



Digitized Automation for a Changing World

# Delta Laser Displacement Sensor LD-E Series



[www.deltaww.com](http://www.deltaww.com)



## Laser Displacement Sensor LD-E

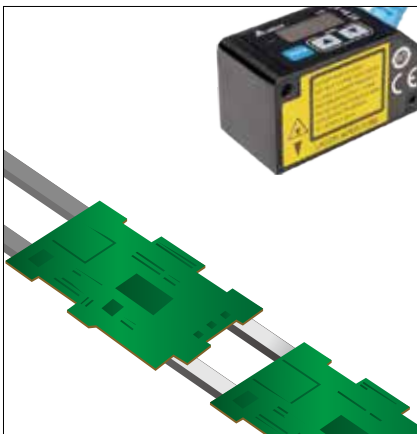
Senses the distance to objects using triangular reflection with a high-resolution CMOS sensor.

Measures the thickness and width of the objects to detect height, gradient, position, flatness, gap, distance, and runout

- 5 models of sensing ranges:  $500 \pm 200$  mm /  $220 \pm 100$  mm /  $100 \pm 35$  mm /  $50 \pm 15$  mm /  $30 \pm 5$  mm
- 7-segment display
- Digital I/O / Analog 4 ~ 20 mA / Modbus RS-485 communication
- Linearity  $\pm 0.1\%$  ~  $\pm 0.3\%$



