



**We make
highways
talk™**

- **MANAGEMENT**
- **SAFETY**
- **PRESERVATION**

International Road Dynamics Inc. develops and maintains traffic management products and systems technology that make highways talk. What are they saying? They are providing information that roadway administrators need to manage traffic, preserve infrastructure and provide safety warnings to drivers.

IRD's multi-discipline, innovative and customer-focused team is expert in advanced technologies, advanced traffic solutions and custom-designed systems.



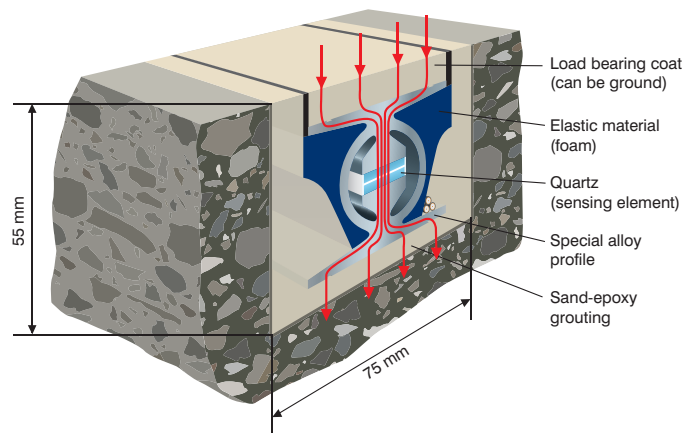
**CUSTOMER
DRIVEN™**

MARCH 2009, REV D
PRINTED IN CANADA

Lineas® Quartz Sensor For Weigh-In-Motion

The Lineas® sensor is a quartz sensor to measure the wheel and axle loads and to determine the vehicle gross weight under rolling traffic conditions.

- Excellent long-term stability
- Wide measuring range: from slow to high-speed
- Very high natural frequency and signal dynamic
- Protected from the intrusion of water (degree of protection IP68)
- Insensitive to temperature changes
- Quick and easy installation
- Adaptive to different pavement characteristics
- Safe mounting into the pavement
- The sensor surface can be ground up to 6 mm in case of pavement deformations



Description

The Lineas WIM sensor Type 9195F is a force sensor with quartz elements. It consists of a light metal profile of which quartz disks are fitted under preload.

When a force is applied to the sensor surface, the quartz disks yield an electric charge proportional to the applied force through the piezoelectric effect.

The electric charge is converted by a charge amplifier into a proportional voltage which then is processed further.

The sensor is integrated into the road surface and is only for permanent installation.

Applications

- Traffic data collection (statistics)
- Overload detection
 - Pre-selection for static weight controls
 - Automatic (direct) weight enforcement
 - Bridge protection
- Weight dependent tolling
- Road research
- Pavement Management System (PMS)

Lineas[®] Quartz Sensor For Weigh-In-Motion

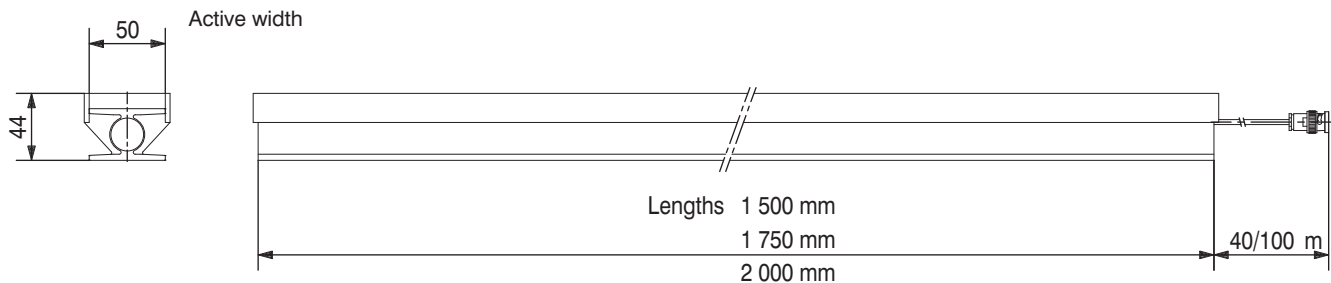
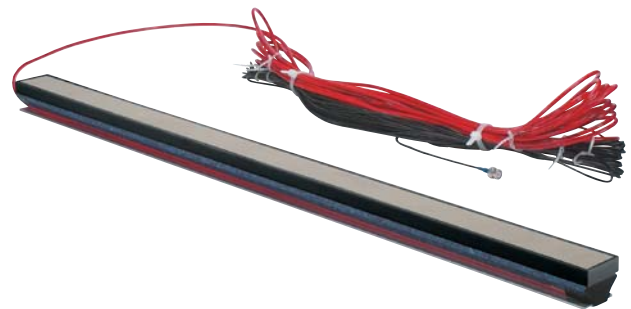
Technical Data

Sensor

Measuring range wheel load At a reference tire contact area (tread length x tread width)	kN mm	0 ... 150 200x320
Max. load-bearing capacity of the sensor surface	N/mm ²	4,6
Sensitivity, nominal	pC/N	-1,76 ± 5 %
Max. sensitivity shift over sensor length	%	< ± 3
Threshold	N	< 0,5
Linearity	%FSO	≤ ± 2
Hysteresis	%FSO	≤ 2
Cable chunking resistance	N	300
Operating temperature range	°C	-40 ... 80
Temperature coefficient of sensitivity	%/°C	-0,02
Insulation resistance	Ω	> 1 · 10 ¹⁰

General Data

Cable length	m	40/100
Connector		BNC pos.
Capacitance		
Sensor with 40 m cable	nF	8 ... 12
Sensor with 100 m cable	nF	14 ... 18
Degree of protection	EN60529	IP68



The installation of Lineas sensors requires the supervision of an Engineer certified by Kistler. Please contact a sales person at IRD for information and pricing on the Lineas Quartz sensor, interface, and installation grout.



Corporate Office

702 - 43rd Street East
Saskatoon, Saskatchewan
Canada S7K 3T9
Tel: +1(306) 653-6600
Fax: +1(306) 242-5599
Toll Free: 1-877-444-4IRD (4473)
Email: info@irdinc.com

U.S. Office

2402 Spring Ridge Drive, Suite E
Spring Grove, IL
USA 60081
Tel: +1(815) 675-1430
Fax: +1(815) 675-1530

Publicly Traded on the TSX (Symbol IRD)
Find out more about IRD on our website: www.irdinc.com

IRD products and components are protected by one or more worldwide patents and/or trademarks.
IRD reserves the right to change, modify, or improve its products at any time without notice.

PRINTED IN CANADA