

Minimising collision risk in  
driverless operations

## ClearTrack™



ClearTrack is a LiDAR-based object detection system designed to seamlessly integrate with AB Dynamics' Automated Driverless Testing solution. Engineered to enhance the safety and efficiency of robot-controlled vehicle operations, ClearTrack is perfect for durability, misuse and mileage accumulation testing.

By continuously scanning the test track environment, ClearTrack detects unexpected obstacles – such as debris and wildlife – and automatically triggers an abort stop providing an extra layer of protection and assistance for operators. This proactive measure helps to maximise uptime, protect valuable test vehicles from damage, and ensure uninterrupted testing.



Detection at speeds of up to 130 km/h



Installation under 15 minutes,  
directly on a vehicle's roof-bar



Abort braking is automatically triggered  
when an obstacle is detected



Motion corrected sensor  
data for accurate detection



Tuned to detect real risks,  
like animals or large debris,  
and ignores harmless obstacles



Built to withstand rough terrain and  
high-vibration conditions making it  
ideal for extreme vehicle testing



Integrates seamlessly with  
new and existing AB Dynamics'  
driverless solutions



User-configurable settings for  
object detection, including filtering,  
sensitivity, and buffer distances



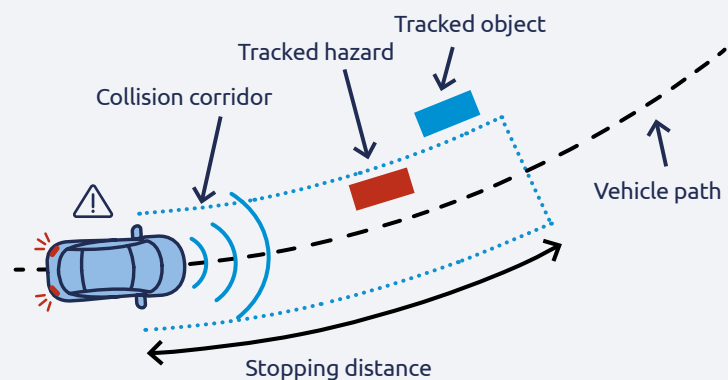
# Specifications

## General

|                                                                                                                                                    |                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating temperature                                                                                                                              | Normal humidity: -40 °C to 85 °C<br>93% relative humidity: Maximum 65 °C                                                                                                        |
| Weather resistance                                                                                                                                 | Body is waterproof to IP67<br>Window is waterproof to IP69K                                                                                                                     |
| Light, weather and particulates<br>/ Direct or indirect natural light<br>/ Artificial light in the visible spectrum<br>/ Rain<br>/ Fog, snow, dust | No significant degradation<br>No significant degradation<br>No significant degradation<br>High densities can interact with LiDAR points causing obscuration and false positives |
| <b>Laser details</b>                                                                                                                               |                                                                                                                                                                                 |
| Wavelength of light                                                                                                                                | 1550 nm (Eye-safe)                                                                                                                                                              |
| Safety class                                                                                                                                       | Class 1 (IEC 60825-1:2014)                                                                                                                                                      |
| <b>Power consumption</b>                                                                                                                           |                                                                                                                                                                                 |
| Perception ECU                                                                                                                                     | 36 W at 24 V (Maximum)                                                                                                                                                          |
| LiDAR                                                                                                                                              | 32.4 W at 24 V (Maximum)                                                                                                                                                        |
| <b>Sensor characteristics</b>                                                                                                                      |                                                                                                                                                                                 |
| LiDAR frame rate                                                                                                                                   | 10 Hz                                                                                                                                                                           |
| Standard resolution area                                                                                                                           | Vertical field of view = 25°, horizontal field of view = 120°<br>Vertical resolution = 0.08°, horizontal resolution = 0.09°                                                     |
| High resolution region of interest (ROI)                                                                                                           | Vertical field of view = 4.8°, horizontal field of view = 40°<br>Vertical resolution = 0.05°, horizontal resolution = 0.05°                                                     |
| Distance precision of LiDAR                                                                                                                        | < 3 cm                                                                                                                                                                          |
| Vibration rating                                                                                                                                   | IEC 60068-2-64                                                                                                                                                                  |
| Shock rating                                                                                                                                       | IEC 60068-2-27                                                                                                                                                                  |

### Smarter collision detection

ClearTrack is unique due to its seamless integration into our robot control system enabling the prediction of a precise "collision corridor". Unlike conventional systems, ClearTrack accurately tracks the vehicle's exact path and is configurable to differentiate between critical threats and harmless objects. This not only protects the vehicle but also significantly reduces unnecessary stops, helping test programmes stay on schedule.



## About AB Dynamics

AB Dynamics is a leading global provider of automotive test and verification solutions that facilitate the development of vehicles that are safer, more efficient and sustainable. As part of the AB Dynamics Group of companies we enable customers to develop and test in virtual environments, validate on the track and then evaluate vehicles on public roads.

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