CLEVELAND ELECTRIC LABORATORIES
Fiber Optic Sensing Solutions

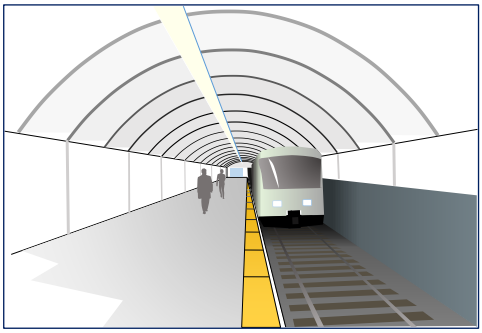
FiberStrike® by Cleveland Electric Labs
LIGHT CAPTURING MOTION

LCM-940 Pedestrian Sensing Platforms

LCM-940 sensing platforms, developed and patented by Cleveland Electric Laboratories, are an effective solution for detecting the presence of pedestrians in specific locations. LCM-940 platforms are part of the Fiber*Strike* suite of fiber optic sensing solutions made by Cleveland Electric Laboratories. Fiber*Strike* sensing systems use light to sense position or movement; Fiber*Strike* sensors contain no electronic components, require no electrical power and radiate no signals. They cannot be bypassed without detection, and are immune to interference and environmental effects that can plague electrically-based sensors.

LCM-940 sensing platforms connect to remote monitoring equipment via non-conductive optical fiber. Benefitting from the very long working distances allowed by fiber optics, sensing platforms may be located tens of kilometers distant from the monitoring equipment. Existing standard communications fiber infrastructures may be leveraged to connect a network of platforms, and multiple platforms may be multiplexed over a single optical fiber while remaining individually addressable, simplifying the logistics and reducing the costs of installation.

Example applications for Fiber*Strike* LCM-940 platforms include sensing of pedestrian presence at railway/subway/mass-transit platforms, movements along defined paths, and intrusion detection along hallways or in front of doorways or hatches that access secure areas. Specifications for LCM-940 platforms are provided on the reverse.



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LCM-940 platform specifications

Performance Properties

Sensing principle	FBG strain change causes wavelength shift
Actuation method	Weight depresses platform surface
Sensitivity	1kg (7 oz.) weight minimum
Wavelength shift direction	Wavelength shifts longer when weight is applied to platform
Mechanical life	10,000,000 cycles minimum
Operating temperature range	-25°C to +70°C (-13°F to +158°F)

Optical Properties

Insertion loss	0.25dB per 2 ft (61cm) square
Wavelengths	FBGs at ≥5nm intervals, selected based on application
Reflectivity	>70%
FWHM (-3dB)	0.3nm (apodized grating, SLSR >15%)

Physical Properties

Dimensions (unit standard size options)	Width: 2 ft or 4 ft (61cm or 122cm) Length: 2 ft (61cm) to 12 ft (365cm) in increments of 2 ft (61cm) Thickness: 1 in (2.54cm) Grid squares on 1.5 in (3.8cm) centers Custom intermediate widths, lengths and grids are available on special order
Mounting	Supported at perimeters, also at intermediate points as required by span
Weight load capacity (supports at 12 in / 30cm intervals)	Maximum recommended: 1350 lb/ft^2 (6600 kg/m^2) uniformly distributed load Ultimate capacity: 6750 lb/ft^2 (33000 kg/m^2) uniformly distributed load
Protection rating	IP-66 per IEC 60529
Platform material	Fiberglass-reinforced resin grid, slip-resistant grit surface, non-conductive
Fire retardant rating	Class 1, flame spread rate ≤25 per ASTM E84
Platform material color	Yellow standard; other colors available on special order
Cable type	Aramid reinforced pigtail, 3mm Ø jacket (two pigtails per platform unit)
Cable length	1.5m ±10cm (60 in ±4 in) standard; other lengths available on special order
Cable tensile load	Maximum 500N (110 lb) during installation, 300N (70 lb) operating
Cable bend radius	Minimum 29mm (1.14 in) during installation, 25mm (1.0 in) operating
Fiber type	SMF-28 compatible
Fiber coating	Polyimide
Connection method	Fusion splice standard; optional APC connectors on special order

LCM-940 sensing platform data may be presented via IntelliOptics™ software - a powerful but intuitive graphic user interface. The IntelliOptics architecture supports a virtually unlimited quantity of LCM-940 sensing platforms, automatically transmits alerts, provides secure databases, and allows flexible and tailorable data presentation formats that facilitate integration and correlation of data from all platforms. A cloud hosting option facilitates remote, simultaneous access for multiple authorized users.

Cleveland Electric Laboratories is committed to providing state of the art, high-performance monitoring solutions that exceed user requirements, and we invite your inquiries.

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