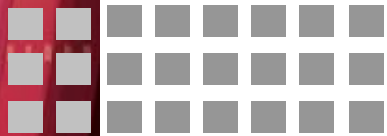




# SE2L Safety Laser Scanner



*Think Automation and beyond...*

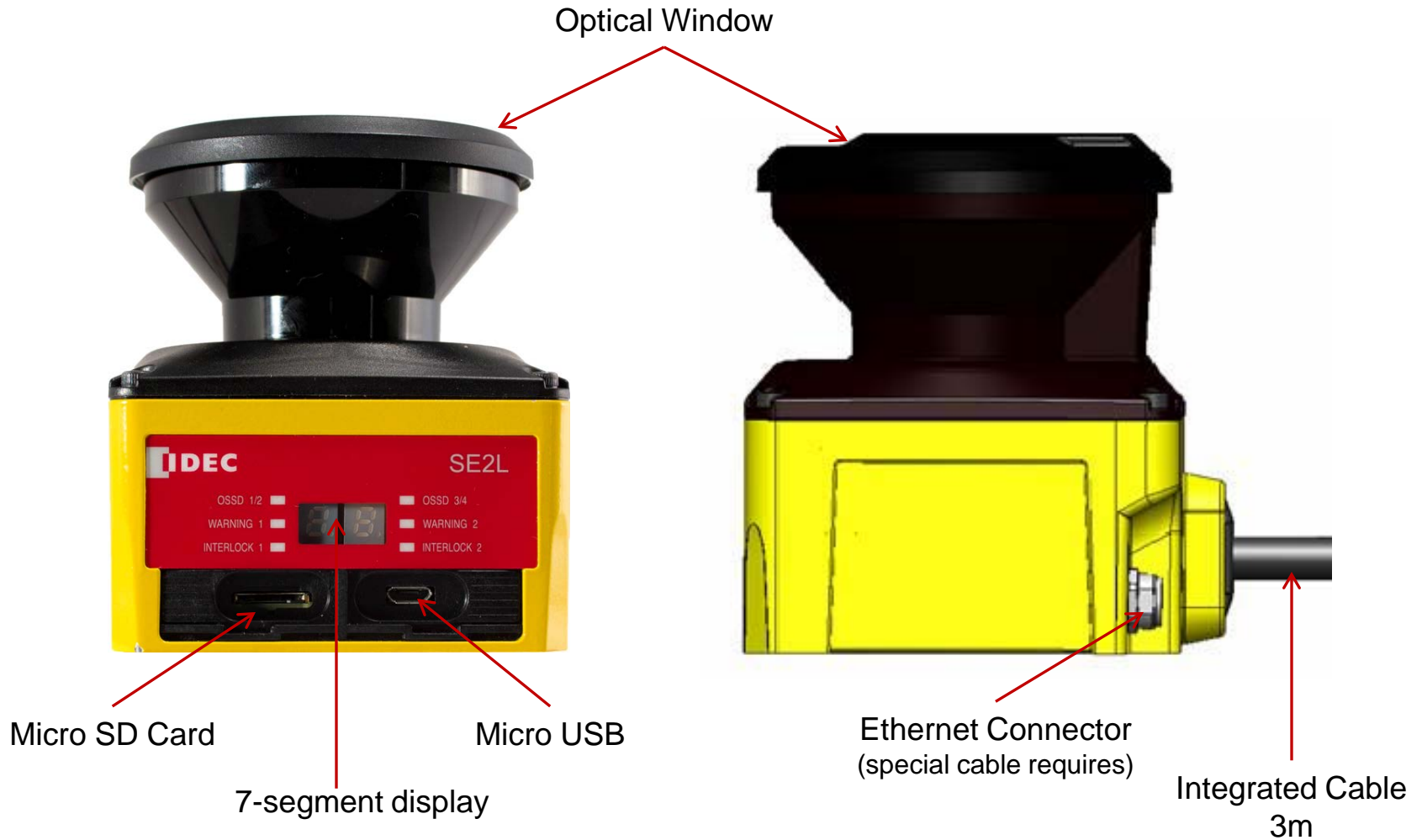


# Introduction

- What is Safety Laser Scanner
  - A laser scanner is a safety device, which uses the reflection of laser beams to detect the presence of objects or people. Laser scanners are mostly used with AGVs and forklifts. However, IDEC new SE2L can cover long distance which makes it ideal for use with a great variety of industrial robots and machinery.



