



**Reliable**  
***Detecting***  
**in elevators!**

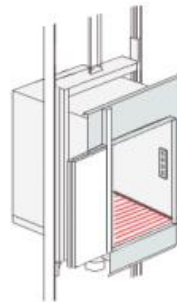
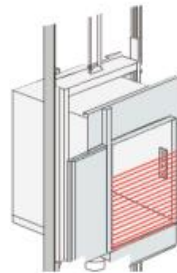


***DUOMETRIC***

### Applications\*

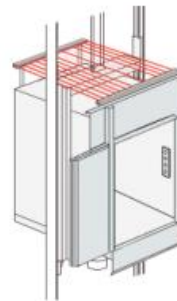
#### ➤ Access area

Monitoring of door clearance is a classical light grid domain. Details of related functions have been extended in the revised elevator standard EN 81-20. Light grids shall now detect smaller objects and signal disruptions (e.g. beam blanking) to the control system. Also the integration of the door monitoring can be integrated into the system test via special functionality.



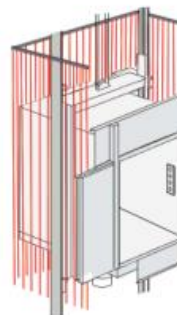
#### ➤ Presence sensing

Specifically in elevators used for access to protected floors the detection of individuals and/or devices within the cabin gains increased importance. Here the flexibility of our light grids in design and functionality is of utmost importance.



#### ➤ Cabin roof and service areas

Due to various aspects in comfort and functionality increasing attention is paid to the monitoring of important parts of the elevator system. Specific beam blanking as well as flexibility in mounting and maintenance benefits elevator manufacturers and installers.



#### ➤ Encasing of elevator shaft

In order to avoid collisions open elevator shafts can be monitored so that no devices can enter the shaft area. Here both the direct monitoring via light grids as well the enhanced effectivity in assisting alternative encasing methods are relevant. For these applications light grids require customized configurations, because the monitored area can span over several floors.

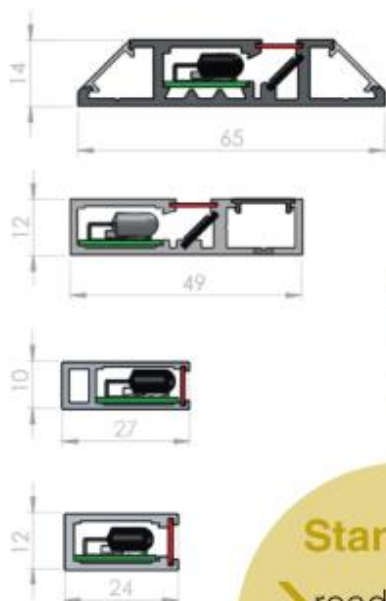
\*The listed applications represent examples only and require verification according to local jurisdiction and applicable standards.

# Detection in elevators: LT40, LA and LVB

## Profile form factors

Our compact profiles will meet your length requirements and are easy to mount.

- flat profile with screw-on chamber
- Profile with cross-holes
- Profile with stud bolts
- End cap with tenon



## Standards

- ready for 2017
- EN 81-20
- EN 81-70

## Connections

- 24 VDC, power supply optional or 230 VAC version
- Switching and warning output
- Push/Pull (PNP/NPN) or relay
- Device functionality switchable via polarity of supplies
- Transmitter passivation

## Beam spacing

Our beam spacings can be combined with each other and the monitoring heights can almost be adjusted to individual beams.

The following spacings are available.



10 mm
12.5 mm
25 mm
28 mm
46 mm
50 mm
56 mm
75 mm
94 mm
100 mm
112 mm

We advise you gladly for your customized solution.



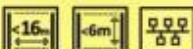
## Controller

Our internal controllers (LA and LT) are integrated into the light grid profile and cover applications up to 160 beams.

