



Scanning at highway speeds. Kestrel measures vehicle height in real time as traffic passes at full roadway speed — flagging over-height vehicles without slowing or contacting them.



Kestrel sensor unit. Compact LiDAR in a sealed stainless enclosure with integrated side-mount bracket — minimal infrastructure, fast installation on a standard roadside pole.



Warning in action. Kestrel triggers flashing beacons and warning signs the moment an over-height vehicle is detected — alerting drivers before they reach the low-clearance structure.

OVER-HEIGHT DETECTION & WARNING

Kestrel

Over-Height Warning That Deploys Anywhere

Kestrel provides real-time warning to over-height vehicles approaching low-clearance structures, reducing bridge strikes and infrastructure damage. A compact LiDAR sensor measures vehicle height in real time, resolves lane and direction of travel, and triggers warning signs or beacons before an over-height vehicle reaches a low-clearance structure. Available as either a fixed installation or a fully self-contained portable trailer with optional solar power, Kestrel enables agencies to rapidly protect bridges, tunnels, work zones, detours, and temporary clearance restrictions without permanent infrastructure.

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LIDAR SENSOR

Real-Time

HEIGHT
DETECTION

Solar

POWER OPTION

\$

PRICE TIER

KEY CAPABILITIES

Real-Time Height Detection

Identifies vehicles exceeding posted clearance limits at roadway speed.

Warning Activation

Directly triggers warning signs and beacons to alert drivers before impact.

Lane & Direction

Lane identification and direction-of-travel tracking with every detection.

Wrong-Way Detection

The same sensor platform detects and warns against wrong-way movements.

Portable & Solar Ready

Fully self-contained trailer-mounted platform with optional solar power, communications, and warning device integration. Ideal for temporary locations, pilot deployments, emergency response, and work zones.

Edge Processing

Self-contained roadside analytics with basic event logging and optional cloud access.

IDEAL APPLICATIONS

Bridge Strike Prevention

Protecting bridges, tunnels & low-clearance structures

Portable Warning

Work zones & temporary clearance restrictions

Wrong-Way Detection

Ramp & divided-highway monitoring

INFRASTRUCTURE PROTECTION

Built to stop the strike before it happens.

Bridge strike prevention · tunnel protection · temporary clearance protection · construction zone protection. Kestrel supports activation of flashing beacons, DMS messages, gate arms, and other warning devices through configurable digital outputs. Kestrel supports both permanent and temporary infrastructure protection strategies, allowing agencies to deploy over-height warning capabilities wherever risks emerge — without waiting for permanent construction or utility installation.

RAPID-DEPLOY OVER-HEIGHT PROTECTION

Portable Trailer Platform

Fully Self-Contained. Solar Powered. On Site in Hours.



Trailer-mounted Kestrel deployment. Solar array and telescoping mast in operating position on the shoulder — detection and driver warning the day the trailer arrives, with no trenching, permanent power, or fixed infrastructure.

Kestrel is available as a fully integrated trailer-mounted solution designed for rapid deployment at temporary or evolving locations. The platform includes LiDAR-based over-height detection, warning sign integration, communications, and optional solar power. The trailer can be deployed within hours and relocated between sites, making it ideal for bridge strike mitigation, work zones, detours, temporary clearance restrictions, pilot projects, and emergency response deployments.

IDEAL USES

- ▶ Bridge strike mitigation
- ▶ Construction zones
- ▶ Temporary detours
- ▶ Seasonal restrictions
- ▶ Pilot projects
- ▶ Emergency response deployments

Deploy protection where and when it is needed.

Kestrel's portable trailer platform allows agencies to address emerging bridge strike risks, construction projects, and temporary roadway conditions without installing permanent infrastructure. The system can be relocated between sites as operational needs change.

WHY THE TRAILER PLATFORM MATTERS

On Site in Hours

Deployed within hours; no permanent infrastructure required

Relocatable

Move protection between sites as needs change

Self-Contained

Sensor, power, communications & warning on one chassis

Solar Powered

Optional off-grid solar for continuous operation

OVER-HEIGHT DETECTION & WARNING

Kestrel Specifications & Capabilities

LIDAR SPECIFICATIONS

Sensor Platform	Solid-State LiDAR
Maximum Observable Range	70 m
Field of View (H×V)	80° × 22°
Angular Resolution (H & V)	0.4°
Range Accuracy	±0.05 m (< 100 m)
Frame Rate	Up to 30 FPS
Number of Returns	2 returns per pixel
Laser Wavelength	940 nm
Laser Safety	Class 1 (eye-safe)
Communication Interface	1000Base-T Ethernet
Operating Voltage	9–20 VDC
Power Consumption	Typical 9.5–10.5 W
Operating Temperature	–20 °C to +65 °C
Environmental Protection	IP65 Rated

Specifications are presented as HyPoint system specifications. Sensor models and hardware configurations are matched to roadway geometry, clearance environment, power availability, and project objectives.

Optional Portable Trailer Platform

- ▶ Integrated Kestrel detection system
- ▶ Warning sign and beacon integration
- ▶ Cellular communications
- ▶ Optional solar power package
- ▶ Remote monitoring and diagnostics
- ▶ Rapid deployment and relocation
- ▶ No permanent infrastructure required

Deployment & Support

The system includes automated calibration capabilities when deployed at a new location, minimizing setup time and reducing field configuration requirements. HyPoint provides remote technical support during deployment and relocation to assist with system verification, calibration, and operational testing.

Open Integration

Open API feeds Kestrel data into state agency systems, ATIS platforms, 511 systems, traveler information systems, and your existing ITS, tolling, permitting, and enforcement platforms.

KESTREL AT A GLANCE

Feature / Capability	Kestrel
Primary Application	Over-Height Detection & Warning
Sensor Configuration	Single LiDAR
Height Detection	Yes
Length / Width Measurement	—
Speed Detection	—
Direction of Travel	Yes
Lane Detection	Yes
Vehicle Classification	—
Wrong-Way Detection & Warning	Yes
Over-Height Warning Integration	Yes
Trigger Warning Signs / Beacons	Yes
Rapid Deployment	Yes
Relocatable Between Sites	Yes
Temporary Site Applications	Yes
Work Zone Applications	Yes
Vehicle Overview Images	—
Web-Based Data Portal	—
Time-Stamped Event Records	Basic event logging
LPR / USDOT Integration	—
Open API Integration	Yes
Real-Time Alerts	Yes
Multi-Lane Support	Yes
Portable Trailer Deployment	Yes
Solar Operation	Optional
Edge Processing	Yes
Cloud / Remote Access	Optional
Power Requirements	Low
Typical Deployment Type	Fixed or portable

LEGEND Yes = standard Optional = module / config — = not available

Let's talk about your roadway.

Application review, site assessment, and system recommendation at no cost — configured for your roadway geometry, speed environment, and operational objectives. Whether you need permanent bridge-strike protection or a portable trailer deployed in hours, we'll match Kestrel to your site.

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