

## Collision Avoidance Sensor for Large Vehicles

### The Challenge

The customer is a collision avoidance system provider for large vehicles such as haul trucks used in surface mining sites. The specific challenge faced here is the integration of cost-effective detection sensors to warn truck drivers when an obstacle is present in the driver's blind spot. The optimal solution would have the capacity to predict a collision based on the vehicle and object trajectories in order to warn only when there is an actual risk of collision. The selected sensor needs to operate day and night in all weather conditions, including rain, fog, and snow and to withstand harsh environments such as mining sites.

### The LeddarTech Solution: Leddar™ Sensor

The Leddar™ Sensor uses a novel, inherently eye-safe technology that performs detection and ranging by time-of-flight measurement using pulses from visible or infrared LEDs.

Product features:

- Wide diffused light beam and multiple segments provide robust and immediate detection of all vehicle types with simultaneous acquisition capabilities.
- Large illumination area and immunity to ambient light optimize detection robustness under all environmental conditions.
- High acquisition rate provides real-time object tracking capabilities.
- Multiple segments enable lateral discrimination.
- Absence of moving parts results in a rugged, reliable solution.
- Best cost/performance ratio among competing detection technologies.

### The Outcome

The customer offers a wide selection of sensor configurations according to the vehicle type. For mining haul trucks, up to six sensors are positioned at strategic locations on the vehicle (Fig. 1). The critical areas ahead of and behind the massive wheels of these vehicles can thus be constantly monitored for the presence of obstacles, which are shown on the driver's monitor screen.

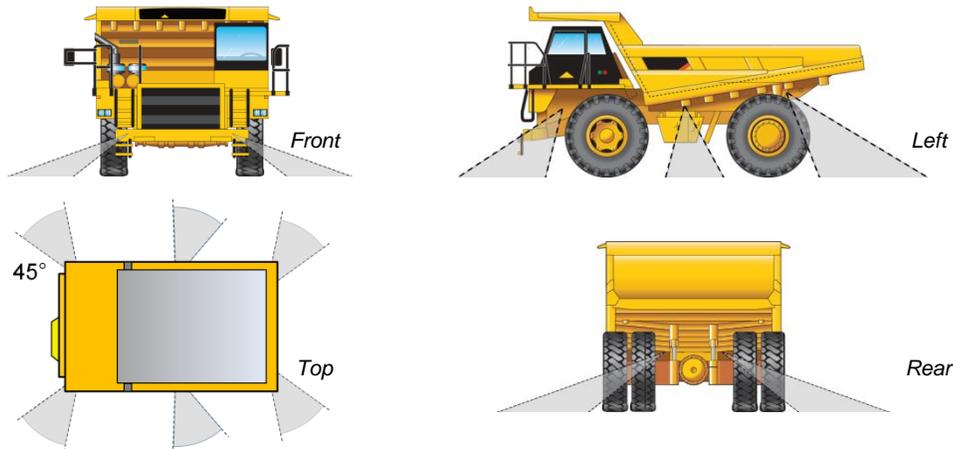


Fig. 1: Six 45° sensors provide quasi-peripheral detection, minimizing the risk of collision with objects or vehicles

### Product References

- Leddar™ Sensor (45° beam)