

## Product Brochure

### Innovative complete solutions

Hardware and software solutions for retailers, shopping centers, cities, highly sensitive surveillance areas, etc.



# INNOVATION TEAMWORK SOLUTIONS



## ABOUT US

LASE PeCo Systemtechnik GmbH, founded 1990 as a subsidiary of LASE Industrielle Lasertechnik GmbH, became independent at the beginning of 2008 and is specialised in the use of laser measurement technology in the area of passenger frequency acquisition and in highly sensitive monitoring area of e.g. facades, access roads, open spaces and roofs. For more than 25 years, LASE itself has also been involved in people counting using high-precision technology in addition to the use of laser measurement technology in industrial environments. LASE PeCo offers components and system solutions. The applications range from short-term measurements at events to complex and permanent installations in a wide variety of industries.

## ABOUT COUNTING

Frequencies are an important factor for the success of e.g. chain stores, shopping streets, pedestrian zones and shopping centres. **LASE PeCo** uses laser sensors - usually under most difficult operating conditions. Particularly cities use this technology to ascertain their pedestrian frequencies. Only laser sensors can ensure the quality of the counting process at highly frequented and wide measuring points, even outdoors. **LASE PeCo** has a team of experienced engineers and technicians who support their customers competently from the planning to the operation of the measuring systems and also beyond in the context of data evaluation via analysis systems and trainings.

## APPLICATION AREAS COUNTING

- Airports
- Shopping centres
- Towns, Retailers
- Theme Parks
- Events
- Exhibition halls
- Banks
- Museums

## OUR SERVICE

Excellent project consulting

Assembly and processing

After-Sales-Service

## ABOUT SECURITY

The possibilities of comprehensive security applications for object protection are more diverse and complex than ever today. From walls, fences and intelligent detection techniques to state-of-the-art surveillance systems, you have a number of options to protect and secure your indoor and/or outdoor areas. As required we also combine the robustness and precision of laser scanner technology with the image processing of camera technology. This enables us to protect open spaces and buildings against unauthorised entry or exit. Access and area surveillance is indispensable not only in highly sensitive areas such as nuclear facilities, prisons and forensic clinics, but also on roofs or in inner courtyards of banks, embassies and data centers. We also count logistics companies (buildings/open spaces), nuclear power plants, museums, chemical industries, stadiums and private properties among our customers.

## APPLICATION AREAS SECURITY

- Perimeters / Fences / Walls
- Roofs
- Computing centres
- Open Spaces
- Approaches / Access
- Nuclear facilities
- Storefronts
- Inputs and outputs
- Nuclear power plants
- Correctional facilities
- Forensic clinics
- Embassies

## WHY CHOOSE US?

- Many years of expertise
- Complete solutions from a single source
- Innovative and reliable technologies
- Individual concepts for every industry



Laser-based people counting

# PEOPLECOUNTER

Laser scanner



## ABOUT PeCo LC 2.0



The **PeCo LC 2.0** registers the movement of persons in all conceivable entry, exit and transit areas of real estate and pedestrian zones without restricting the movement of persons to be detected by channelling. Special laser detectors register the movement direction of all persons in the detection area and determine the number of incoming and outgoing persons. The counting information is sent out via digital switching outputs. An Ethernet connection is also possible, which means that information can be transmitted quickly even over long distances within buildings. Furthermore, the pulse output can be transmitted directly to the LASE PeCo Server via router.

## FEATURES PeCo LC 2.0

- ✓ Outdoor applicable, insensitive to environmental influences
- ✓ High counting accuracy of up to 98 %
- ✓ Mounting height up to 20 m
- ✓ Passage width up to 32 m
- ✓ Classification of children and adults
- ✓ Several measuring lines per device incl. direction recognition
- ✓ High flow rate of approx. 500 persons/min
- ✓ Laser class 1 "eye-safe" (TÜV tested)
- ✓ 4 laser curtains for reliable counting
- ✓ Harmlessness under data protection law (TÜV tested)

## APPLICATION AREAS PeCo LC 2.0

- Airports
- Towns
- Events
- Banks
- Retailers
- Shopping centre
- Theme Parks
- Exhibition halls
- Museums

