

8/11/2023

Local Government Cooperative
3100 S. Vista Ave, Suite 202
Boise, ID 83705
Subject: RFB 23-003 Pricing for MD30 Mobile Sensor and Visualization

Dear Local Government Cooperative,

Vaisala is happy to participate in RFB 23-003 Winter Maintenance Equipment and Products. I am submitting this pricing quote to you on behalf of Vaisala, a leading provider of innovative sensor solutions for Winter Maintenance. We greatly value our partnership with Idaho LCG and have always been committed to offering you the best products and services.

We are excited to introduce our latest offering, the MD30 Mobile Sensor, designed to provide unparalleled accuracy and reliability during winter maintenance plowing operations. The MD30's cutting-edge technology ensures real-time data collection, seamless integration, and advanced analytics capabilities, making it an indispensable tool for optimizing operations and decision-making.

Vaisala will be offering the MD30 Sensor and associated equipment to the LCG:

- **MD30 Mobile Sensor - 5% discount off the list price.**
- **Data visualization will be offered for each unit at a discounted price of \$1,050.00/year.**

This offer reflects our commitment to supporting the LCG goals by providing you with access to the latest and most advanced technologies at a more cost-effective rate.

Our team is ready to assist you in understanding the features, benefits, and applications of the MD30 Mobile Sensor. This product can significantly enhance your current operations and reduce the amount of product being used for de-icing and anti-icing. We are here to answer any questions you may have.

To learn more about the MD30 Mobile Sensor or set up a meeting, please get in touch with Kenberley Field, West Region Sales Manager, at 720-237-8586 or mail kenberley.field@vaisala.com]

We look forward to the possibility of contributing to your success through our state-of-the-art sensor solutions. Please do not hesitate to contact us if you require further information or assistance.

Sincerely,



Kenberley Field
West Region Sales Manager
Vaisala
(720) 237-8586 - Kenberley.field@vaisala.com

Vaisala Mobile Detector MD30

See real-time road conditions anywhere on your network



The Vaisala Mobile Detector MD30 is the first device designed specifically for snow plows to accurately collect and transmit data on road surface state, grip, and surface temperature along the route.

The MD30 helps fill road condition gaps in between stationary weather stations so you can see conditions across the entire network. Enhanced decision-making drives optimal material usage and resource deployments, resulting in cost savings and decreased environmental impact.

The MD30 attaches to the front of a snow plow or other vehicle; automated data collection from the start allows for ease of use while drivers concentrate on the road. This real-time data helps both drivers and supervisors make quick decisions to improve road conditions and avoid time-consuming rework.

Key Benefits

See exactly what's on the road

Eliminates guesswork on changing weather conditions by transforming snow plows into weather stations and providing real-time data to supervisors and drivers alike.

Rely on hardware built for snow plows

Designed to withstand heavy vehicle vibration and prevent water ingress. Patent-pending hood protects the lens from snow and road spray and easily removes for cleaning.

Go beyond surface temperature

Transmits real-time data on grip and road state, layer thicknesses of water/ice/snow, road and air temperature, relative humidity and dew point.

Get started quickly and affordably

Compact size enables easy installation with many options, and affordability enables widescale fleet deployments.

Integrate for decision support & spreader control

Ready for use as part of a decision support system such as Vaisala Wx Horizon or your current spreader control system.

Vaisala MD30 at a glance

Key features

- Compact, multiparameter sensor
- All key measurements, such as surface state, grip, and surface temperature
- Designed for snow plows, suitable for any vehicle
- Based on Vaisala's market-leading DSC technology
- Can be combined with video and photo data and visualized online



Real-time answers to challenging questions

For winter road maintenance supervisors

- What's happening between my weather stations?
- Does the current pavement forecast reflect the state of my roads?
- Are we using the right material types and amounts for each road segment?
- Are the trucks where they should be, clearing the most impacted and important routes first?
- Are any operational adjustments necessary due to quickly changing conditions?

For plow operators

- Is there black ice or moisture on this road? How thick is the layer and does it make the road slippery?
- Is the pavement temperature falling and do I need to treat the road to prevent a potential icy situation?
- Should I be applying more or less material?
- What's left on the road after my blade has passed?

Why Vaisala?

Vaisala's weather and environmental technologies enable unrivaled road network awareness — keeping roadways safe and efficient in any season.

As the gold standard for precision and reliability, Vaisala's holistic approach provides customers with end-to-end simplicity, valuable partnership, and a comprehensive portfolio of solutions that are constantly evolving. Our 85+ years of innovation are reflected in our guiding principles for roads:

1. Move ahead

Only Vaisala provides data of unrivaled depth and breadth while synthesizing it into objective decision support — so everyone can keep moving toward better, more insightful ways of operating.

