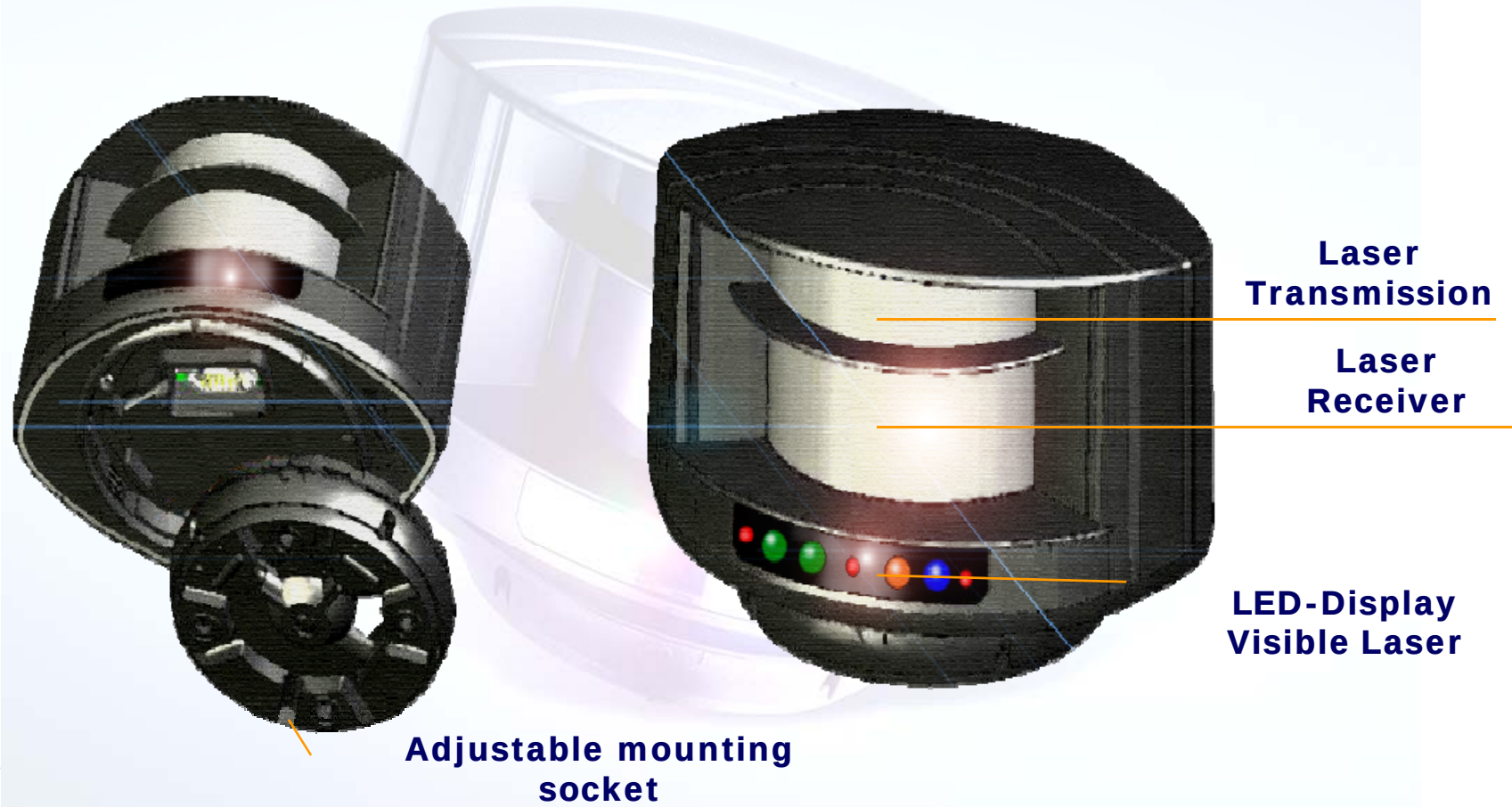


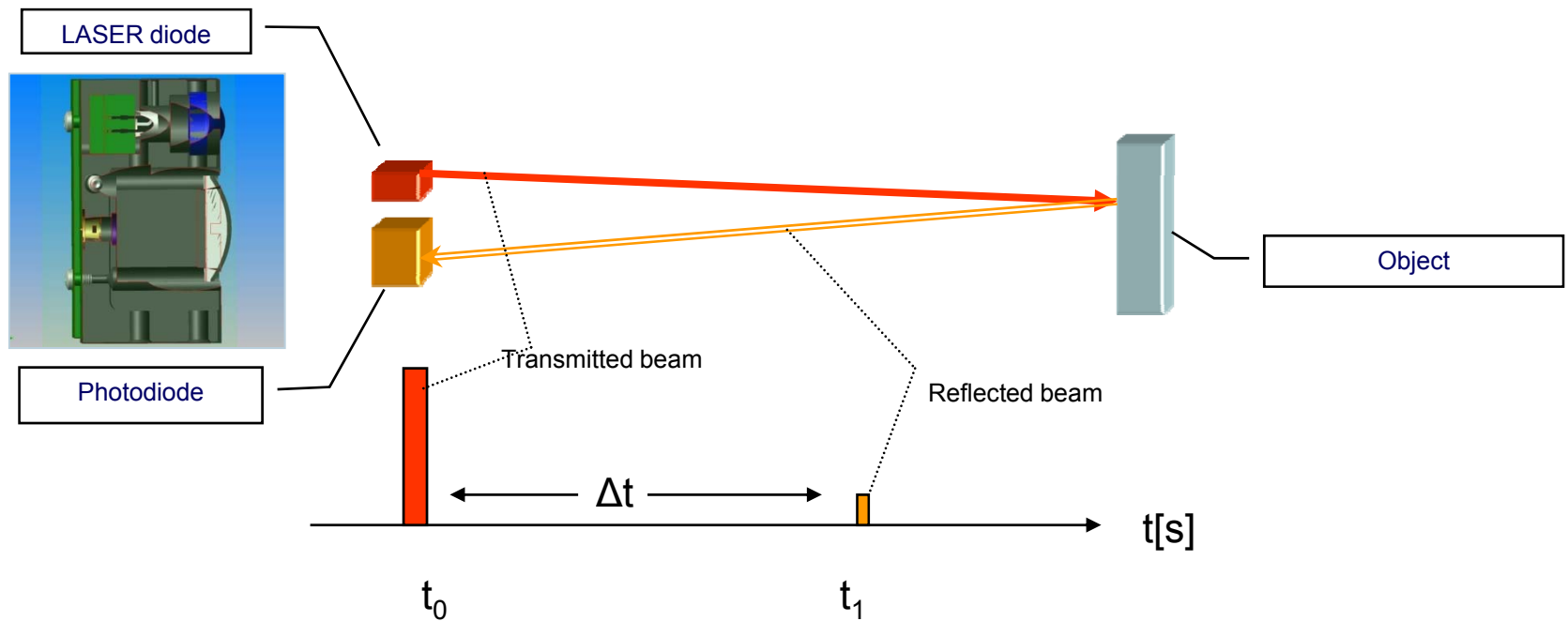


BEA LZR®

Sensor Technology



Time of Flight



Information: Distance

