



## PathFindIR™

Thermal imaging camera for driver vision enhancement

The FLIR Systems PathFindIR is a compact thermal imaging camera that significantly reduces the hazards of night time driving. It enables drivers to see much further, with improved clarity, than with standard headlights. Drivers can detect and monitor pedestrians, animals, or objects on or near the road, allowing more time to react to any potential danger. PathFindIR helps to detect and recognize potential hazards in total darkness, smoke, rain and snow.

The PathFindIR module can be integrated into military vehicle designs, or adapted for aftermarket commercial vehicle applications.

### Excellent image quality

The PathFindIR incorporates an uncooled 320 x 240 pixels microbolometer. This maintenance free system delivers crisp video images which can be displayed on virtually any display that accepts composite video.

### Wide-angle lens

The PathFindIR is equipped with an 19 mm wide angle lens. It give you an extremely wide field of view (36°), resulting in excellent situational awareness.

### Designed for use in harsh environments

The PathFindIR is extremely rugged. Its vital core is well protected against humidity and water. The PathFindIR can be cleaned with a hose just like any other equipment. The PathFindIR operates between -40°C and +80°C.

The PathFindIR has a built-in heater to defrost its protective window. This heater is capable of defrosting a 2mm layer of ice frozen to the window within 15 minutes when ambient temperature is -30°C and wind speed against the window is 100 km/hr. The heater is automatically powered when window temperature is less than +4°C and powered down when window temperature is more than +6°C. This ensures a clear lens and perfect infrared images displayed on your monitor even in extremely cold environments.

### Compact, easy to install

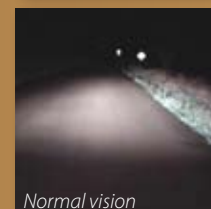
The PathFindIR is extremely compact (5.8 x 5.7 x 7.2 cm) and weighs only 360 grams. This allows for easy integration in any vehicle. The PathFindIR can easily be installed behind a vehicle grill or in any other compact location.



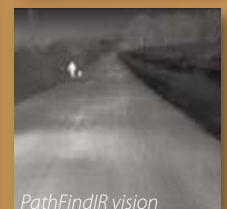
Normal vision



PathFindIR vision



Normal vision



PathFindIR vision

### Optional cable

A 6 meter long cable is available for routing the PathFindIR's power and video interface into a passenger compartment. On one side the cable connects to the PathFindIR. On the other end it has 2 wires that can be terminated, as required by the user, for hooking into the vehicle power bus and a video cable that is terminated with a BNC connector. It can be adapted to the video input connections on most standard monitors.

### Thermal imaging for driver vision enhancement

Thermal imaging is a powerful driver's vision enhancement system, which significantly reduces the risks of night-time driving and allows you to see up to 5x further than with headlights. It produces clear images in total darkness, smoke, rain and light fog. It needs no light whatsoever to operate.

Thanks to thermal imaging, drivers can more quickly detect and recognize potential hazards and avoid deadly accidents.

## Technical specifications

### IMAGING PERFORMANCE

|                           |  |
|---------------------------|--|
| Detector type             | Focal Plane Array (FPA), uncooled microbolometer |
| Spectral range            | 324 x 256 pixels                                 |
| Field of view             | 8 to 14µm  |
| Spatial resolution (IFOV) | 36° (H) x 27° (V) with 19 mm lens                |
| Thermal sensitivity*      | 2 mrad   |
| Image frequency           | 100 mK at +25°C                                  |
| Focus                     | 8.3 Hz PAL or 7.5 Hz NTSC *                      |
| Image processing          | Automatic (25 m to infinity)                     |
|                           | Digital Detail Enhancement (DDE)                 |

### SYSTEM FEATURES

|                  |                                       |
|------------------|---------------------------------------|
| Time to image    | < 2 seconds                           |
| Automatic heater | When window temperature is below +4°C |

### IMAGE PRESENTATION

|                |  |
|----------------|--|
| Video output   | RS170 EIA/NTSC or CCIR/PAL composite video, 75Ω          |
| Connector type | Standard 6 meter power/video cable with sealed connector |