## Applications



PCB parts presence or absence detection



Overlap detection



Electric parts front back detection



Completion review



O-ring presence or absence review



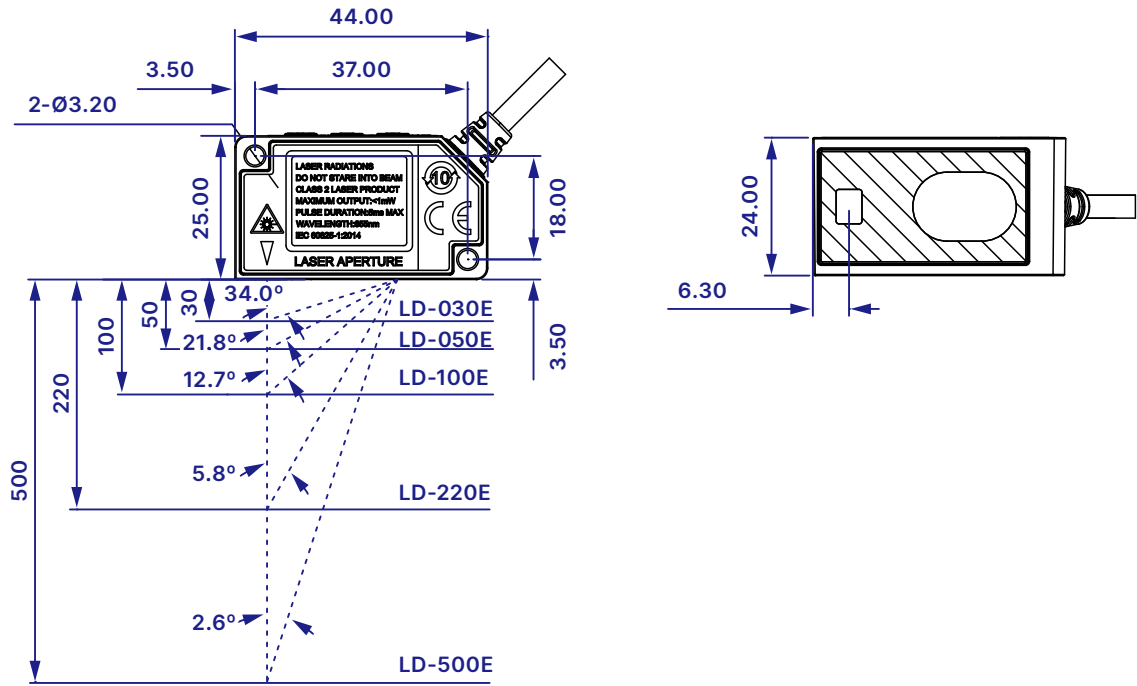
Joint gap detection

# Specifications

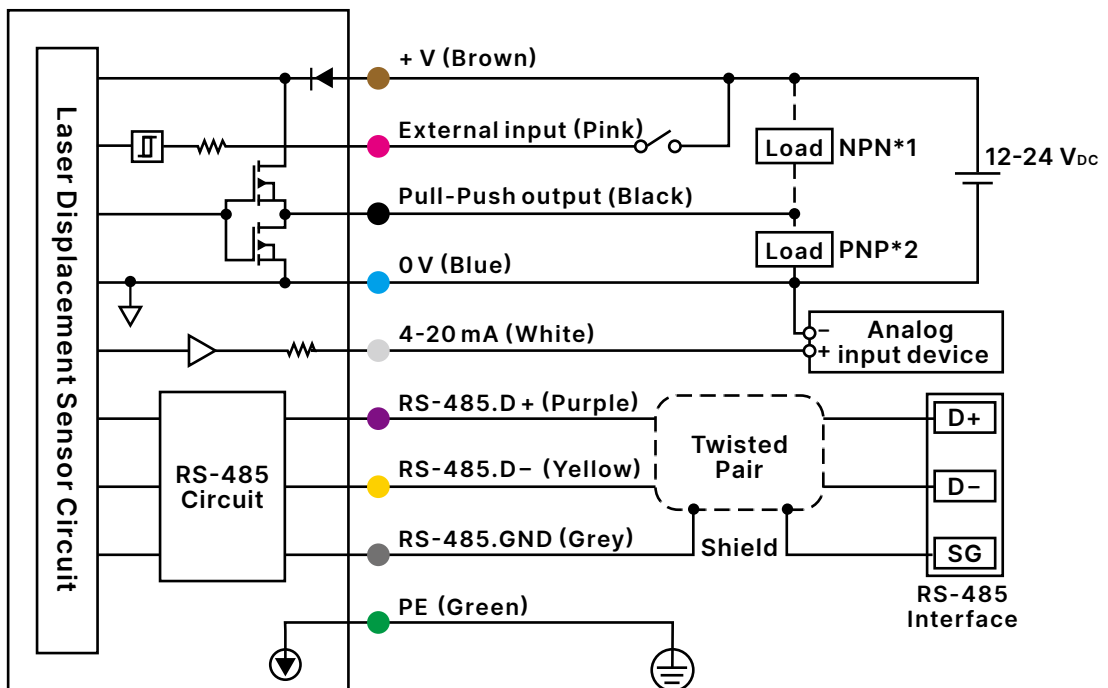
Model	LD-030E-M22	LD-050E-M22	LD-100E-M22	LD-220E-M22	LD-500E-M22
Detection method	Triangular measurement				
Reference Distance (mm)	30	50	100	220	500
Measurement Range (mm)	± 5	± 15	± 35	± 100	± 200
Light spot diameter (center position)	Approx. 100 × 100 μm	Approx. 80 × 70 μm	Approx. 136 × 110 μm	Approx. 290 × 238 μm	Approx. 541 × 330 μm
Interface	Digital I/O/Modbus Communication (RS-485)				
	Support 9,600/14,400/19,200/38,400/57,600/115,200 bps (Factory default:115,200 bps)				
	Support RTU/ASCII 8,N,1 8,N,2 8,O,1 8,O,2 8,E,1 8,E,2 7,O,1 7,E,1 7,O,2 7,E,2				
Light Source	Laser CLASS 2				
Input Voltage	12 ~ 24 V <sub>DC</sub> ± 10% , 1W				
Analog Output	Current range: 4 ~ 20 mA, load impedance: ≤ 300 Ω				
Digital Output	Optional function: Measuring range /Comparison output, Push-Pull Output ,<100 mA				
Digital Input	Optional function: Zero point /Teaching, High-level ≥ 2V, Low-level ≤ 0.8V				
Repeatability	5 μm	15 μm	70 μm	200 μm	300 μm (300 ~ 500 mm) 800 μm (500 ~ 700 mm)
Linearity	± 0.1% F.S	± 0.1% F.S	± 0.1% F.S	± 0.2% F.S	± 0.2% F.S (300 ~ 500 mm) ± 0.3% F.S (500 ~ 700 mm)
Sampling Rate (ms)	1.5 / 3 / 5 (Default: 1.5)				
Indicator	Laser ON: blue, DO: green, DI: yellow				
Protection Circuit	Protection against reverse power protection, output overcurrent, power supply surge, output surge				
Operating Temperature	-10 ~ 50 °C				
Storage Temperature	-25 ~ 65 °C				
Ambient Humidity	30 ~ 85 %				
Enclosure Rating	IP67				
Ambient Light Resistance	3,000 lux or less				
Vibration Resistance	10 ~ 55 Hz, 1.5 mm, 3 axes for 2 hours				
Insulating Resistance	> 20 MΩ (500 V <sub>DC</sub> )				
Withstand Voltage	500 V <sub>AC</sub> 50/60 Hz, 1 min				
Certification	CE				
Materials	Optical window: PC; Case: Aluminum; Cable: PVC				
Cables	Length: 2 m				
Dimensions	44 × 25 × 24 mm				