$$d = \frac{\Delta t \cdot c}{2}$$

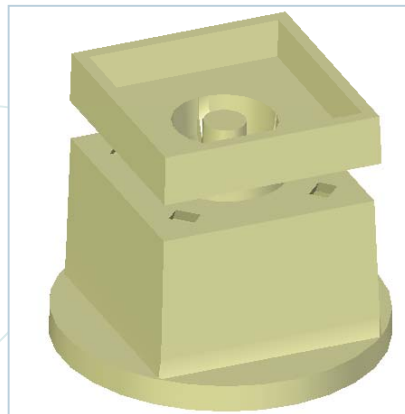
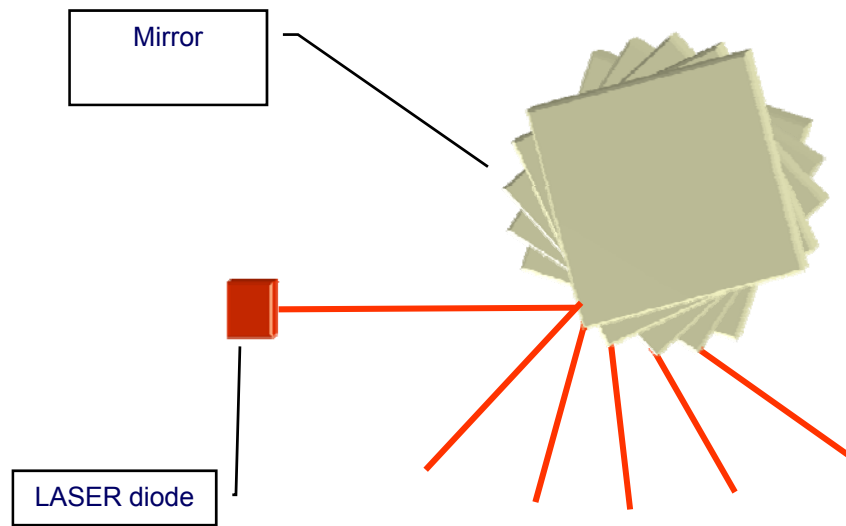
t_0 = Time of emission of light pulse [s]

