

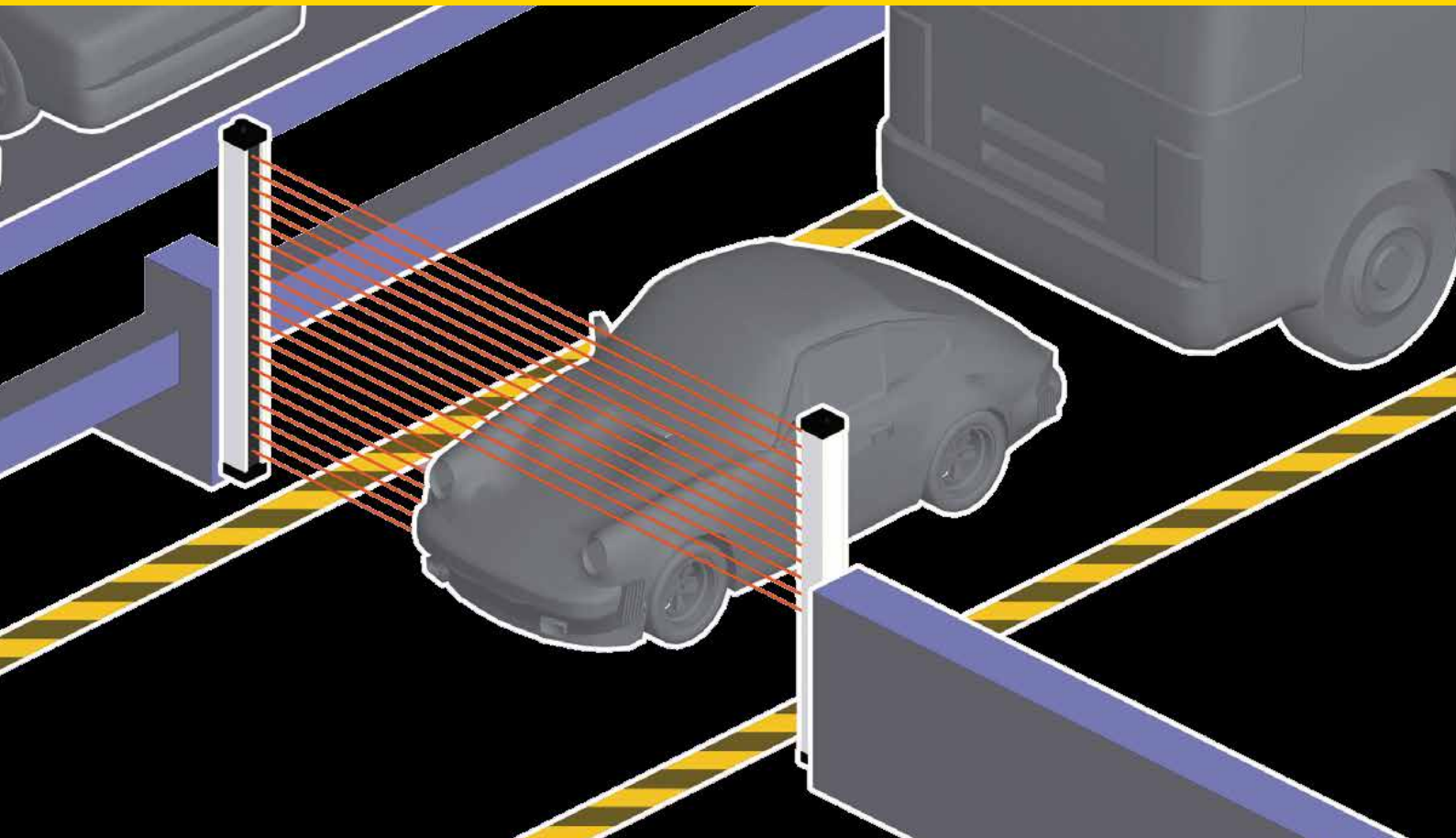


whitepaper

The use of a Micron Measurement Light Curtains in Automatic Car Wash Systems

In order to achieve significant cost savings and reduce environmental impact, modern car wash facilities allow to adjust the quantity of detergent dispensed and to select the most appropriate washing program automatically.

It is not therefore enough to measure the height of the vehicle and consequently adjust the movement of the brushes, but it becomes necessary to recognize dimensional characteristics and shape of the vehicle.