# Dimensions

Unit: mm



# Wiring Instructions

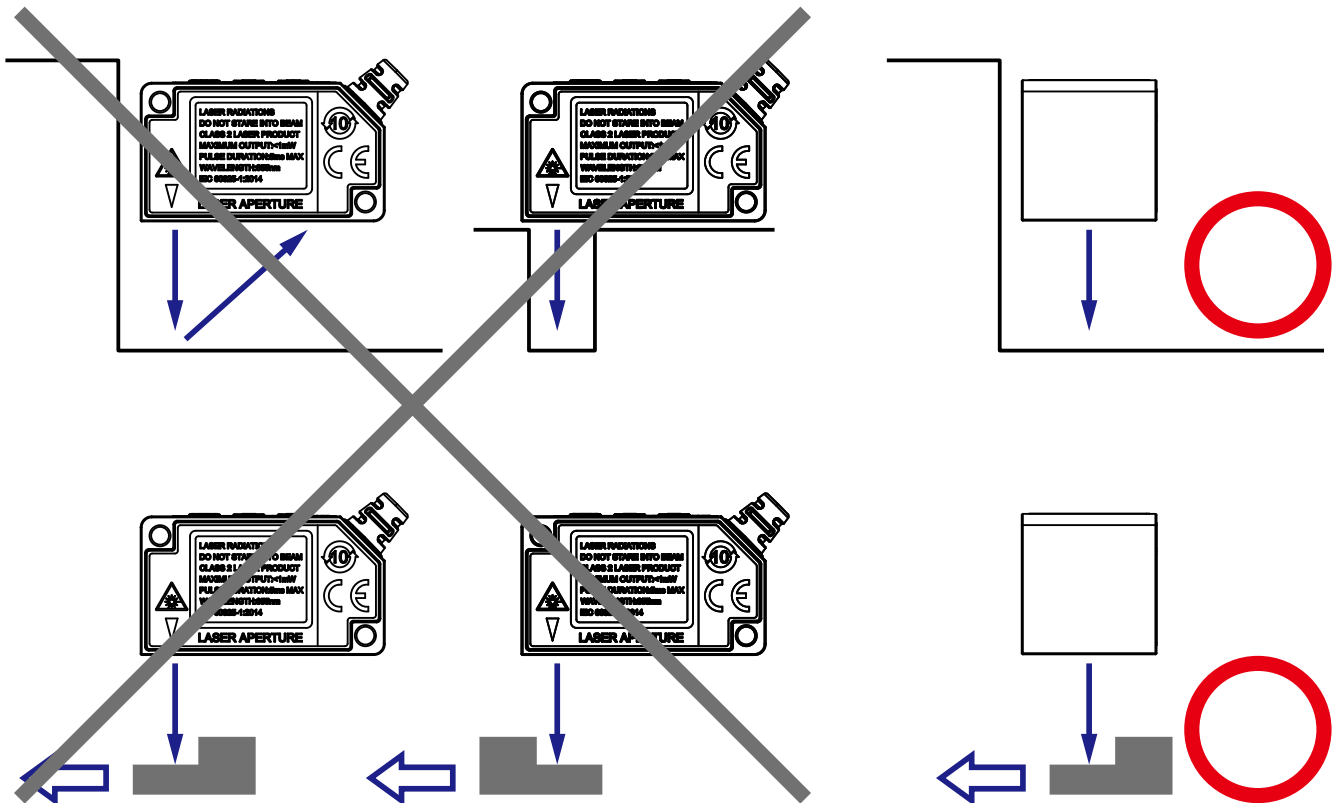


- \*Note 1: In case of NPN connection, please connect the load between black and brown pin (+ V)
- \*Note 2: In case of PNP connection, please connect the load between black and blue pin (0 V)

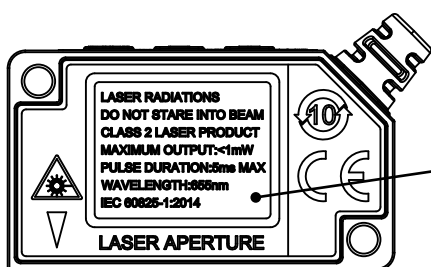
## Caution on Mounting Direction

For best product performance, please note the following instructions when installing products:

