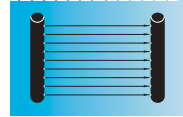





## Detection and measuring light curtain INFRASCAN



- Resolutions  
1,25 mm to 50 mm
- Measuring  
field heights  
75 to 955 mm
- 90 kHz  
Clock frequency
- Integrated analysis

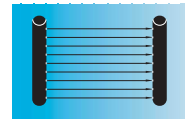


# INFRASCAN summary

Series	Type	Resolution (with double scanning*)	Measuring range (mm)	Measuring distance (m)	Data outputs				
					switching output	RS 422	parallel	SSI	analog
<b>3000</b> 	3016/5	5 mm	75	< 3,5	•	-	•	-	-
	3032/5	(2,5 mm)	155						
	3032/2,5	2,54 mm (1,27 mm)	79	< 1,2					
	3040/2,5		99						
	3064/2,5		160						
<b>4000</b> 	4004/50	50 mm (25 mm)	150	< 4	•	•	-	-	•
	4008/50		350						
	4016/50		750						
<b>5000</b> 	5024/10	10 mm (5 mm)	230	< 4	-	•	Option	Option	Option
	5048/10		470						
	5072/10		710						
	5096/10		950						
	5048/5	5 mm (2,5 mm)	235						
	5096/5		475						
	5144/5		715						
	5192/5		955						
	5096/2,5	2,5 mm (1,25 mm)	237,5						
	5192/2,5		477,5						
	5288/2,5		717,5						
	5384/2,5		957,5						

\* in the center of measuring distance

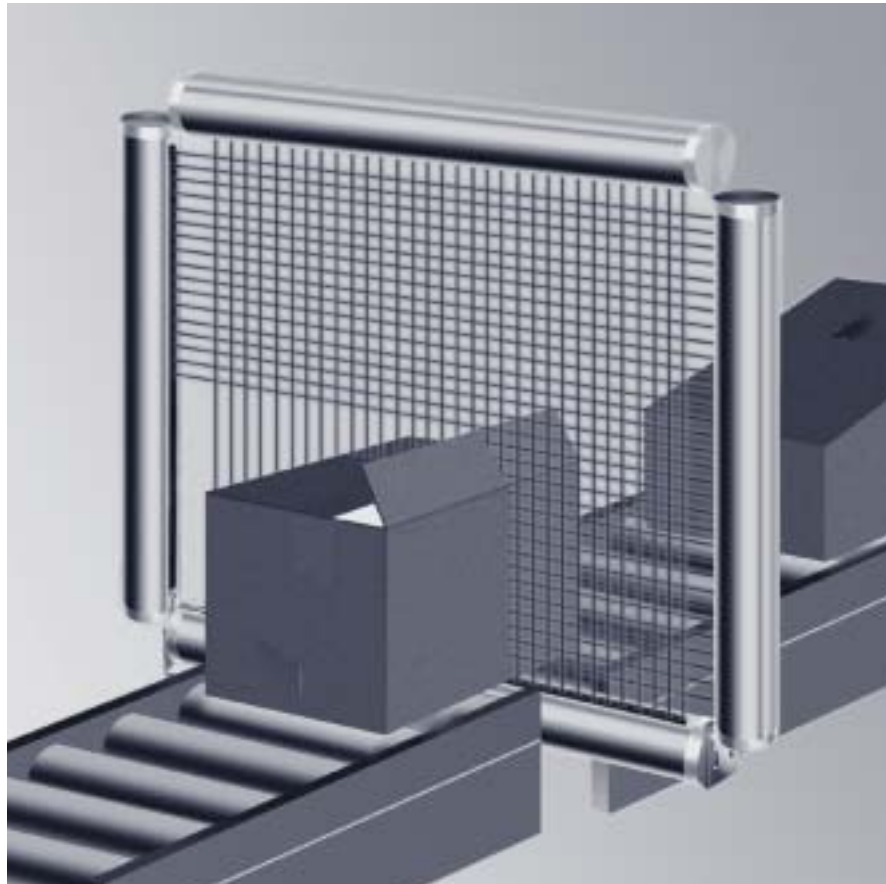
## Design and measuring principle



### Design

The infrared light curtain INFRASCAN are a series of infrared light through beams, mounted in a tower type emitter and receiver housing.

