

# THE MOBILEYE 5-SERIES

Our Vision. Your Safety.™



## The Mobileye 5-Series Technical Documentation



A modern and comprehensive solution for accident prevention and mitigation

### Even two seconds of distraction can lead to a motor vehicle collision.

The Mobileye 5-Series uses a single-camera-based safety solution for collision prevention and mitigation. A smart camera, mounted on the interior side of the windshield, utilizes Mobileye's pedestrian, vehicle, lane and traffic sign detection technologies to measure the distance to pedestrians, bicyclists, vehicles and lane markings, providing the driver with timely and often life-saving alerts.

The Mobileye 5-Series also utilizes Bluetooth wireless technology, enabling to receive all Mobileye alerts straight to the driver's private Smartphone.

### The Mobileye 5-Series is never distracted, always looking forward and ready to warn the driver of sudden danger

#### 6 Driver assistance applications in one system

- ▮ Pedestrian Collision Warning (PCW)
- ▮ Forward Collision Warning (FCW) – Both in Highway and Urban settings, including motorcycle detection
- ▮ Lane Departure Warning (LDW)
- ▮ Headway Monitoring and Warning (HMW)
- ▮ Intelligent High-Beam Control (IHC)
- ▮ Traffic Sign Recognition (TSR) including Speed Limit Indication (SLI)

- ▮ Smartphone connectivity using Bluetooth wireless technology
- ▮ Universal Mount 1 box solution
- ▮ Single wiring harness for Simplified installation requiring 5 wires
- ▮ IHC analog output

### Visual Warning Indication available on Android based Smartphone via Mobileye smartphone Application

- ▮ Vehicle detection indication
- ▮ Gauge for headway value monitoring
- ▮ Color-coded visual headway alerts
- ▮ Visual FCW, PCW, LDW
- ▮ IHC indication
- ▮ TSR/SLI indication
- ▮ Driving Statistics

### Optional High-intensity visual indications on a LED display unit (EyeWatch), offering:

- ▮ Vehicle detection indication
- ▮ Gauge for headway value monitoring
- ▮ Color-coded visual headway alerts
- ▮ Visual FCW, PCW, LDW and IHC alerts

### Functional day and night - and in almost any weather conditions

### Based on Mobileye's acclaimed pedestrian, vehicle, lane and traffic signs detection technologies

### Fits all CAN BUS supported vehicle types, including passenger cars and commercial vehicles

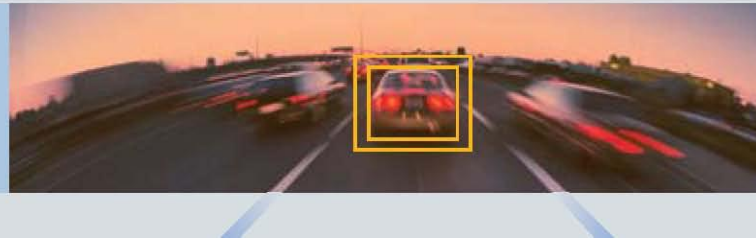
## Technical Specifications

### System Components

- ▮ A windshield-mounted vision sensor unit with a compact High Dynamic Range CMOS (HDRC) camera and SeeQ2® image processing board
- ▮ Smartphone connectivity utilizing Bluetooth wireless technology (Smartphone device not included)
- ▮ A high-quality audio alert buzzer
- ▮ A user-friendly, high-visibility EyeWatch Display and control unit, for visual directional warnings with numerical headway indication and customization options. (EyeWatch Display is an optional addition to the Smartphone display)

# MOBILEYE 5®

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## Technical Specification Sheet

| Mobileye 5 Main unit                                |   |
|---|---|
| Physical Characteristics                            |   |
| Length:   | 122mm   |
| Width (without lens):                               | 79mm  |
| Height:   | 43mm  |
| Weight:   | 200g  |
| Color:  | Black   |
| Case Material:                                      | Aluminum/plastic  |
| Cable Length:                                       | 3m  |
| Cable Diameter:                                     | 4.8mm   |
| Electrical Characteristics                          |   |
| Input Voltage:                                      | 12-28VDC  |
| Input current:                                      | 12v → 220mA, 24v → 120mA  |
| Environmental Characteristics                       |   |
| Operating Temperature:                              | -20°C to +85°C  |
| Storage Temperature:                                | -40°C to +105°C   |
| Vision Sensor                                       |   |
| Vision Sensor:                                      | Aptina MT9V024 (1/3") RCC   |
| Array Format:                                       | Total: 752H x 480V - Active pixels: 640H x 480V                   |
| Optical Format:                                     | 1/3"  |
| Pixel Size:   | 6.0µm x 6.0µm   |
| Dynamic Range:                                      | >55dB linear;<br>>100dB in HDR mode                               |
| Shutter type:                                       | Global shutter—TrueSNAP™  |
| Responsivity:                                       | 4.8 V/lux sec (550nm)   |
| Angle of view:                                      | 38° (horizontal)  |
| Focus range:  | 5m to infinity  |
| AGC:  | Automatic Gain Control of the image sensor for high dynamic range |
| Audio Buzzer  |   |
| SPL Minimum   | 86dB @ 10cm   |
| EyeQ2® Vision Processor                             |   |
| 332 MHz clock rate running seven parallel processes |   |
| Two MIPS24KF 32bit CPUs                             |   |
| Eight 64bit Vision Computing Engines (VCE)          |   |
| Eight channels DMA                                  |   |
| 64bit width 512KB on-chip SRAM                      |   |
| Bluetooth Module                                    |   |
| CSR BC5 Class II v2.1                               |   |
| Profile Support: Serial Port Profile (SPP)          |   |
| Pairing Code: 1234                                  |   |
| Mobile Platform Supported: Android, IOS*            |   |
| *Only Mobileye 5 models with Blue L.E.D             |   |

| EyeWatch Display Unit         |                         |             |
|-------------------------------|-------------------------|-------------|
| Physical Characteristics      |                         |             |
| Diameter:                     | 49mm                    |             |
| Depth:                        | 24mm                    |             |
| Depth (leg closed):           | 29mm                    |             |
| Depth (leg open):             | 66mm                    |             |
| Weight:                       | 46g                     |             |
| Color:                        | Black                   |             |
| Case Material:                | Plastic                 |             |
| Cable Length:                 | 3m                      |             |
| Cable Diameter:               | 3.1mm                   |             |
| Electrical Characteristics    |                         |             |
| Input Voltage:                | 5VDC                    |             |
| Input Current:                | 500mA                   |             |
| Environmental Characteristics |                         |             |
| Operating Temperature:        | -20°C to +80°C          |             |
| Storage Temperature:          | -40°C to +100°C         |             |
| Operating Humidity:           | 95%                     |             |
| Display Characteristics       |                         |             |
| Viewing Angle:                | 120 Deg                 |             |
| Display colors:               | Red, White, Green, Blue |             |
| Intensity                     | Red:                    | 8mcd (min)  |
|                               | White:                  | 40mcd (min) |
|                               | Green:                  | 15mcd (min) |
|                               | Blue:                   | 8mcd (min)  |

| Electrical Characteristics     |                          |
|--------------------------------|--------------------------|
| Input Voltage                  | 12-28VDC                 |
| Input current (full operation) | 12v → 360mA, 24v → 180mA |
| Input current (Stand-By Max)   | 12v → 10µA, 24v → 10µA   |
| Max Power Consumption          | 5.2W                     |

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