External controllers (for example LVB-series) are assembled in plastic enclosures and complement the integrated versions with relay outputs, 24 VDC or 230 VAC inputs. Additionally they handle up to 500 beams and keep the blind area of the light grid profiles very small.

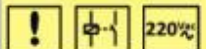
### Specialty Applications

Controller: - (integrated)  
Profiles: LA



### Switching- and Signaling Reliability

Controller: LVB (external)  
Profiles: LI



### Trendsetter

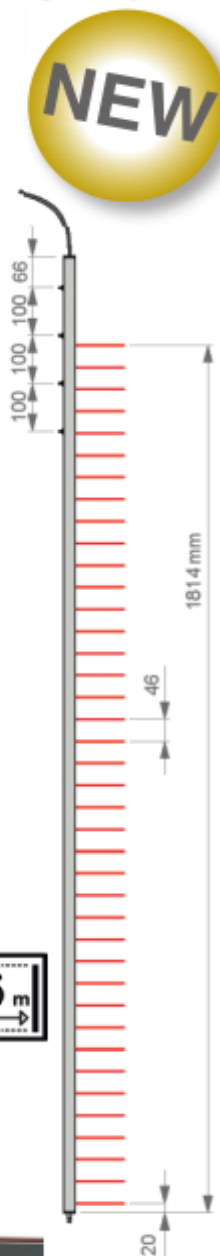
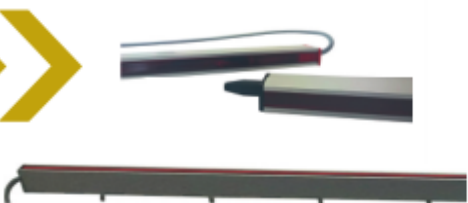
Controller: - (integrated)  
Profiles: LT40



## LT40 - Standards compliant and Plug & Play

Being a newly developed product the LT40 complies with EN 81-20 and EN 81-70 standards requirements. The LT40 is mechanically compatible with its predecessor LT20 and therefore well suited for upgrades/modernizations of existing elevator systems. The LT40 is intended for use as a stationary light grid mounted between cabin and shaft door.

- EN 81-20 and EN 81-70 compliant
- Detection of objects  $\geq 50$  mm
- Extended monitoring range
- High reliability and availability
- Plug&Play-delivery
- Easy startup
- High ambient light resistivity
- Selection of device functionality via pinning
- Optical synchronisation
- Autocalibration
- Automatic beam blanking
- Profile for easy installing



## Range of services

DUOmetric light grids win due to their versatility and simplicity. Compact dimensions, robustness and an optimized price-performance ratio clearly make the stand out. DUOmetric light grids fulfil the highest demands regarding quality and flexibility for efficient and customer-oriented solutions.

## Reliable full-service

In the field of optical sensors, we offer cost effective solutions tailored to your needs. The results are innovative light grid systems that meet even the most demanding customer requirements. And, the DUOmetric team is your reliable and competent partner a light-grid-life long!



# DUOmetric

## DUOmetric AG

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## Detecting light grids with integrated controller