t_1 = Time of return of light pulse [s]

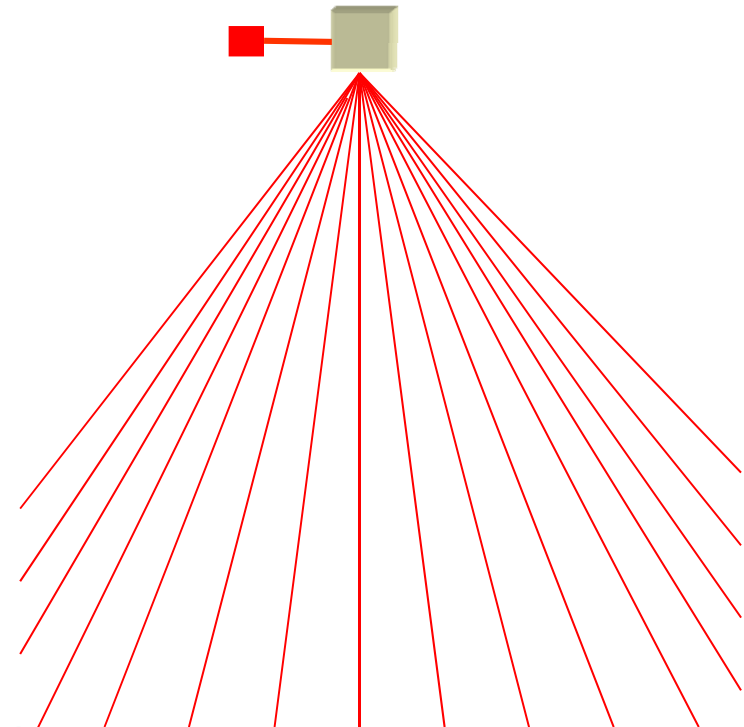
c = Speed of light (299.792.485 m/s)

d = Distance of object [m]