2. Mobility and beyond

We deliver the right insights to the right people at the right time, enabling a wide range of stakeholders to act with confidence and achieve a comprehensive understanding of their road networks and the vehicles on them — creating better, safer outcomes for all.

3. The innovators

As a recognized industry expert, we continuously apply our knowledge and experience to create next-generation solutions that advance the industry; enabling stakeholders to innovate and optimize road networks like never before.

4. See, understand, decide

Vaisala gives users rich data intelligence that improves real-time decision-making as well as observation enhanced forecasting to enable strategic planning. With a better, fuller understanding of their road network, users can do their jobs more decisively and effectively than ever.

VAISALA

vaisala.com/MD30



Scan the code for more information

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Mobile Detector MD30



Features

- Compact, multi-parameter mobile sensor
- Designed for snow plow trucks, suitable for any vehicle
- Proven DSC technology optimized for mobile measurements
- Simultaneous water, ice, and snow layer reporting
- Molded design to withstand heavy vibration and water ingress
- Patent pending double-hood for window protection
- Hand-removable hood for easy window cleaning

Vaisala Mobile Detector MD30 is a mobile road and runway condition sensor for winter maintenance operations. The compact MD30 measures all key surface weather parameters and is suitable for snow plow trucks and other vehicles. MD30 data is targeted to enable more accurate maintenance decision-making and salt usage optimization.

Measurements

- Grip
- Surface state
- Surface layer thickness
- Surface temperature
- Air temperature
- Dew point and frost point
- Relative humidity

Reliable in any weather

To provide quick response time and high sensitivity in road and runway condition reporting, MD30 utilizes an improved, fast-measuring version of the proven DSC laser technology. In cases where external heat sources could disturb the temperature measurements, the surface and air temperature sensors can be separated from the MD30 body and placed in desired locations.

Robust for any vehicle

The rugged design allows MD30 to operate in snow plow trucks and other vehicles. The core is molded to withstand continuous vibration and to prevent water ingress. Further, the hood has a special vented double structure that directs air flow to protect the window from dirt and splashes.

Easy to use and maintain

MD30 provides simplicity for both use and maintenance. It starts to measure automatically when the vehicle starts, and constantly monitors the sensor status, such as the window contamination. The window is heated to avoid dew and frost formation. The sensor automatically indicates the need to clean the window. When cleaning is needed, the window can be accessed by simply removing the hood by hand, without any tools.

Compact and cost-effective

MD30 provides grip, as well as other key measurements in one package. The cost-effective product allows you to use the full potential of your vehicle fleet as a data collection platform.

Output and visualization

MD30 outputs a binary data message over an RS-232 interface, which can also be turned wireless with an external Bluetooth module.

MD30 data can be collected and locally visualized with Vaisala RoadAI Android mobile application. The app can also be set to record video or take photos.

The powerful combination of sensor data, images and video can be visualized in Vaisala Wx Horizon or Vaisala RoadAI online maps.

In Wx Horizon, MD30 data can be used to improve road and runway weather forecasts and it can be combined with fixed weather station data in the same map.

Technical Data

Measurement specifications

Grip and surface state

Reported level of grip	0.09 ... 0.82
Reported surface states	Dry, moist, wet, snowy, icy, slushy

Surface layer thickness

Water	0 ... 5 mm (0 ... 0.20 in)
Ice	0 ... 2 mm (0 ... 0.08 in)
Snow (water equivalent) ¹⁾	0 ... 1 mm (0 ... 0.04 in)
Accuracy, water and ice ²⁾	±10 % at 0 ... 2 mm (0 ... 0.08 in)

Surface temperature

Measurement range	-40 ... +60 °C (-40 ... +140 °F)
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Air temperature and relative humidity

Humidity range	0 ... 100 %RH
Temperature range	-40 ... +60 °C (-40 ... +140 °F)
Dew point range	-40 ... +60 °C (-40 ... +140 °F)

- 1) 1 mm (0.04 in) snow water equivalent corresponds to snow depth of approx. 10 mm (0.39 in).
 2) According to laboratory measurement method as described in latest draft (2020) of EN 15518-4.