# SE2L Overview

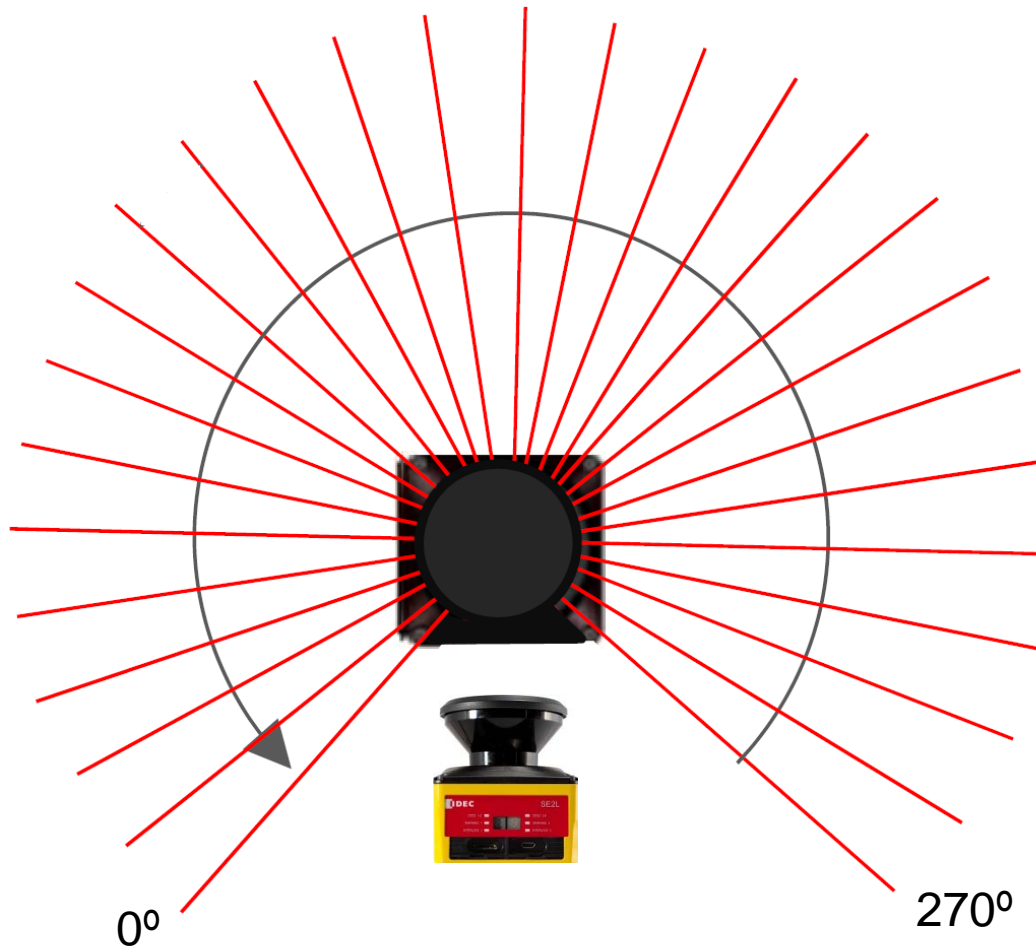


*Think Automation and beyond...*



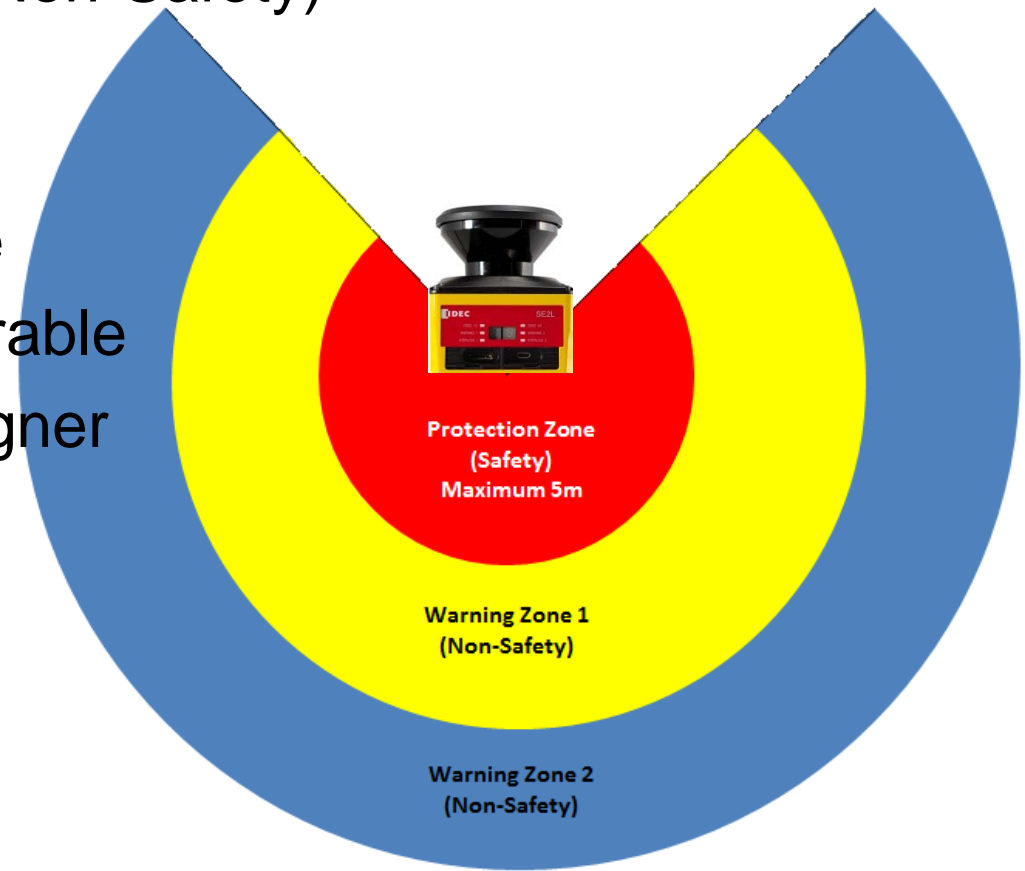
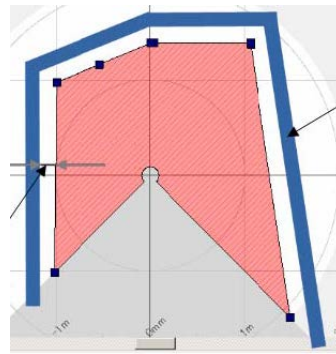
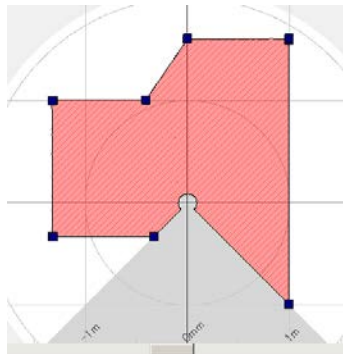
# SE2L Characteristics

- 270° Sensing Angle



# SE2L Characteristics

- 5m Protection Zone (Safety)
- 20m Warning Zone (Non-Safety)
  - Warning Zone 1
  - Warning Zone 2
- Each zone's distance and shape is configurable via SLS Project Designer



# SE2L Characteristics

- Smallest Safety Laser Scanner in the world!