The beam arrays can be used to recognize objects or to make continuous measurements. They have 4 to 288 beams with a resolution of 1,25 mm to 50 mm.



### Principle

The system consists of individual emitters and receivers separately mounted in two towers, placed opposite each other. In addition, a micro controller is housed within the receiving tower, making the unit completely self-contained.

During a measuring cycle, individual emitting diodes are activated in sequence. Simultaneously the corresponding receiving diode is enabled.

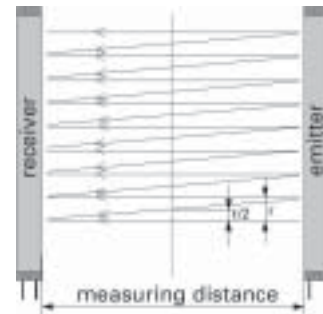
If a light beam is blocked, an output is sent to the controller. The same principle is followed for all subsequent beams, hence a light barrier is created.

During a measuring cycle all interrupted beams are registered. This output is called "DATA". The first interrupted beam is the "POSITION" value and provides this information as part of its output.

# Features and benefits

## Double scanning

For some applications, a higher measuring accuracy or improved capability to detect very small objects may be desirable. For this purpose "double scanning" is available. This method utilizes an additional beam emitted diagonally between the parallel beams.



## High speed

Example: An INFRASCAN 5000 with 96 beams needs less than 1,2 ms for one measurement cycle. An INFRASCAN 4000 with 8 beams needs less than 0,2 ms.

## Reliable measuring principle

Because the beams are parallel, the measurement is accurate regardless of the object's proximity to the transmitting or receiving element.

## No external controls are needed

Because no external control unit is needed, the design is compact, light-weight, and easy to install. This is advantageous for both fixed installations and mobile installations. There are no remote electronics and standard mounting hardware is available.

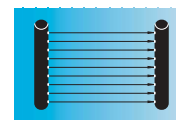
## Mounting

Because only one emitter and its corresponding receiving element are enabled at a time, two adjacent beams will not interfere with each other. This ensures a reliable operation of the light curtain. A built in LED in the receiver is useful for set up and helps to align the light curtain. When in proper alignment, the LED shows green.

## Rugged housing

Transmitters and receivers are mounted in rugged aluminum housings. The design is not only robust but also simple to mount and install.

# Functions



## Smoothing

The "SMOOTHING" function sets a minimum number of interrupted beams, before recognizing an output. An interruption output is only given if the number of directly adjacent interrupted beams is at least equal to the value assigned

for "SMOOTHING". The "SMOOTHING" feature is disabled by factory setup but can be set by the serial interface RS 422 (if available).

## Output formats

### DATA/POSITION "normal"

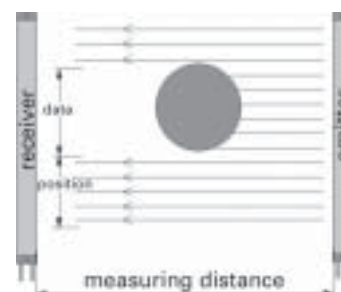
The measurement bar outputs the number of blocked beams as "DATA", and the position of the first blocked beam as "POSITION".

### DATA/POSITION "largest blocked area"

The measurement bar outputs the largest blocked area as "DATA", and the number of the beam at which this area starts as "POSITION".

### DATA/POSITION "over all"

The output is the total number of beams separating the highest and lowest interrupted beams, and includes any uninterrupted beams in between. This value is indicated in the "DATA" output.



All beams from the first to the last interrupted beam are added. Again the first interrupted beam is indicated at the output as "POSITION".

## Interfaces

### Parallel

The number of interrupted beams indicate the height of the object. The output is given in a 10 bit binary format.

For example: A target interrupts 15 of 32 beams of the INFRASCAN. The output binary word is then 0000001111.

### RS 422

The interface allows the connection between INFRASCAN and a controller. It is possible to write configuration data and to read measuring data.