- When products cling to devices, install the products in parallel with the devices to assure product performance
- When the shape of an inspection object extrudes, ensure the product's lighting route is vertical to the inspection object's path to assure product performance



## Laser Label Description



Laser Radiations: Class 2 Product  
 Maximum Output: <1mW, Pulse  
 Width: 0.5 ms max.  
 Wave Length: 655 nm, IEC 60825-1:2014

Global Operations

**ASIA (Taiwan)**



Taoyuan Technology Center (Green Building)



Taoyuan Plant 1



Tainan Plant (Diamond-rated Green Building)

**ASIA (China)**

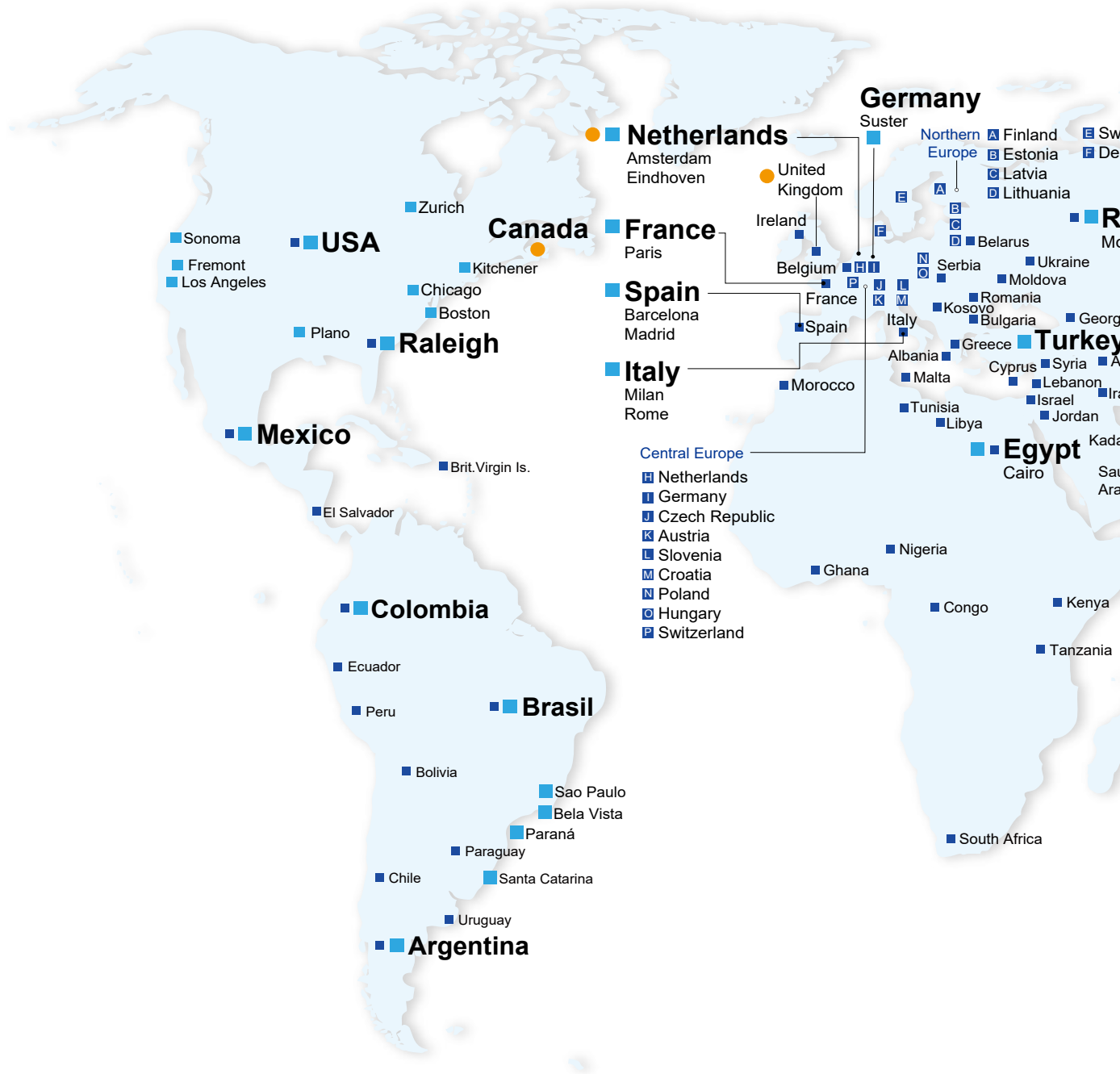


Wujiang Plant 3



Shanghai Office

**▲ 9 Factories**



**ASIA (Japan)**



Tokyo Office

**ASIA (India)**



Rudrapur Plant (Green Building)