**IDEC SE2L**  
80x95x80mm



**Omron OS32C**  
133x104.5x142.7



**Keyence SZ-Series**  
100x150x104



**Sick S300 Mini**  
Standard/Remote  
102x116x104



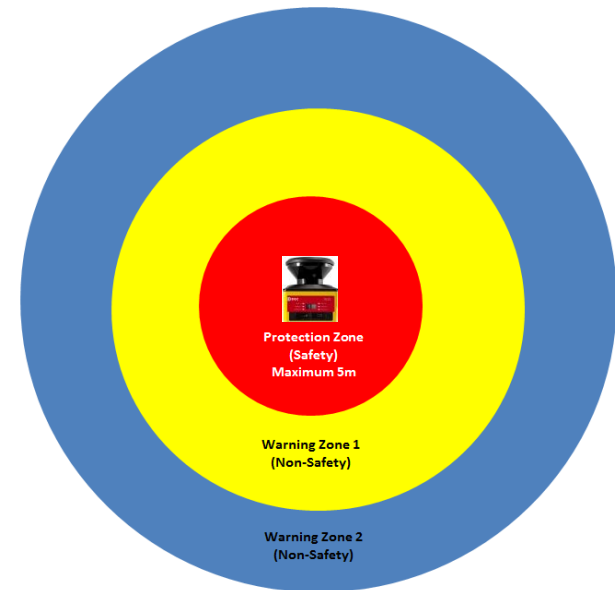
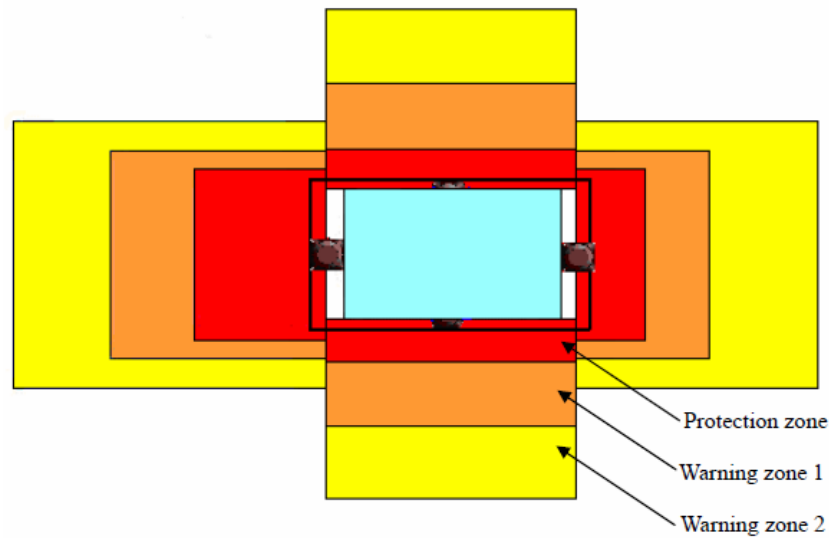
**Sick S300**  
102x152x106