### Switching output

The output switches if a beam (or a number of beams programmed by "SMOOTHING") is interrupted.

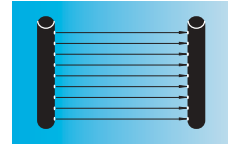
### SSI (synchronous serial interface)

The SSI interface sends data in form of gray-coded information with a clock speed of 100 kHz. The SSI unit also supports ring circuit operation.

## Multi-direction operation

The INFRASCAN 5000 permits multi-direction measurement. To prevent a interference between the systems the INFRASCAN is synchronized.





# INFRASCAN 3000

- High resolution 2,5 / 5 mm
- 55 kHz clock frequency
- Measuring range up to 160 mm

## Types

no. of beams	beam spacing	resolution		measuring field Lm
		E	D 1)	
16	5 mm	5 mm	2,5 mm	75 mm
32	5 mm	5 mm	2,5 mm	78,8 mm
32	2,5 mm	2,5 mm	1,25 mm	155 mm
40	2,5 mm	2,5 mm	1,25 mm	99 mm
64	2,5 mm	2,5 mm	1,25 mm	160 mm

## output format

**N** "normal"

## measuring distance

**Z** with input for automatic calibration

## interface

**T** Push-pull switching output  
**P** parallel 7 Bit binary output

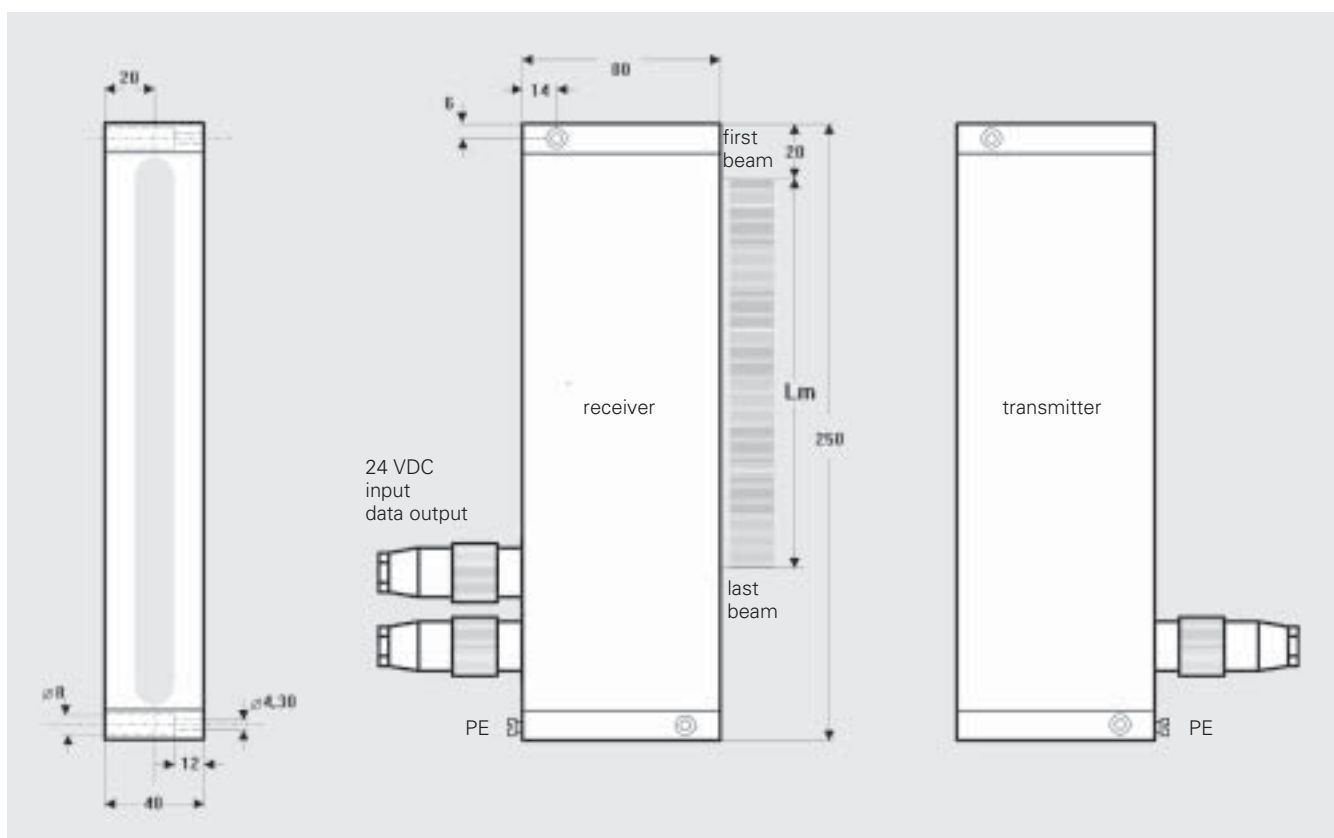
