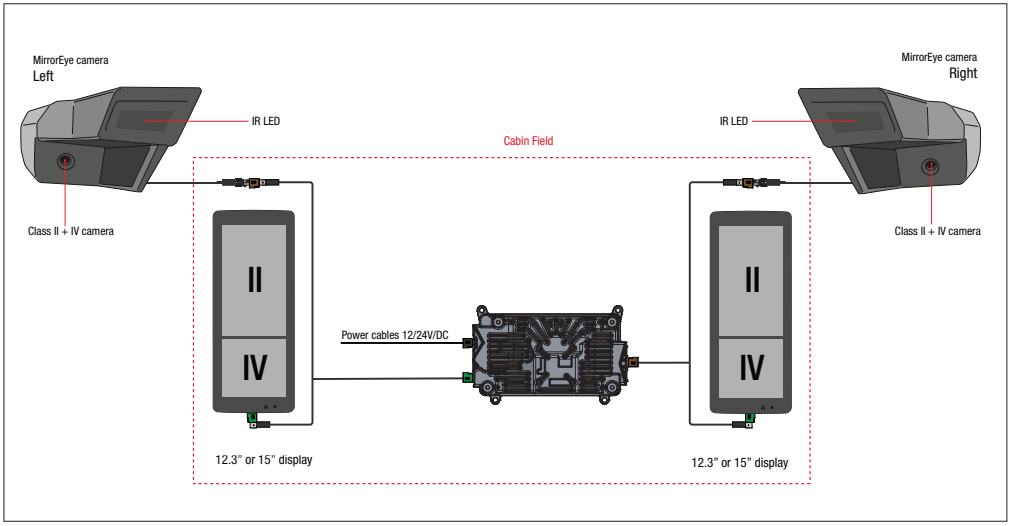


*Figure 2*

## 2. MirrorEye system

The MirrorEye Peregrine Bus system consists of two camera units, two monitors and and the required cables.

The camera units are located on both the left- and right-hand side of the vehicle to cover the legislated field of view. The monitors are mounted in the cabin. The cable harness connects the monitors.

### 2.1. System Overview

The MirrorEye Camera Monitor System includes components for each side of the Vehicle (see Figure 2):

- Camera unit side including
  - One camera for class II/IV view
  - Heating elements
  - IR-LED module
  - Bracket and covers

- Monitor module including
  - Monitor for class II/IV image
  - Housing
  - Light sensor

- ECU including
  - Electronics and software to control the system
  - Housing

## 3. System Functions

### 3.1. Status Bar

The status bar provides a quick view of the current MirrorEye status. When the icon is green, it means the corresponding feature is activated. A detailed description of all icons can be found in the table on page 8.

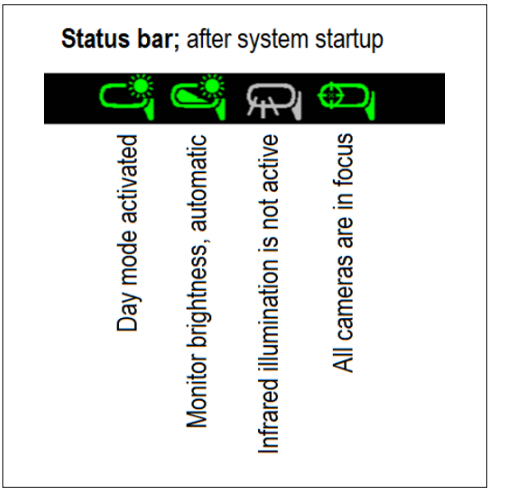


*Figure 3*

### 3.2 Camera Heater

The ignition switch of the vehicle is used to switch the system on and off. When the key is turned off the system will make a controlled shut down. After the ignition switch is switched off, the Mirror-Eye system will remain operational for 2 minutes. After these 2 minutes, the system is standby for another 5 minutes and can be reactivated so that the required field of vision is available again within 1 second.

### 3.3 Day and Night camera mode

The system has 2 different camera modes. Switching between the modes is possible with the use of a controller. E.g. in a door module which is vehicle dependent.