**Sick S3000**  
155x185x160

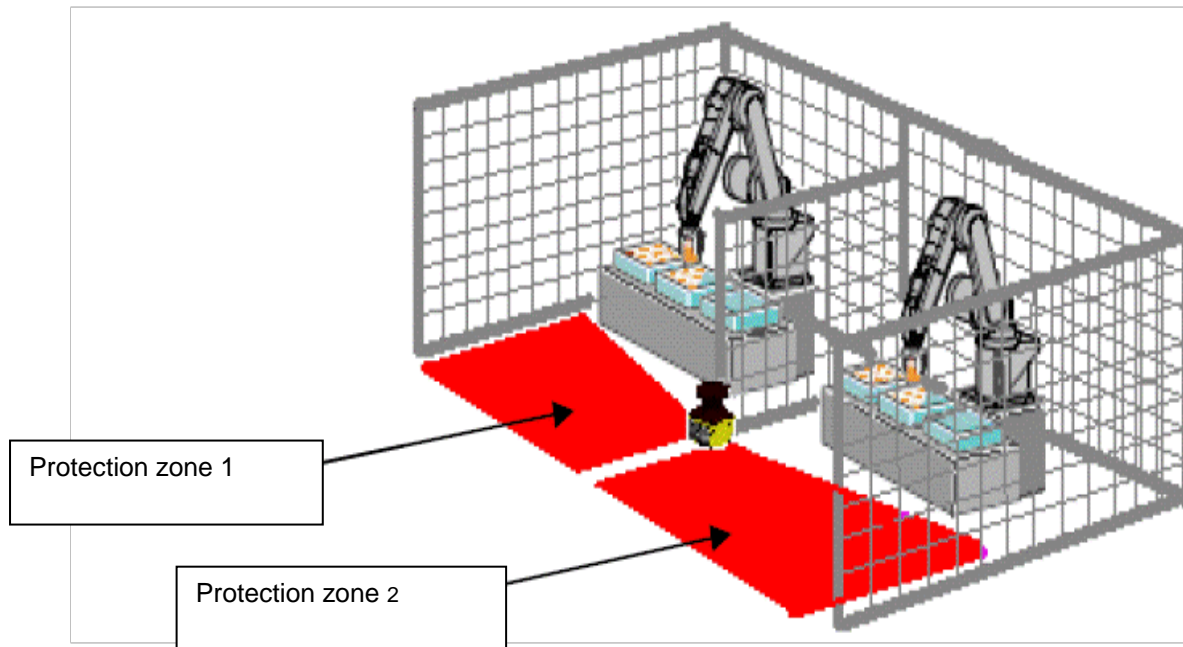
# SE2L Characteristics

- Master and Slave Mode w/o Safety Controller
  - RS 485
- The First Safety Laser Scanner in the world!
- 1 Master and up to 3 Slaves
  - Four sides of AGV can be protected
  - 360° protection with 1 Master & 1 Slave



# SE2L Characteristics

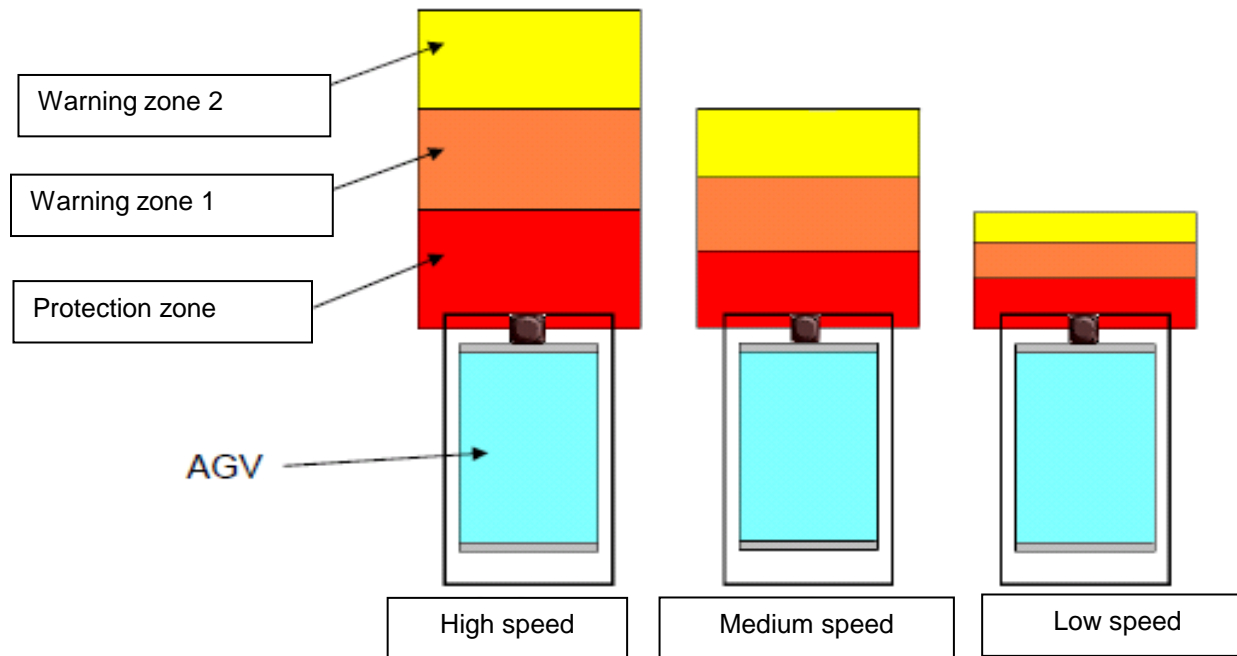
- Dual Protection Zone
  - Use 1 Laser Scanner instead of 2