## TECHNICAL DETAILS PeCo LC low 2.0/LC high 2.0



**PECO LC LOW 2.0**



**PECO LC HIGH 2.0**

Features		
Field	Outdoor/Indoor	Outdoor/Indoor
Installation height	4 m ... 8 m	8 m ... 20 m
Detection width	0 m ... 14 m	0 m ... 32 m
Counting accuracy	up to 98 %	
Laser class	Class 1 [eye-safe]	
Scan and profile measurements		
Scan angles	90°	
Scanning frequency	40 Hz	
Electrical system		
Electrical connection	M12 connectors	
Operating voltage	DC 24V +/- 5 VDC; Power over Ethernet [passive] [24V]	
Power input	7 W [without heating] + 30 W internal heating	
Dimensions [L x W x H]	247 x 121 x 109 mm	
Weight	2.6 kg	
Environmental data		
Operating ambient temperature	- 30°C ... + 50°C	
Storage temperature	- 30°C ... + 80°C	



Camera-based people counting

## PEOPLECOUNTER

3D-Stereoscopic camera



### ABOUT PeCo SC/SCX

The 3D technology ensures reliable results even in difficult counting situations. The **PeCo SC/SCX** registers the movement of persons in most of the entry, exit and transit areas of real estate without restricting the movement of the persons to be detected by channelling. The direction of movement of all persons in the detection area is evaluated and the number of incoming and outgoing persons is determined from this. Detection of object heights (3D technology) eliminates miscounts caused by reflection and reflection on the ground, which significantly improves counting accuracy. In addition, it is possible to differentiate between children and adults. These count results are transferred as individual measurement results. Due to the possibility to store several separate measuring lines in the counting range, if the locations allow it, several counting results can also be displayed with only one stereo camera [e.g. 1st measuring line frequency input shop, 2nd measuring line frequency rise staircase, 3rd measuring line frequency in front of shop access [transverse runner]]. It is also possible to set the **PeCo SC/SCX** to monitor the level within a surface. A prerequisite for both applications is that a stereo camera can cover the areas to be measured due to its installation height and the detection width.



### FEATURES PeCo SC/SCX

- ✓ High counting accuracy of up to 98 %
- ✓ Mounting height up to 20 m
- ✓ Passage width up to 11,55 m
- ✓ Classification of children and adults
- ✓ Multi-sensing possible
- ✓ Tracking of objects possible [heat mapping]
- ✓ Several measuring lines per device incl. direction recognition
- ✓ Harmlessness under data protection law [overhead detection]

### APPLICATION AREAS PeCo SC/SCX

- Airports
- Shoppingcenter
- Retail
- Theme Parks
- Events
- Exhibition halls
- Banks
- Museums
- Towns

### TECHNICAL DETAILS PeCo SC/SCX



PECO SC/HIGH



PECO SCX/HIGH

Hallmarks		
Field	Indoor	
Installation height	2 m ... 6 m	2,5 m ... 20 m
Detection width	max. 8 m	max. 11,55 m
Counting accuracy	up to 98 %	
Shell	Aluminium + plastic, white or aluminium black	
Electrical system		
Operating voltage	PoE 36 ... 57 VDC	
Dimensions [L x W x H]	max. 240 x 140 x 37 mm	max. 380 x 88 x 74 mm
Heaviness	max. 700 g [incl. housing]	max. 750 g [incl. housing]
Environmental data		
Operating ambient temperature	0°C ... + 45°C	
Storage temperature	- 20°C ... + 60°C	- 20°C ... + 70°C

SC/SCX are also available as an outdoor version with a special outdoor housing.



Laser based bicycle counting

## BIKECOUNTER

Laserscanner



### ABOUT BiCo 1.0



The **BiCo 1.0** consists of 3D laser technology and ensures reliable bicycle counting with a counting accuracy of up to 97%. Its reliable 3D technology captures any scenes and objects in the infrastructure area.

Due to the high refresh rate of 50 Hz, faster bikes such as e-bikes can also be recorded without any problems. Thanks to its robust housing, the **BiCo 1.0** can be used in all weathers and is therefore resistant to external environmental influences. The data protection harmlessness rounds off his profile.