## connectors

included in standard delivery:  
 power/data-connector  
 synchronization cable length 5 m  
 other lengths on request

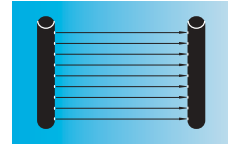
**High  
resolution**

**Clock  
frequency  
55 kHz**

**Measuring  
range up to  
160 mm**







# INFRASCAN 4000

- **Small housing**
- **Large measuring field**
- **90,9 kHz clock frequency**

### Types

no. of beams	beam spacing	resolution		measuring field L <sub>m</sub>	L	L1
		E	D 1)			
4	50 mm	50 mm	25 mm	150 mm	252 mm	52 mm
8	50 mm	50 mm	25 mm	350 mm	450 mm	50 mm
16	50 mm	50 mm	25 mm	750 mm	850 mm	50 mm

<sup>1)</sup> in the center of measuring distance

### output format

- N** "normal"
- O** over all
- L** largest blocked area

### measuring distance

- 0** 0,5...0,9 m
- 1** 0,8...1,4 m
- 2** 1,2...2,0 m
- 3** 1,6...2,4 m
- 4** 1,9...2,8 m
- 5** 2,3...3,2 m
- 6** 2,7...3,6 m
- 7** 3,1...4,0 m

### interface

- T** transistor switching output
- S** serial RS 422

### connectors

included in standard delivery:  
 power/data cable length 3 m  
 synchronization cable length 3 m  
 other lengths on request