### POWER

|              |  |
|--------------|--|
| Requirements | 6 - 16 V DC                                    |
| Consumption  | 2 W quiescent, 6 W max (with window heater on) |

### ENVIRONMENTAL SPECIFICATION

|                             |   |
|-----------------------------|---|
| Operating temperature range | -40°C to +80°C  |
| Storage temperature range   | -57°C to +105°C (Extended storage time above +40°C is not recommended due to reduction in service life) |
| Humidity                    | 6,500 hours at 81%rh at +25°C and salt spray per IEC 60068-2-11Ka                                       |
| Sand / dust                 | Mil-Std810  |
| Icing                       | Heater will defrost 2 mm of ice within 15 minutes at -30°C and windspeed of 100 km/h                    |
| Encapsulation               | Hermetically sealed enclosure   |
| Shock                       | 5 30g shocks in 2 directions on 3 axes (30 total) 11 mSec duration per IEC 60068-2-27Ea                 |
| Vibration                   | IEC 60068-2-64  |

### PHYSICAL CHARACTERISTICS

|               |   |
|---------------|---|
| Camera Weight | 360 grams   |
| Camera Size   | 57.4 mm x 56.1 mm x 71.4 mm excluding connector which protrudes an additional 28.7 mm |

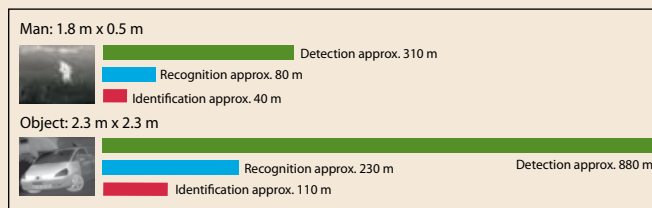
\* 30 Hz NTSC or 25 Hz PAL available. Subject to approval of the US Department of Commerce for use outside the USA.



### PathFindIR: range performance 19 mm lens



Optional cable to connect the PathFindIR



Actual range may vary depending on camera set-up, environmental conditions, user experience and type of monitor or display used.

#### Assumptions:

50 % probability of achieving objective at specified distance given 2°C temperature difference and 0.85 / km atmospheric attenuation factor.

#### Legal disclaimer:

FLIR Systems accepts no responsibility and can not be held liable for any error or accident resulting from the use of its thermal imaging systems or errors in the interpretation of the image by the user.

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

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The PathFindIR is extremely compact and can easily be integrated behind e.g. a vehicle grill.



#### FLIR Commercial Vision Systems B.V.

Charles Petitweg 21  
4847 NW Teteringen - Breda  
The Netherlands  
Phone : +31 (0) 765 79 41 94  
Fax : +31 (0) 765 79 41 99  
e-mail : flir@flir.com

#### FLIR Systems, Inc

CVS World Headquarters  
70 Castilian Drive  
Santa Barbara, CA 93117  
USA  
Phone : +1 805 964 9797  
Fax : +1 805 685 2711  
e-mail : sales@flir.com

#### FLIR Systems Ltd.

United Kingdom  
Phone : +44 (0) 1732 220 011  
Fax : +44 (0) 1732 220 014  
e-mail : flir@flir.com

#### FLIR Systems AB

Spain  
Phone : +34 915 73 48 27  
Fax : +34 915 73 58 24  
e-mail : flir@flir.com

#### FLIR Systems AB

Sweden  
Phone : +46 (0) 8 753 25 00  
Fax : +46 (0) 8 753 23 64  
e-mail : flir@flir.com

#### FLIR Commercial Vision Systems

China  
Phone : +86 10 5869 9786/8762  
Fax : +86 10 5869 8763  
e-mail : flir@flir.com

#### FLIR Commercial Vision Systems B.V.

Dubai - United Arab Emirates  
Phone : +971 4 299 6898  
Fax : +971 4 299 6895  
e-mail : flir@flir.com

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