



**Solutions, When the Conventional Ones  
Run Out of Breath**



# ASPHALT DETECTOR

FBG SENSORS & DETECTORS

## Sensitive road detector for smart traffic

The Asphalt Road detector (FBGS-01 AR) is a specially designed strain sensor which is adapted for installation in upper layers of the asphalt and under the roads. This detector uses the state of the art FBG technology with unique mechanical design and superior sensitivity which enables it to recognize passing vehicles. The carbon fiber tube made detector with additional fiber lead in/out length can be installed directly in the road or after inserting in a stainless steel protective tube. The condition is that the detector can flex due to strain along any point of its length.

### 100% passive detector

As the detector doesn't need the power supply, it easily monitors places without electricity and hazardous or hard to reach areas.

### Balanced response

The detector provides excellent sensitivity along its entire length to ensure balanced response to a whole traffic lane.

### Special design

Special detector design with minimal footprint enables direct and fast installation in asphalt infrastructure or under the roads.

## KEY PRODUCT FEATURES & BENEFITS

### Protected as IP68 rated devices

The protection comparable to the international standard rating of IP68 guarantees complete dust-tightness and protection against the effects of long periods of immersion in water.

### Connectivity

The detector can be used as a standalone sensor or in series as part of a larger detection network to minimize the cabling costs.

### Embedded monitoring

This optical detector is even designed to be embedded into the asphalt structures in the upper layers of road.

### Immune to EMI/RFI

The detector enables operation even in harsh environments, as the technology is fully passive, explosion safe and immune to electro-magnetic/radio frequency interference.

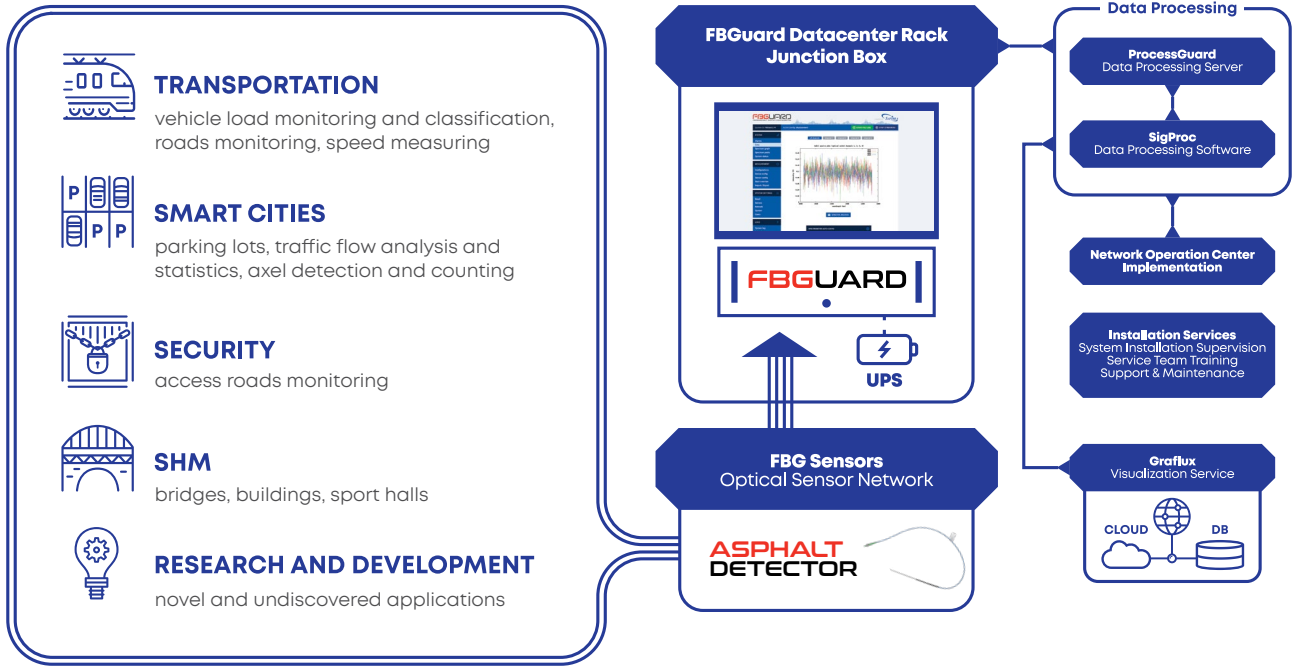
### Universal platform

Additional detector types can be used together with the road detector (flooding - manhole detector, strain, temperature, pressure, etc.).

### Customized size

The detector's sensitive length can be customized to correspond to the road width or road lane.

# PROJECT REQUIREMENTS



## TECHNICAL PARAMETERS

### Optical, Environmental and Mechanical

Detector length	0,35 - 3,75 m* 3,0 - 3,75 m @ one lane typ.
Dimensions (housing diameter)	Carbon housing 1,5 mm Outer housing 5 mm
Housing material	Carbon fiber tubes in protective stainless steel tube
Strain range	10 000 $\mu\epsilon$ ( $\mu\text{m}/\text{m}$ )
Strain sensitivity	1.2 $\text{pm}/\mu\epsilon$
FBG central wavelength	1505 to 1590 nm @ FBGuard system typical
Operational temperature range	-40 - +60 °C
Waterproof design	IP68

### Fiber Optic Cable

Fiber type	SMF G.652
Fiber input/output	3 mm protective cable*
Lead in/out fiber length	5 m one side*
Fiber termination	<b>Bare fiber</b> (scissor cut for splicing) - default FC/APC - optional*

### Mounting

Embedded	In asphalt groove depth of up to 50 mm, filled with special 2-component epoxy resin material like (Biolast 2K-XL 013271)
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\* These parameters can be customized upon request.

**GET IN TOUCH WITH US**  
and we will recommend you the most suitable solution for your project.

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