- **Day mode:** To be used in normal daylight. This setting may also be used in dark conditions while there is still some illumination (for example streetlights, or head- and tail lights of other vehicles)
- **Night mode:** In situations when there is very little illumination, night mode can be activated to enhance visibility of objects and people by use of a special IR-filter and infrared LEDs. This setting is only to be used in dark conditions. Note that the system will automatically return to day mode after ignition off.

The selected mode is indicated via an icon (see Figure 4).

- Day mode: solid sun symbol.
- Night mode: crescent moon symbol.

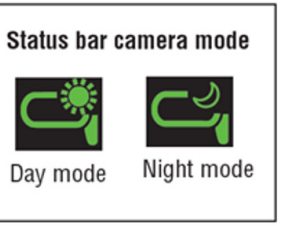


*Figure 4*

### 3.4. Automatic Brightness Control

Automatic Brightness Control uses light sensors to automatically adjust monitor brightness, depending on the surrounding light conditions.

### 3.6. Distance lines

Distance lines are not visible by default, but can be called up and set according to rules, see installation manual. The distance lines can only be set-up by your dealer.
Distance lines can be made visible on both the left-side monitor and the right-side monitor. See Figure 5.

These distance lines are used in the class II image and can help the driver to estimate the distance to other traffic on the road and to help the driver change lanes safely.
The distances lines **A**, **B** and **C** can be programmed by the dealer of the MirrorEye system during installation.

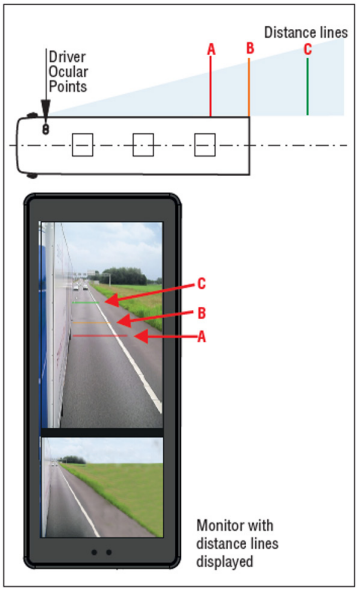


*Figure 5*

### 3.7. Defocus detection

The MirrorEye system continuously monitors the left and right cameras to detect if they are in focus or out of focus. If the system detects that any of the camera images is out of focus, then an icon will be displayed to warn the driver.

The focus check is not active when the system is in night mode. When the system is back in Day mode, then the focus check procedure resumes.

The result of the focus check is presented to the driver as icon on the status bar, see figure 6.

Note that the defocus detection feature is only intended to be used when the vehicle equipped with MirrorEye Peregrine MP is used in the UK. Contact your dealer to disable or enable this feature.

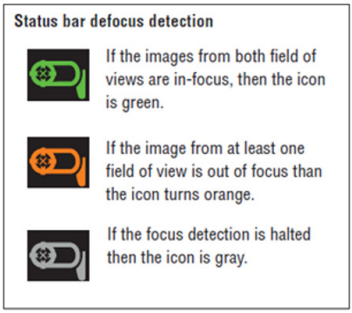


*Figure 6*

### 3.8. Status Bar icons

The status bar icons are designed to help the vehicle operator identify the status of each MirrorEye function;

**Activated**
**Deactivated**
**Error**
**Warning**

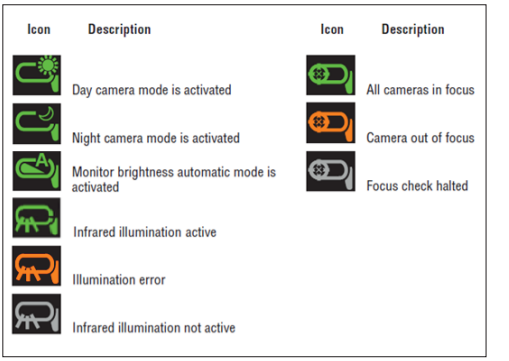


*Figure 7*

### 4. Lens Cleaning Instructions

Before starting the procedure make sure the system is completely powered off.

- 1st step: Spray with clean water.*
- 2nd step: Wipe with clean and dry lens suitable microfiber tissue.
- 3rd step : Check the images. If they are ok, further steps are not needed. If they are not ok, follow the step 4.
- 4th step: Spray with isopropanol or ethanol.
- 5th step: Wipe with clean and dry lens suitable microfiber tissue.
- 6th step : Check the images. If they are ok, no further action is needed. If they are not ok, repeat the steps 5 and 6.