Measurement details

Measurement interval	40 times/s
Light source	Laser
Layer thickness reporting	3 layers simultaneously (water, ice, snow)
Window dew/frost protection	Heated window
Window contamination reporting	Clean, contaminated, heavily contaminated
Window cleaning access	Hand-removable hood

Operating environment

Operating temperature ¹⁾	-40 ... +60 °C (-40 ... +140 °F)
Storage temperature	-40 ... +60 °C (-40 ... +140 °F)
Operating humidity	0 ... 100 %RH

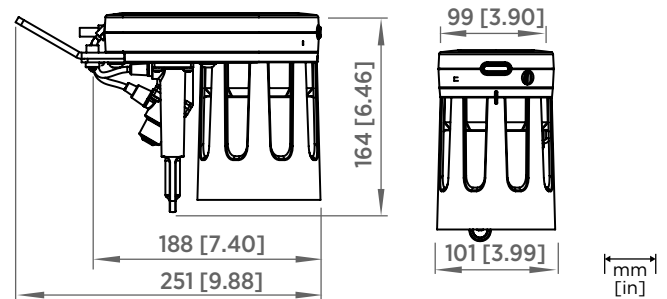
- 1) In +35 ... 60 °C (+95 ... 140 °F), surface layer thickness measurement performance may be degraded.

Inputs and outputs

Powering	12 ... 32 V DC
Power consumption, maximum	15 W
Protocol	RS-232
Protocol, with optional Bluetooth module	RS-232-to-Bluetooth
Data output	Binary

Mechanical specifications

Sensor structure	Encapsulated and molded
IP rating	IP68
Installation height, mobile sensor	20 ... 110 cm (7.87 ... 43.31 in)
Weight, mobile sensor with bracket	1.8 kg (4.0 lb)



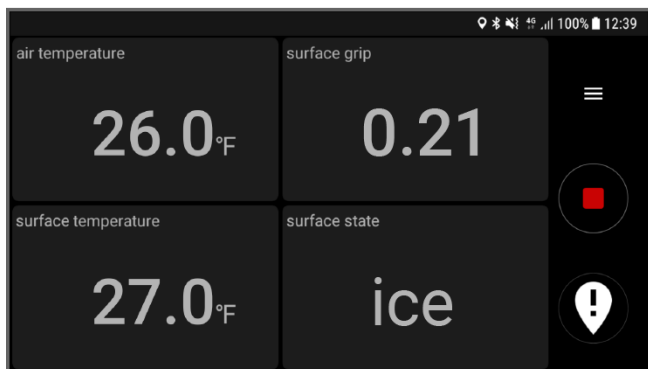
Mounting options

Standard mounting bracket for front, side, rear, bottom mounting	MDBRACKET ¹⁾
Front towing hook mounting	MD30FRONTMOUNT
Rear trailer hook mounting	MD30REARMOUNT ²⁾ MD30REARKIT ³⁾
Mounting kit for temperature sensors	MD30EXTSET

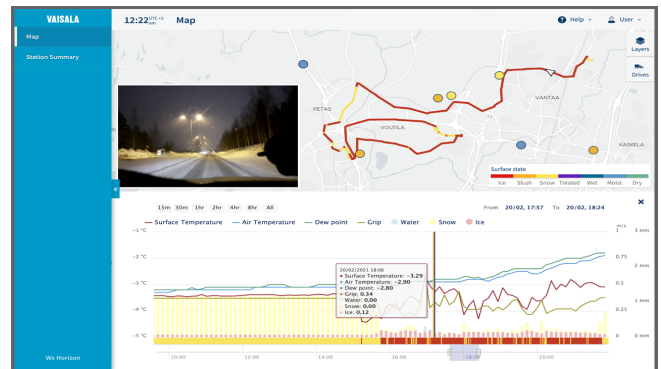
- 1) Delivered with each MD30 sensor.
 2) MD30 mounting kit for vehicle rear trailer hook.
 3) MD30 sensor with mounting kit for vehicle rear trailer hook and Bluetooth module enclosure.

Compliance

EU directives	EMC Directive (2014/30/EU)
EMC compatibility	EN 61326-1, industrial environment CISPR 32 / EN 55032, Class B FCC part 15, class B ICES-3 (B)
Cold	IEC 60068-2-1
Dry heat	IEC 60068-2-2
Change of temperature	IEC 60068-2-14
Shock	IEC 60068-2-27
Damp heat, cyclic	IEC 60068-2-30
Vibration	IEC 60068-2-64
Corrosion and salt mist	VDA 621-415
Eye safety	IEC 60825-1 Class 1 laser product
Compliance marks	CE, China RoHS



Data visualization on Vaisala RoadAI mobile app



Data visualization on Vaisala Wx Horizon online map



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