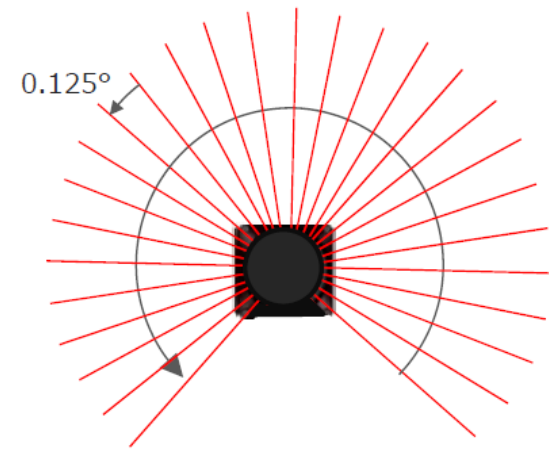
# SE2L Characteristics

- Maximum 32 Patterns
  - Possible to adjust the detection area depending on the vehicle speed and the surrounding equipment using encoder input function
  - Ideal for AGV and forklift

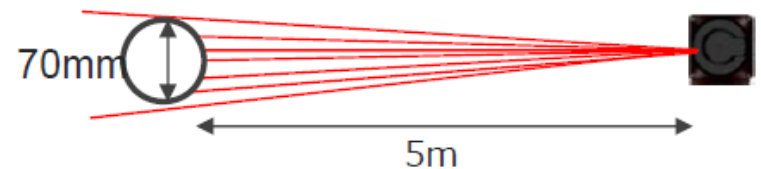
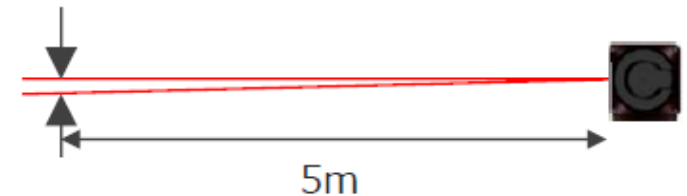


# SE2L Detection Characteristics

- 30ms/rotation
- 1 laser beam per 0.125°
- 2,000 laser beam per rotation (270°)
- 11mm gap between laser beam at 5m
- Minimum detectable size
  - At 1.8m: 30mm (hand protection)
  - At 3m: 50mm
  - At 5m: 70mm (body protection)