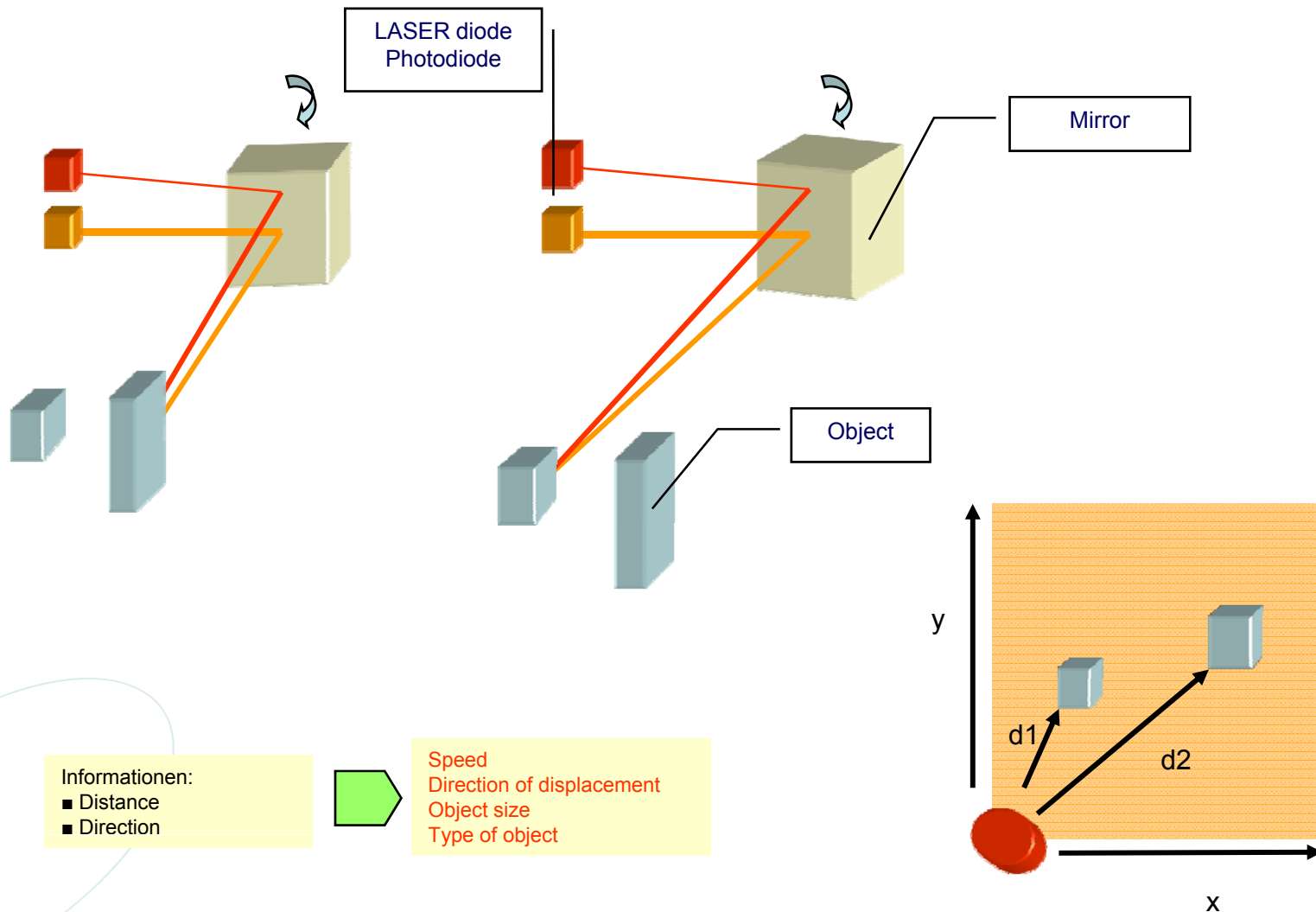
Scanning



Information: Direction



Time of Flight & Scanning

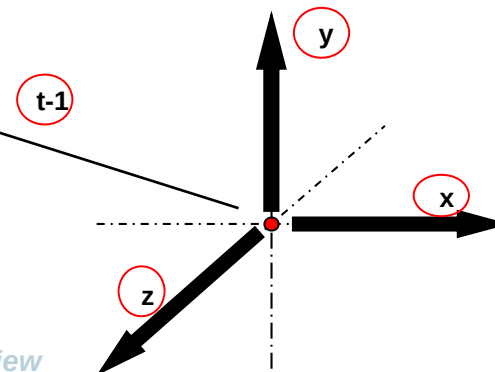
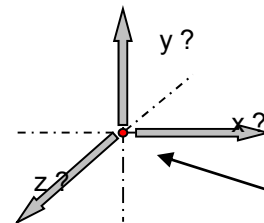
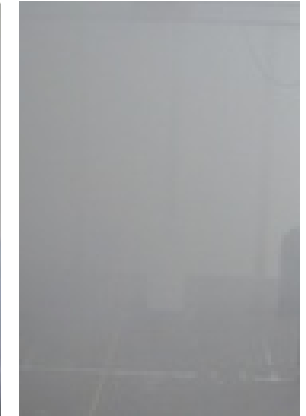