**Reliable**  
***Detecting***  
**Light Grids!**

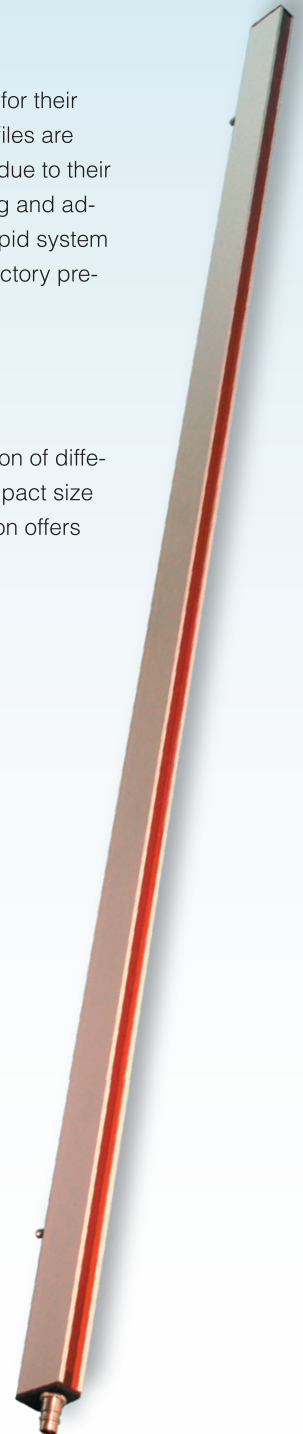
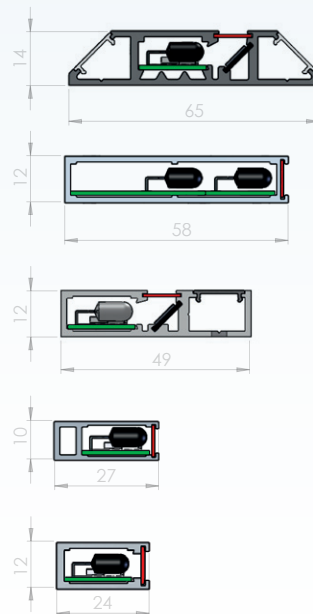
**//DUOmetric**

### Plug & Play

DUOmetric light grids stand out for their unsurpassed simplicity. The profiles are compact, yet robust and sturdy due to their aluminum construction. Mounting and adjustment are quick and easy. Rapid system setup is guaranteed thanks to factory pre-configuration.

### Profile options

DUOmetric offers a large selection of different light grid profiles. Their compact size and robust aluminum construction offers rapid and reliable installation.



5 mm
10 mm
12.5 mm
25 mm
27.94 mm
50 mm
55.88 mm
100 mm
111.76 mm

The DUOnetric light grid program offers a wide range of beam spacings. Together with diagonal beam analysis (configurable) further resolution enhancements are achieved. Monitoring height ranges from 35 mm to 6000 mm.

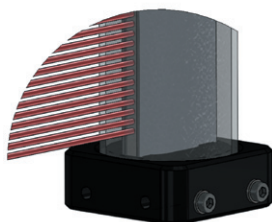
DUOmetric's speciality is an optimized manufacturing process. In addition to the large number of standard versions, we offer light grid lengths customized to your needs:

	EconoLine	Standard	customized
Variations	15	172	500+
Lead time	from stock	< 10 days	> 10 days

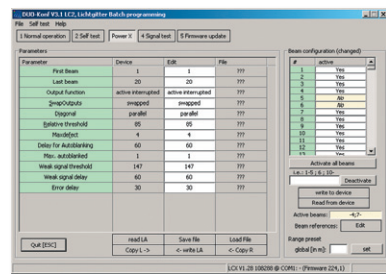
EconoLine products as well as those in standard lengths stand out for their short lead times. We manufacture light grids in special lengths in single unit quantities and small batch series with the lowest prices in the market!

Please consult our sales specialists. We gladly assist you in defining the correct light grid system for your needs!

Light grids offer a variety of system options. Different IP ratings, connector and cable variations, relay outputs, heating options for condensate avoidance or special enclosures are only a few examples for the numerous customization possibilities.



Although the system is pre-configured according to your requirements, all essential functional parameters can be individually modified. Typical modification examples are signal threshold adjustment (e.g. for transparent object detection), beam blanking or just changing from light-to darkswitching. DUOmetric light grids are the only ones in its price segment which allow for monitoring area definition!



The following accessories are available for the use of light grids:

Power Supply (24VDC): 230/110 VDC, with/without output relays, plastic enclosure IP65

Programming Interface: Serial interface with configuration software

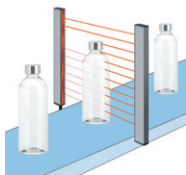
M8-Connection: Connection cables with M8-plug

In order to meet specific requirements DUOmetric also offers switching light grids with external controllers:

- Relay- or Solid-State-Outputs
- Fast cycle times (6  $\mu$ s/beam)
- 230 VAC- or 24 VDC supply voltages

... and many more. Ask us!