Detection of overall dimensional limits and profile of vehicles

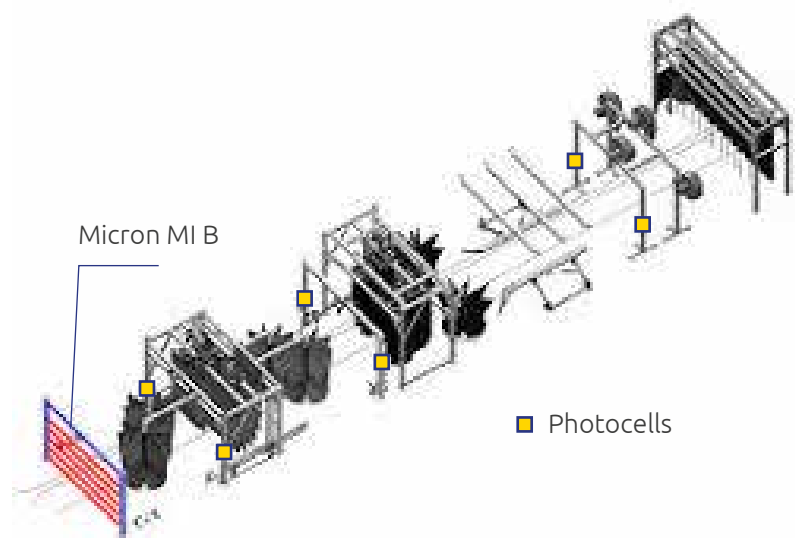
Micron Light curtains are used for industrial and civil applications where it is necessary to detect, measure, and recognise objects. Depending on the number and position of the beams engaged by an object, Micron can provide real time information to a PLC or PC in order to:

- Detect the presence or absence of objects and perform a count
- Detect a position, a shape or a profile
- Measure dimensions

We will see an applications relating to the measurement and detection of motorvehicles: Vehicle shape recognition for automatic car wash systems.

Micron measurement light curtains with RS 485 serial output and 2 programmable digital outputs (Micron MI B models), allow to create a unique vehicle shape recognition system, enabling the machine to recognize even the most unusual situations, i.e. cars with ski box, car with trailers, etc., without the risk of damaging the vehicle.

Furthermore, a washing program not compatible with the vehicle shape, would be automatically blocked. The installation is completed by a series of safety photocells monitoring misalignments and incorrect vehicle positioning.



Automatic vehicle shape recognition system

All Micron models can be manufactured with WTF/WTHF watertight enclosure (IP69K certified). Watertight enclosures allow light curtains to be used in a harsh working environments with exposure to water and steam. Using this version allow to integrate the the barriers directly into the washing system, reducing the space necessary for measuring the vehicle. The H version includes an internal heating system.



Micron WTF/WTHF versions with watertight enclosure

Micron light curtains, placed at the entrance of the car wash tunnel, through the RS 485 serial interface can provide the following information:

- FBO - First beam obstructed
- LBO - Last beam obstructed
- CBO - Central beam obstructed *
- NBO - Number of beams obstructed
- NCBO - Maximum number of consecutive beams obstructed *
- BNO - Beam non obstructed

* If more than one zone is obstructed, the data refer to the zone with the highest number of obstructed beams

Furthermore, a data string including the status of each beam can be provided for more complex analysis.

Product



Beam spacing (mm)	Serial output	Digital outputs
10 - 30	RS 485	2

MICRON B

Models MI B equipped with an RS 485 serial interface with programmable functions and two programmable digital outputs push-pull type.

- Controlled heights: 150 ... 3000 mm. For this application, we recommend heights from 1,5 m
- Programming interface: USB interface on M5 4-pole connector.
- Possibility of connection of up to 3 Micron B light curtains as nodes of an RS 485 serial line for simultaneous detection of multiple dimensions and complex measurements.
- Max. Range 10 m

Micron B - Beam spacing 10 mm

Micron B 10 mm	MI 1501B	MI 1651B	MI 1801B	MI 1951B	MI 2101B	MI 2251B	MI 2401B	MI 2551B	MI 2701B	MI 2851B	MI 3001B
Ordering codes	1250229	1250230	1250231	1250232	1250233	1250234	1250235	1250236	1250237	1250238	1250239
Controlled height (mm)	1490	1640	1790	1940	2090	2240	2390	2540	2690	2840	2990
Num. of beams	150	165	180	195	210	225	240	255	270	285	300
Overall height (mm)	1563	1713	1863	2013	2163	2313	2463	2613	2763	2913	3063

Micron B - Beam spacing 30 mm

Micron B 30 mm	MI 1503B	MI 1653B	MI 1803B	MI 1953B	MI 2103B	MI 2253B	MI 2403B	MI 2553B	MI 2703B	MI 2853B	MI 3003B
Ordering code	1250269	1250270	1250271	1250272	1250273	1250274	1250275	1250276	1250277	1250278	1250279
Controlled height (mm)	1470	1620	1770	1920	2070	2220	2370	2520	2670	2820	2970
Num. of beams	50	55	60	65	70	75	80	85	90	95	100
Overall height (mm)	1563	1713	1863	2013	2163	2313	2463	2613	2763	2913	3063

Note: Analogue output technology, heights lower than 1,5 m and different beam spacings also available, please enquire within.



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Object	Automatic car wash systems

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