### FEATURES BiCo 1.0

- ✓ 3D laser for safe bicycle counting
- ✓ High counting accuracy of up to 97 %
- ✓ Mounting height from 6 - 8 m
- ✓ Detection width up to 2,4 m
- ✓ Direction of movement measurement
- ✓ Laser class 1 [eye-safe]
- ✓ Compact and robust housing
- ✓ Insensitive to environmental influences [sun, rain]
- ✓ Harmlessness under data protection law
- ✓ Including lighting unit

### APPLICATION AREAS BiCo 1.0

- 🚲 Bicycle lanes
- 🚲 Rapid cycle routes
- 🚲 Cycling and hiking trails

### TECHNICAL DETAILS BiCo 1.0



**BICO 1.0**

Hallmarks	
Installation height	6 m ... 8 m
Coverage long ago	5,6 m ... 8,4 m
Detection range across	1,6 m ... 2,4 m
Counting accuracy	up to 97 %
Laser class	Class 1 [eye-safe]
Scan and profile measurements	
Aperture angles	70° x 23°
Scanning frequency	25 Hz / 33 Hz / 50Hz
Electrical system	
Electrical connection	M12 connectors
Operating voltage	9 ... 32 VDC
Power input	Sensor: 4 W, Infrared illumination unit: 45 W
Dimensions [L x W x H]	Sensor: 145 x 85 x 71 mm
Dimensions [L x W x H]	Lighting unit: 143 x 85 x 84 mm
Heaviness	Sensor: 1.0 kg, lighting unit: 1.3 kg
Environmental data	
Operating ambient temperature	- 30°C ... + 70°C

Laser-based traffic counting

## TRAFFICOUNTER

Counting

Classification



### ABOUT PeCo Traffic/Traffic PLUS+

The **PeCo Traffic** is a laser measurement sensor that scans its environment radially on a single plane without contact with light pulses. **PeCo Traffic** measures in two-dimensional radial coordinates. When a emitted laser beam is reflected from a target object, the position of the object is output in the form of distance and angle. **PeCo traffic** cannot see through objects. Scanning takes place in a sector of 190°. Depending on the installation, several tracks can be detected with only one sensor. Optimally, the installation is carried out centrally above a roadway.



### FEATURES PeCo Traffic/Traffic PLUS+

- ✓ 2D laser for safe traffic counting
- ✓ High counting accuracy of up to 97
- ✓ Harmlessness under data protection law
- ✓ Axle counting with lateral scanner
- ✓ Reliable at night / darkness
- ✓ Laser class 1 [eye-safe]
- ✓ Outdoor capability
- ✓ Classification of up to 30 vehicle classes
- ✓ Insensitive to environmental influences [sun, rain]

### APPLICATION AREAS PeCo Traffic/Traffic PLUS+

- ☒ Traffic
- ☒ Transport
- ☒ Toll booths

### TECHNICAL DETAILS PeCo Traffic/PeCo Traffic PLUS+



PECO TRAFFIC



PECO TRAFFIC PLUS+

Hallmarks		
Distance between vehicle height and sensor	at least 1.5 m	
Trigger lines	max. 15 m, recommended 10 m	
Angular resolution	0,1667° ... 1°	0,25° ... 0,5°
Counting accuracy	up to 97 %	
Laser class	Class 1 [eye-safe]	
Scan and profile measurements		
Scan angle	190°	180°
Scanning frequency	25 Hz / 100 Hz	25 Hz / 50 Hz
Electrical system		
Electrical connection	M12 round plug connector / M8 round plug connector	
Operating voltage	24 V +/- 20%	24 V + [22,8 V - 25,2 V]
Power input	22 W + 50 W heating	130 W ... 51 W + 79 W heating
Dimensions [D x W x H]	160 x 155 x 185 mm	355 x 482 x 373 mm
Heaviness	4,4 kg	25 kg
Mounting location	1 scanner: above or to the side of the road	above the road
Environmental data		
Operating ambient temperature	-40°C ... + 60°C	-20°C ... + 50°C
Application / Evaluation unit	Vehicle classification; traffic counting	



Software solution

# CUSTOMER ANALYTICS

Heat-Mapping



## ABOUT PeCo Web-Portal

### Access to your data anytime, anywhere

Frequency measurements are playing an increasingly important role in all areas in which people move. Be it to demonstrate and increase the success of chain stores and shopping centres or to measure and monitor pedestrian frequencies in city centres and at events for security reasons. Our PeCo web portal offers you the possibility to call up your individualized key figures and derive possible measures at any time. A calendar with weather function and our automated and freely configurable report round off the solution.