## Performance

DUOmetric light grids stand out for their simplicity and versatility. Robustness, compact size and an optimal price-performance ratio, distinguish them from the competition.

## Properties

DUOmetric light grids meet the highest standards of quality and flexibility for cost efficient, customer oriented solutions:

- Low installation cost
- Simple set-up (integration)
- Modular System
- Extensive Functions

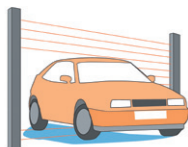
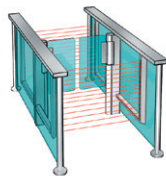
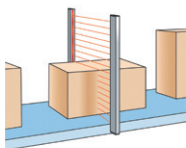
## Advantages

Many industries benefit from the versatile applications of modern detecting light grids from DUOmetric:

- Smooth production processes
- Quality control support
- Transparent material flow
- Optimal storage utilization
- Improved reliability

## Application Examples

- Security systems
- Access control systems
- Passenger transportation
- Surveillance
- Doors and Gates
- Conveyance
- Level monitoring
- Protrusion detection
- Positioning
- 



## Reliable full-service

In the field of optical sensors, we offer cost effective solutions tailored to your needs. The results are innovative light grid systems that meet even the most demanding customer requirements. And, the DUOmetric team is your reliable and competent partner a light grid-life long.

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## Reliable Measuring Light Grids!

**//DUOmetric**



### Performance

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### Properties

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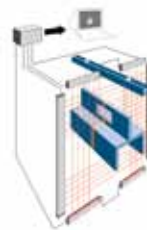
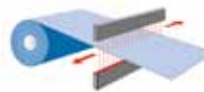
- Modular system
- Extensive functions
- Simple set-up (integration)
- Low installation costs



### Advantages

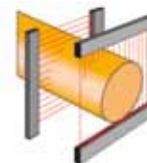
Many industries benefit from the versatile applications of modern measuring light grids from DUOmetric:

- Smooth production processes
- Quality control support
- Transparent material flow
- Optimal storage utilization
- Improved reliability



### Application Examples

- Object detection
- Height control
- Poka Yoke solutions
- Pick-to-Light
- Process Control
- Contour detection
- Warehouse (logistics) optimization
- ...



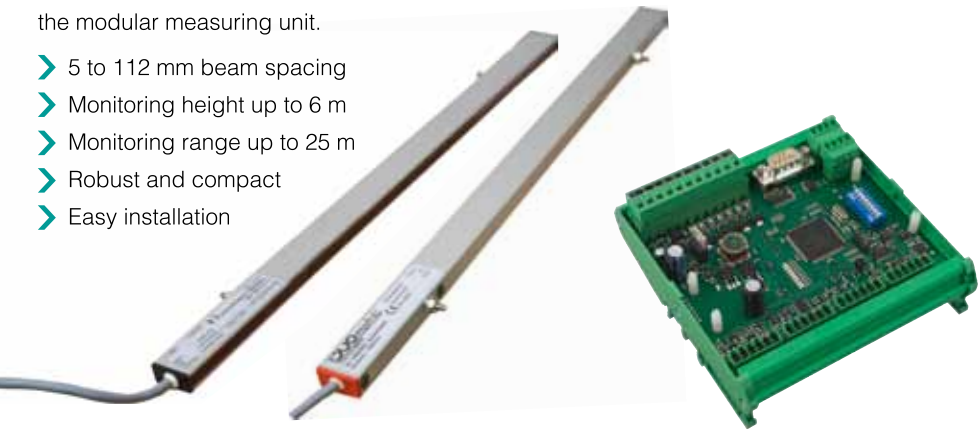


# Light Grid Systems

## Profiles

Transmitter and receiver profiles form the modular measuring unit.