*If you do not have clean water, use glass cleaner.

**DO NOT TOUCH THE CAMERA WITH BARE HANDS.**

**DO NOT CLEAN THE CAMERA IF THE IMAGE IS OK.**

## 5. Possible failures:

| Failure result | Action driver |
|---|---|
| 1. Black screen | 1. Driver should stop the vehicle in a safe manner, as soon as possible. |
| 2. No image | 2. Driver should stop the vehicle in a safe manner, as soon as possible. |
| 3. Mirrored image | 3. Driver should stop the vehicle in a safe manner, as soon as possible. |
| 4. Flipped image | 4. Driver should stop the vehicle in a safe manner, as soon as possible. |
| 5. Test pattern shown | 5. Driver should stop the vehicle in a safe manner, as soon as possible. |
| 6. Full in screen deformaton of image | 6. Driver should stop the vehicle in a safe manner, as soon as possible. |
| 7. Color representation on image is incorrect | 7. Driver should assess failure and stop vehicle if necessary. |
| 8. Partly in screen deformation of image | 8. Driver should assess failure and stop vehicle if necessary. |
| 9. Incorrect image sharpness | 9. Driver should assess failure and stop vehicle if necessary. |
| 10. Corrupted image stream due to Electric Magnetic Interference (EMI) | 10. Driver should assess failure and stop vehicle if necessary. |
| 11. Wrong placement of camera views on monitor | 11. Driver should assess failure and stop vehicle if necessary. |
| 12. Image too bright | 12. Driver should assess failure and stop vehicle if necessary. |
| 13. Image too dark | 13. Driver should assess failure and stop vehicle if necessary. |
| 14. Camera out of focus | 14. Driver should assess failure and stop vehicle if necessary. When cameras are dirty; clean camera if possible, else consult workshop |

**When the mentioned failures occur; the driver must stop the Vehicle and no further driving is allowed before the failures are resolved. In the event of a failure in the MirrorEye system; contact your dealer.**

## 6. Disposal

Disassembly, removal and disposal. Local regulations for dealing with waste must be followed when disposing of disassembled components or entire units.

## 7. General terms and conditions

Stoneridge-Orlaco is not liable for damage resulting from inadequate servicing, incorrect usage or alterations made to the equipment without informing the manufacturer in writing.



Stoneridge-Orlaco reserves the right to make changes to components at any time without informing customers beforehand or directly. All dimensions given are for commercial purposes.

Repairs are not covered in this manual. Please contact the Stoneridge-Orlaco service department.

This manual has been prepared with all due care and attention. However, Stoneridge-Orlaco cannot be held responsible for any errors in this manual or any consequences thereof.

## 8. Revisions

**A01** First release; August 2023

Stoneridge-Orlaco is a Manufacturing company that specializes in making cameras and monitor systems for commercial vehicles, fork-lift trucks, cranes, off shore and maritime.

Our objective is to design and produce camera systems for the professional market that improve the drivers' view and increase operating efficiency.

At our facility in Barneveld we locate our design, manufacturing, warehousing and service department.

Vision is our mission®. Stoneridge-Orlaco therefore deploys the development, manufacture, supply and service of camera and display systems that will improve safety and efficiency of all vehicles, machinery and vessels. Our systems give the end user a view on each blind spot and will create comfort and improved working conditions. Our active approach will support market demands and innovations and will lead to enthusiastic ambassadors in the market; our customers.

For more information: www.stoneridge-orlaco.com

**Stoneridge-Orlaco**
Albert Plesmanstraat 42, 3772 MN Barneveld
PO Box 193, 3770 AD Barneveld
The Netherlands

Phone: +31 (0) 342 404555
E-mail: info@stoneridge-orlaco.com
Internet: http://www.stoneridge-orlaco.com

KWD CORPORATION

株式会社 KWD

〒231-0028
神奈川県横浜市中区翁町 2-7-10
関内フレックスビル３ F
TEL: 045-264-4608 | FAX: 045-264-4609
https://www.kwd-corp.co.jp

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