**EUROPE**



Amsterdam, the Netherlands

**AMERICA**

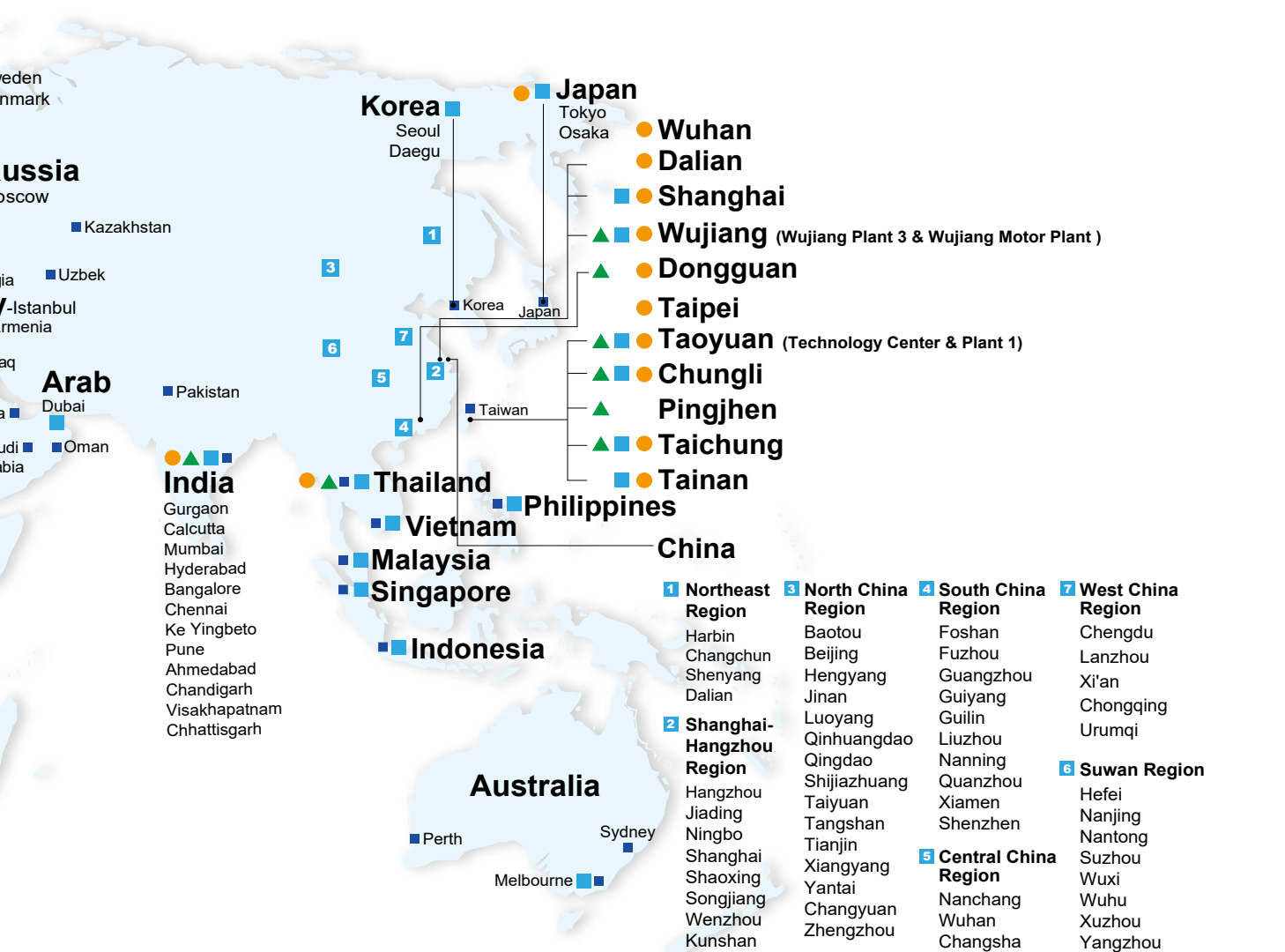


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**112 Branch Offices**

**16 R&D Centers**

**909 Distributors**





Smarter. Greener. Together.

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