- 5 to 112 mm beam spacing
- Monitoring height up to 6 m
- Monitoring range up to 25 m
- Robust and compact
- Easy installation



## Controller

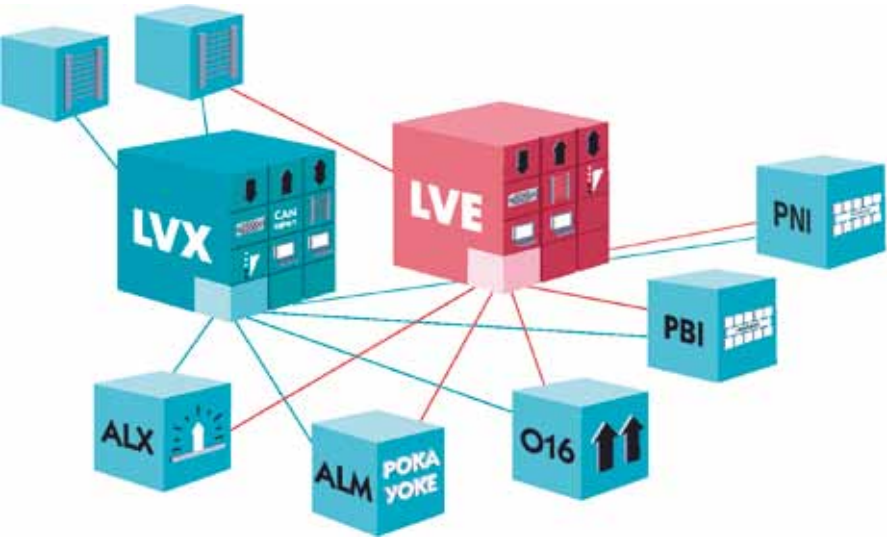
The controller is the interface of the light grid sensor to the data processing system.

- Fast data processing (minimum 6 µs / beam)
- More than 1000 logical beams
- Variety of data interfaces
- Customizable configuration

A typical light curtain system: transmitter and receiver profiles with LVX controller

# Data Output and Interfaces

Derived from the individual beam signals, the intelligent controller transmits the measurement results via appropriate data interfaces to your data processing and control system.



Description	LVE	LVX
Outputs	1x	3x
Combined IOs	3x	3x
Inputs	1x	1x
Serial interface	✓	✓
CANopen	-	✓
Number of profiles	1x	2x
Diagnostic LED	✓	✓
Configurable	✓	✓
Beam Diagnostics	✓	✓

Extension boards		
O16 (16 outputs)	✓	✓
ALM (6 LED strips)	✓	✓
ALX (2 voltages)	✓	✓
PBI (Profibus)	✓	✓
PNI (Profinet)	✓	✓

Subject to change without notice.  
We are not responsible for technical errors.



## Beam Spacing:

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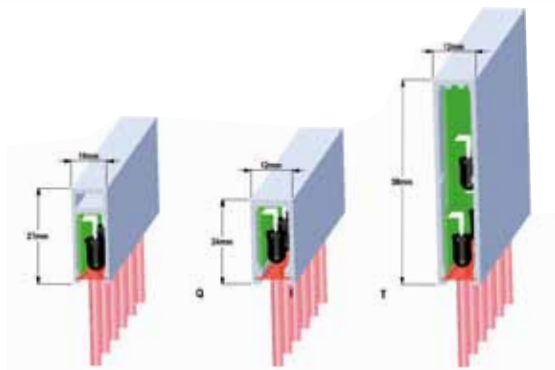


## Variation of beam spacing

The DUOmetric light grid program offers a wide range of beam spacings. In a particular operational mode resolution down to 1 mm is achieved. Monitoring height ranges from 35 mm to 6000 mm.

## Profile options

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