Advantages of this technology

- ✓ Good immunity against disturbances
- ✓ Background suppression
- ✓ Good immunity against reflectance factor of target object
- ✓ Very precise detection fields
- ✓ Adaptive detection fields
- ✓ Inhibition of areas within the detection field possible
- ✓ Multi-curtains with possibility of different functions assigned
- ✓ Multiple detection fields
- ✓ Very simple installation (Plug & play)
- ✓ Teach-In
- ✓ Single point of installation (no separate parts for TX/RX)

Filters against disturbances

**IP65
Software-filter**



4D: x,y,z,t

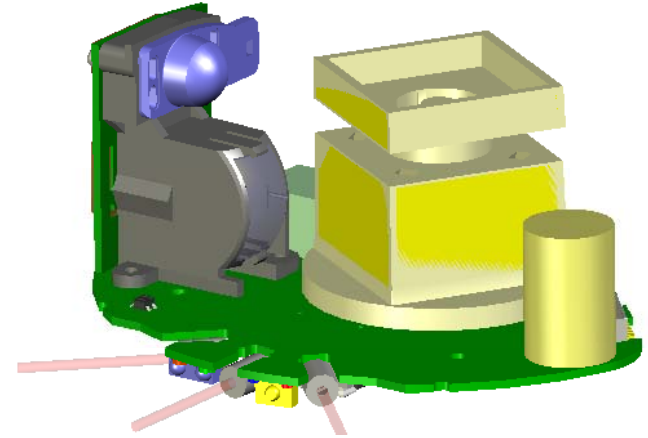
LZR TECHNOLOGY

A HALMA COMPANY

BEA s.a.

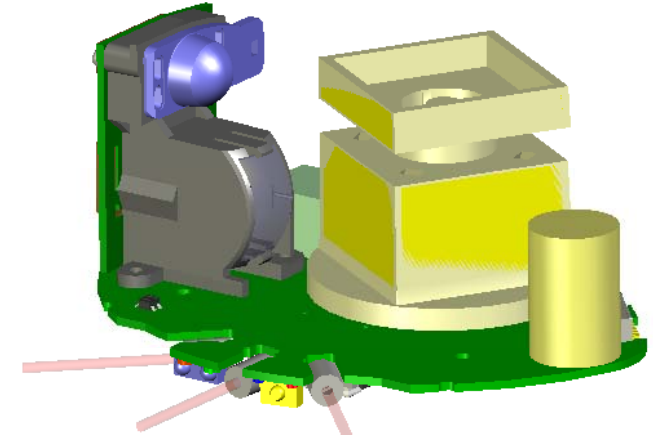
BEA LZR® Technology Overview

Technical Data



Presence detection	∞
Optical Opening angle	95°
Max. Range	LZR-i100: 10 m @ 2% reflectance factor LZR-i110: 5 m @ 2% reflectance factor
Resolution	0,35°
Number of curtains	4
Scan Rate	900rpm
Measurements/s	16377
Reaction Time	Typ.: 80ms Max.: 150ms

Technical Data



OSSD	2 redundant OPTOFET outputs
Inputs	2 potential free OPTOCOUPLER inputs (porgrammable)
BUS communication	CAN RS-485 USB (debug & programming purpose only)
Indicators	Blue LED: Power ON Orange LED: Error Red/Green LED: Status OSSD 1 Red/Green LED: Status OSSD 2
Field programming	BEA Remote Control
Debugging	PC SPY software (USB)
Adjustment aid	3 visible red LASER pointers (ON on demand)
Fixing	Adjustable bracket (5° rotation latitude; 3° tilt latitude)
Connection	14 pin connector

Conformance

EN 954

Safety of machinery **CAT. 2**

EN ISO 13849

Safety of machinery **PL c – CAT. 2**

IEC 61496-3

Safety of Electro-sensitive Protective Equipment **type II**

IEC 61508

Safety of programmable safety-related systems **SIL 2**

EN 60529

Degrees of protection provided by enclosures **IP 65**

EN 60825

Safety of Laser products **Class 1 & 3R**

EN 61000

Electromagnetic Compatibility

Emission: Commercial Level

Immunity: Industrial Level

EN 60068-2-6

Vibrations tests