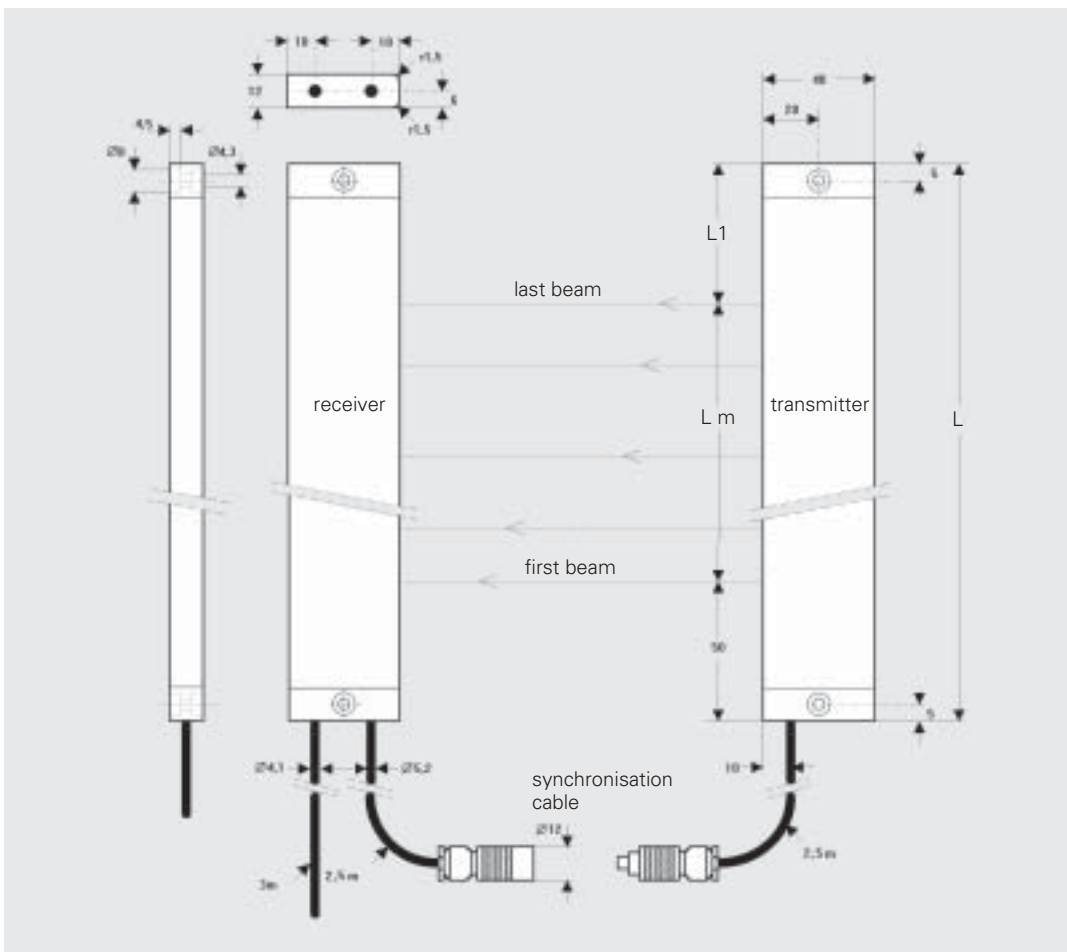
### accessories

analog converter

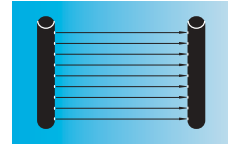
**Small housing**

**Large measuring field**

**Clock frequency 90,9 kHz**







# INFRASCAN 5000

- Measuring field up to 957,5 mm
- Resolution 2,5 / 5 mm
- 90,9 kHz clock frequency

### Types

no. of beams	beam spacing	resolution		measuring field Lm	L	L1	L2
		E	D 1)				
24	10 mm	10 mm	5 mm	230 mm	390 mm	130 mm	30 mm
48	10 mm	10 mm	5 mm	470 mm	630 mm	130 mm	30 mm
72	10 mm	10 mm	5 mm	710 mm	870 mm	130 mm	30 mm
96	10 mm	10 mm	5 mm	950 mm	1110 mm	130 mm	30 mm
48	5 mm	5 mm	2,5 mm	235 mm	390 mm	130 mm	25 mm
96	5 mm	5 mm	2,5 mm	475 mm	630 mm	130 mm	25 mm
144	5 mm	5 mm	2,5 mm	715 mm	870 mm	130 mm	25 mm
192	5 mm	5 mm	2,5 mm	955 mm	1110 mm	130 mm	25 mm
96	2,5 mm	2,5 mm	1,25 mm	237,5 mm	390 mm	128,5 mm	24 mm
192	2,5 mm	2,5 mm	1,25 mm	477,5 mm	630 mm	128,5 mm	24 mm
288	2,5 mm	2,5 mm	1,25 mm	717,5 mm	870 mm	128,5 mm	24 mm
384	2,5 mm	2,5 mm	1,25 mm	957,5 mm	1110 mm	128,5 mm	24 mm

1) in the center of measuring distance

### output format

- N** "normal"
- O** over all
- L** largest blocked area

### interface

- S** serial RS 422
- I** SSI 12 Bit
- P** parallel 10 Bit

### connectors

included in standard delivery:  
power/data cable  
synchronization cable length 5 m  
other lengths on request

### measuring distance

- 0** 0,5...0,9 m
- 1** 0,8...1,4 m
- 2** 1,2...2,0 m
- 3** 1,6...2,4 m
- 4** 1,9...2,8 m
- 5** 2,3...3,2 m
- 6** 2,7...3,6 m
- 7** 3,1...4,0 m

### accessories

converter RS 422 - RS 232  
analog converter

Large  
measuring  
field

Clock  
frequency  
90,9 kHz