About 11mm

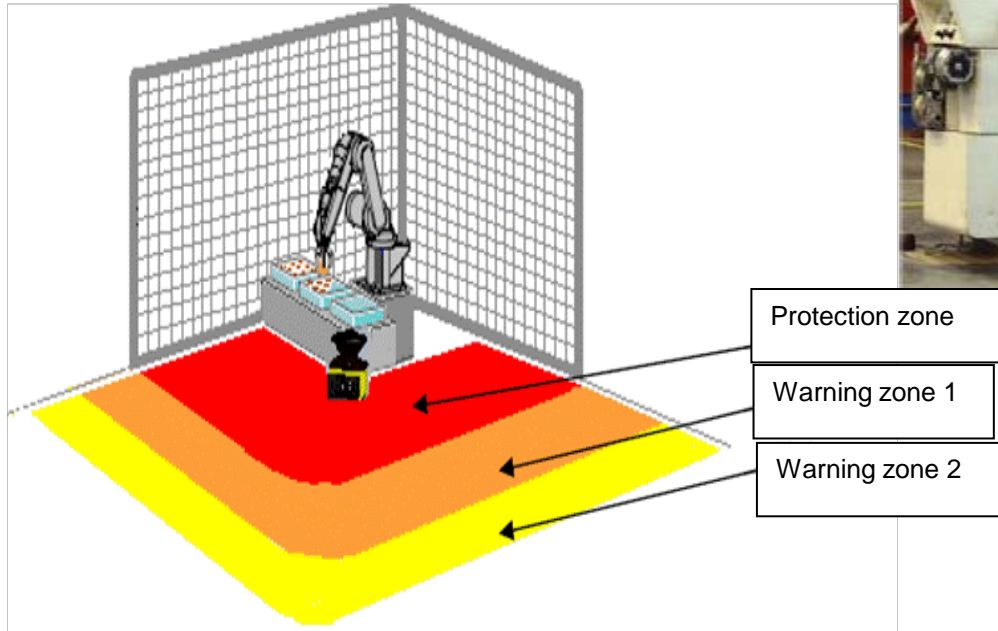


# SE2L Other Characteristics

- Safety Category 3, Performance Level d (PLd), Safety Integrity Level 2 (SIL2)
- IP65, cULus, TUV
- 2xPNP OSSD safety outputs
- 6xPNP Non-safety outputs
- Micro SD
  - Logging
  - Configuration
- Teaching Function
- Muting Function
- EDM Function
- Ethernet Communication
- Distance Measurement

