

the ibeo LUX sensor family

Available sensor types:

- ibeo LUX
- ibeo LUX HD
- ibeo LUX 8L
- ibeo miniLUX

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ibeo sensors are the perfect basis for sophisticated and reliable automotive applications. They offer all the benefits of scanning LIDAR systems, are multi-application, weather proof and at the same time unbelievably compact.



• ibeo LUX

The ibeo LUX is a real all-rounder for use in urban traffic and on the motorway. From the ACC application to pedestrian protection. ibeo LUX sensors work accurately and reliably even at high speeds, in poor weather conditions and heavy traffic.

ibeo LUX advantages:

- High field of view up to 200 m
- All-weather capability thanks to ibeo multi-echo technology
- Object tracking (embedded data processing)
- Wide horizontal field of view

• ibeo LUX HD

HD – stands for heavy duty. The LUX HD is the perfect ibeo sensor for use in extremely dusty environments. The sensor records up to three reflections per light pulse and scanning layer. This enables reliable environment detection even in heavy rain and the desert.

ibeo LUX HD advantages:

- Extremely robust and reliable
- Embedded object classification and tracking (up to 65 objects)
- Multiple echo detection under all weather conditions

• ibeo LUX 8L

The ibeo LUX 8L was specially developed for off-road use. It provides twice as many vertical scanning layers than the ibeo LUX. This enables the seamless measuring of the surface, the detection of negative objects and therefore outstanding applications for off-road terrain.

ibeo LUX 8L advantages:

- Based on award-winning ibeo LASER technology
- Seamless recording of the vehicle's environment and surface
- 4 additional vertical layers: 6.4 deg field of view, 2 pairs of 4 layers

• ibeo miniLUX

The ibeo miniLUX laser scanner is Ibeo's next solution to make passenger cars safer and more comfortable. Thanks to its small size and low cost miniLUX supports several applications at the rear and the side of a car.

– Prototypes available: End of 2014 –

ibeo miniLUX advantages:

VEHICLE REAR

- Full 3D-Parking support
- Drivers gesture detection
- Backover sensing

VEHICLE SIDE

- Side protection during turning maneuvers
- Blind spot monitoring to support lane changes
- Enabling complex automated parking maneuvers

ibeo LUX Sensor Family – Technical Facts

Feature	ibeo LUX	ibeo LUX HD	ibeo LUX 8L	ibeo miniLUX
Laser				
Laser class	Class 1, eye safe			
Wave length	905 nm			
Application range (10 % remission)	up to 200 m (50 m)	up to 120 m (30 m)	up to 200 m (50 m)	up to 40 m (15 m)
Measurement				
Horizontal field of view	110 deg (50 deg to -60 deg)			180 deg
Vertical field of view	3.2 deg		6.4 deg (8 layers)	1.8 deg
Multi layer	4	8 (2 pairs of 4 layers)		1 layer
Multi echo	Up to 3 distance measurements per laser pulse			
Data update rate	12.5 / 25.0 / 50 Hz	6.25 / 12.5 / 25 Hz		25 Hz
Operating temperature range	- 40 to 85 deg C			
Distance accuracy (raw data, distance independent)	10 cm			
Distance resolution (raw data)	4 cm			
Angular resolution (horizontal)	up to 0.125 deg			1 deg
Angular resolution (vertical)	0.8 deg			n.a.
Robust under heavy dusty environments	no	yes	no	no
Software				
Raw data pre processing (embedded)	all layers			
Real time object tracking (embedded)	available @ 12.5 Hz scan frequency, all layers	available @ 6.25 Hz scan frequency, upper 4 layers only	25 Hz / ECU or Tracking Box required	
Fusion	all kinds			2

Typical applications

ADAS (Pedestrian Protection, PreCrash, Automatic Emergency Braking, ACC with Stop&Go, Traffic Jam Assist, City Assist), Unmanned/ Autonomous driving	Unmanned/ Autonomous driving under heavy dusty environmental conditions	Object recognition & Terrain Mapping/ Ground scanning at the same time	Autonomous driving crash protection for electrical doors Back-over detection 3D Parking support Gesture detection
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