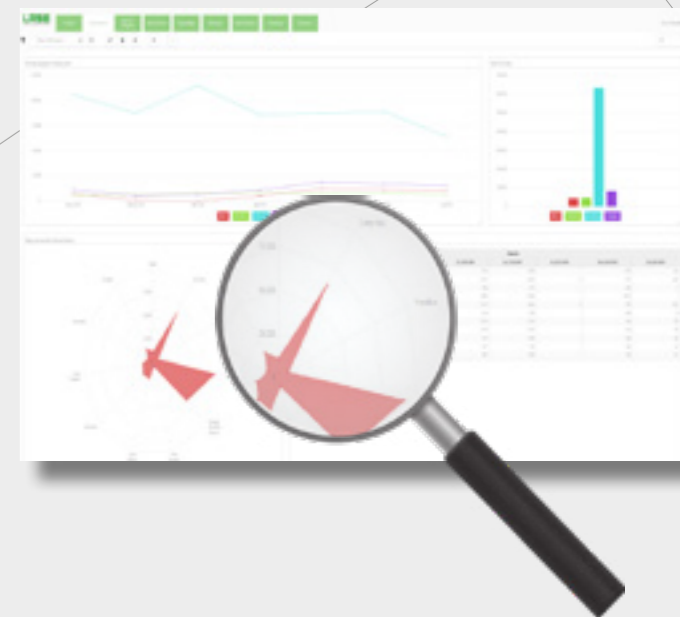
FROM EVERYWHERE

LIVE-VIEWS

ANY TIME

### Success parameters for your optimization!

- Live views
- Graphs & Diagrams
- Weather data
- Dwell time
- Custom Dashboards
- Benchmarking
- Calendar feature
- Filling level
- Automatic report
- Alert per SMS / Mail



Surveillance Systems

## LASER-TRACKING-SYSTEM

LTS

### ABOUT LTS



The **LTS** laser tracking system is a laser scanner-based building protection system that can be used both indoors and outdoors. The laser scanners continuously scan their surroundings. If the laser beams hit objects within the monitored area, their position is detected with centimetre accuracy. A PTZ dome camera, if connected, is aligned exactly to the position, zooms in on the object and tracks it. The continuously enhanced tracking software also reduces false alarm rates [through correspondingly adjustable parameters], enables day/night switching with different monitoring fields and protects against external access [software sealing].

### FEATURES LTS

- ✓ Exact position determination
- ✓ Precise object coordinates
- ✓ Control of tracking
- ✓ Alarm generation
- ✓ Pivotal / tiltable [video dome]
- ✓ Controlled tracking [video dome]
- ✓ Evaluation of monitoring fields
- ✓ Flexible component connection
- ✓ Simultaneous multiple detection
- ✓ Weather resistance [5 echo technology]
- ✓ High-resolution image quality [video dome]
- ✓ Flexible, reliable, expandable [software modular server client]

### APPLICATION AREAS LTS

- 🔒 Perimeter / Fence / Masonry
- 🔒 Open spaces
- 🔒 Storefronts
- 🔒 Correctional facilities
- 🔒 Roofs
- 🔒 Interiors
- 🔒 Inputs and outputs
- 🔒 Forensic clinics
- 🔒 Computing centers
- 🔒 Nuclear facilities
- 🔒 Nuclear power plants
- 🔒 Embassy

### TECHNICAL DETAILS LTS



LTS (LASE 2000D 119)

Hallmarks	
Working range	0 m ... 80 m
Grasp	0 m ... 40 m [10 % diffuse reflection]
Spot size	11,9 mrad
Light	Infrared 905 nm
Laser class	Class 1 [eye-safe]
Scan and profile measurements	
Aperture angles	190°
Scanning frequency	25 Hz / 35 Hz / 50Hz / 75 Hz / 100 Hz
electrical system	
Electrical connection	4 x M12 round plug connector
Operating voltage	DC 24V +/- 20 %
Power input	22 W [without heating] + 55 W heating
Dimensions [L x W x H]	160 x 155 x 185 mm
Heaviness	3.7 kg
Environmental data	
Operating ambient temperature	- 30°C ... + 50°C
Storage temperature	- 30°C ... + 70°C
Insensitivity to extraneous light	70.000 lx

**i** Different scanner types [range up to 120 m at 10 % reflectance, opening angle up to 360°, relay contacts and digital switching outputs] can be used in the portfolio.



Surveillance Systems

**ACCESS CONTROL**

LTS Gate

## ABOUT LTS Gate



Our **LTS Gate** system solution for securing/monitoring access areas via tracks or roads protects against unauthorised access. By means of software parameterised field monitoring within a "virtual fence", intruders can be detected and safely detected in both trafficked and untraveled condition. Likewise, the passing delivery traffic [train/truck] caused by simultaneous evaluation fields no alarm.