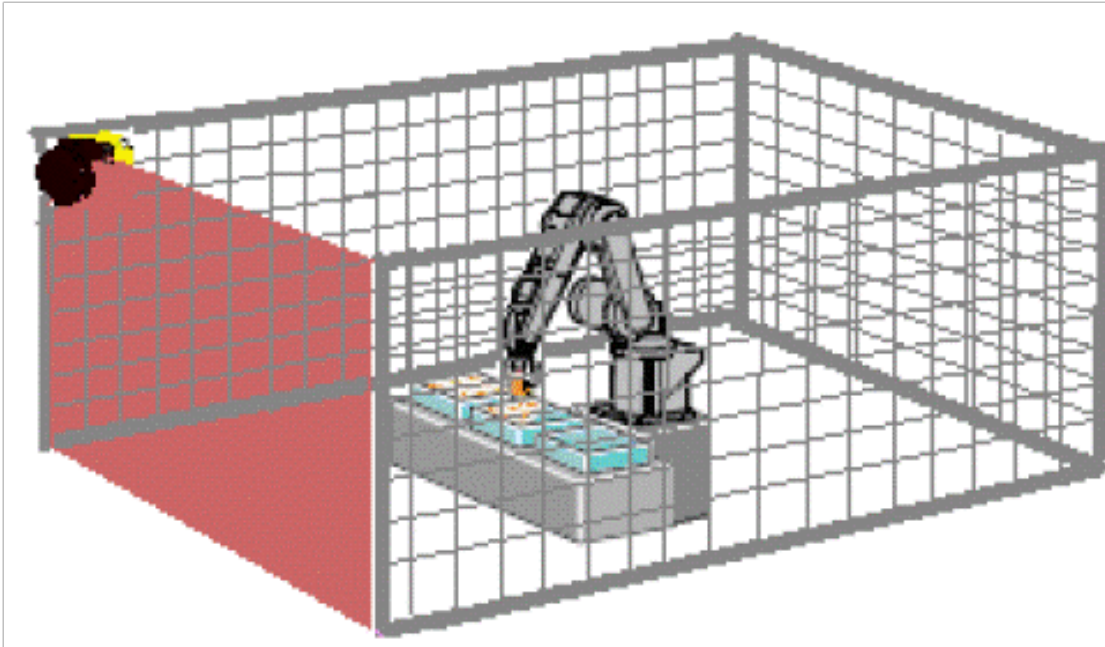
# Applications

- Safeguarding of industrial robot and machinery



# Applications

- Intrusion Detection
  - Can be used to replace light curtains



# Applications

- Collision Avoidance
  - AGV, Forklift



*Think Automation and beyond...*

# Recommended Safety System

- Connect SE2L to FS1A Controller to create optimum safety system
  - Standard Use: Logic 11C
  - Muting Function: Logic 11d
  - Partial Stop: Logic 102
  - If switching mode is necessary: Logic 13b, 13c, and 13d



# Comparison

Basic Spec.	IDEC SE2L	Keyence SZ-01S	Keyence SZ-04M	Keyence SZ-16V	Keyence SZ-16D
Cat3, PLd, SIL2	Yes	Yes			
Sensing Angle	270°	270°			
Protection Zone	<b>5m</b>	4.2m (190°) 2.8m (270°)			
Warning Zone	<b>20m</b>	10m (190°) 7m (270°)			
OSSD Safety Outputs	2 x PNP	<b>2 x PNP/NPN Selectable</b>			
Master/Slave Mode	<b>Yes</b>	No			
No. of Areas	<b>32</b>	16			
List Price	\$2,695	\$4,560	\$5,424	\$5,535	-

*Think Automation and beyond...*





# Comparison

Basic Spec.	IDEC SE2L	SICK S300 Mini Standard	SICK S300 Mini Remote	SICK S300 Standard	SICK S3000 Standard
Cat3, PLd, SIL2	Yes	Yes			
Sensing Angle	270°	270°			190°
Protection Zone	5m	3m			4.7m
Warning Zone	20m	8m			20m
OSSD Safety Outputs	2 x PNP	1 x PNP			
Master/Slave Mode	Yes	No			
No. of Areas	32	1	16	16	32
List Price	\$2,695	\$3,993	\$5,186	\$4,740	\$5,022

*Think Automation and beyond...*










# Comparison

Basic Spec.	IDEC SE2L	Omron OS32C
Cat3, PLd, SIL2	Yes	Yes
Sensing Angle	270°	270°
Protection Zone	<b>5m</b>	3m
Warning Zone	<b>20m</b>	10m
OSSD Safety Outputs	2 x PNP	2 x PNP
Master/Slave Mode	<b>Yes</b>	No
No. of Areas	32	<b>70</b>
List Price	\$2,695	\$3,441

*Think Automation and beyond...*



# Part Number and List Price

Appearance	Part Number	Description	List Price
	SE2L-H05LP	Safety Laser Scanner (software included)	\$2,695
	SE9Z-HS2-XCM11	SE2L Micro USB cable	\$50
	SE9Z-HS2-XCD13	SE2L Ethernet connection cable	\$129
	SE9Z-HS2-XCE010	SE2L 10m extension cable	\$149
	SE9Z-HS2-XCE020	SE2L 20m extension cable	\$299
	SE9Z-HS2-BK01	SE2L Bottom mounting bracket	\$149
	SE9Z-HS2-BK02	SE2L Rear mounting bracket	\$179
	SE9Z-HS2-CM01	SE2L Cover bracket	\$99
	SE9Z-HS2-WD01	SE2L Optical window	\$129

*Think Automation and beyond...*