## FEATURES LTS Gate

- ✓ Powerful, efficient laser scanners
- ✓ Weather resistance (multi-echo technology)
- ✓ Flexible mounting
- ✓ Synchronization of several sensors possible
- ✓ Multiple inputs/outputs
- ✓ Multiple monitoring fields
- ✓ Compact housing (IP67) incl. heating for outdoor devices

## APPLICATION AREAS LTS Gate

- 🔒 Tracks / Gates / Accesses
- 🔒 Inputs and outputs
- 🔒 Perimeter / Fence / Masonry

## TECHNICAL DETAILS LTS Gate



**LTS GATE (LASE 2000D 125)**

Hallmarks	
Working range	0 m ... 80 m
Grasp	0 m ... 40 m [10 % diffuse reflection]
Spot size	11,9 mrad
Light	Infrared 905 nm
Laser class	Class 1 (eye-safe)
Scan and profile measurements	
Aperture angles	190°
Scanning frequency	25 Hz / 35 Hz / 50Hz / 75 Hz / 100 Hz
Electrical system	
Electrical connection	4 x M12 round plug connector
Operating voltage	DC 24V +/- 20 %
Power input	22 W (without heating) + 55 W heating
Dimensions [L x W x H]	160 x 155 x 185 mm
Heaviness	3.7 kg
Environmental data	
operating ambient temperature	- 30°C ... + 50°C
storage temperature	- 30°C ... + 70°C
Insensitivity to extraneous light	70.000 lx

**i** Different scanner types (range up to 120 m at 10 % reflectance, opening angle up to 360°, relay contacts and digital switching outputs) can be used in the portfolio.



Surveillance Systems

**FOREIGN OBJECT DEBRIS**

LaseALD  
LaseFOD



**ABOUT LaseALD/FOD**



The application **LaseALD** - Airfield Luggage Detection - and **LaseFOD** - Foreign Object Debris Management are laser scanner-based free space inspection systems for the highly accurate and reliable detection of objects on runways of airports, ship bridges and railway tracks. As part of the integration into a barrier and traffic light system, the tarmac of this solution is actively measured in order to ensure obstacle-free operation for passing aircraft, cars and ships. With the help of 3D laser scanners, the operators in the tower can rule out a possible danger from e.g. lost objects or suitcases (Lost Luggage Control). This prevents any damage to the aircraft caused by objects being sucked into the engine/jet turbines. Furthermore, time can be saved because suppliers or [refrigerated] transport vehicles can cross the taxiway without any further detours.

**FEATURES LaseALD/FOD**

- ✓ High-precision 3D laser scanning technology
- ✓ Large-area taxiway monitoring
- ✓ Weatherproof [temperature range: -25°C ... +50°C]
- ✓ Reliable detection even in darkness or bad weather
- ✓ Mast mount with weather protection cover and adjustment function +/-45°
- ✓ Alarm generation on object detection
- ✓ Self-monitoring function via reference marker
- ✓ Use of several laser scanners possible

**APPLICATION AREAS LaseALD/FOD**

- Airports
- Tracks
- Bridges
- Pontoon bridges

**TECHNICAL DETAILS LaseALD/FOD**



Hallmarks		
Distance range for white	2,5 m ... 250 m	0,5 m ... 200 m
Distance range with black	2,5 m ... 80 m	0,5 m ... 30 m
Horizontal divergence	0,5 mrad	2,2 mrad
Divergence vertical	1,32 mrad	10,9 mrad
Laser class	Class 1 (eye-safe)	
Scan and profile measurements		
Scan angle	90°	horizontal: 120° ; vertical: 15°
Swivelling range	up to 90°	
Scanning frequency	20/40 Hz	10 Hz
Angular resolution	0,09° ... 0,18°	
Scanning profile	1	24
Electrical system		
Interface Laser	Ethernet 100 MBit/s - UDP	1000 MBit/s - TCP/IP
Power supply	DC 24V +/- 5V	10-29V
Environmental data		
Operating ambient temperature	- 25°C ... + 50°C	-20°C ... + 60°C





## Contact

LASE PeCo Systemtechnik GmbH  
Rudolf-Diesel-Str. 111  
46485 Wesel  
Tel.: +49 281 95990-0  
Fax: +49 281 95990-111

Learn more about **Counting & Security**:

Website: [www.lase-peco.com](http://www.lase-peco.com)

E-Mail **Counting**: [counting@lase.de](mailto:counting@lase.de)

E-Mail **Security**: [security@lase.de](mailto:security@lase.de)

Contact details:

