



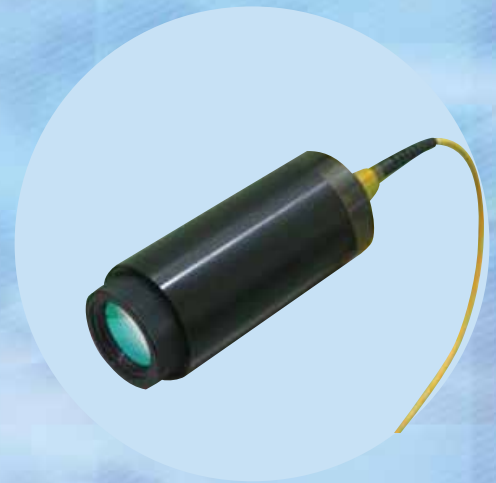
Opt-measure
ENGLISH

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NEW Non contact displacement sensor

Opt - measure



Opt - measure



■ Non-contact interference displacement sensor

White-light interferometry is adopted.
Measurement is available by exposing white light directly to work.
No need for mirror and corner cubes.

■ Suitable for watching over of devices and facilities.

Fine behaviors of devices and facilities can be measured over a long time. It is a sensor suitable for "watching over".

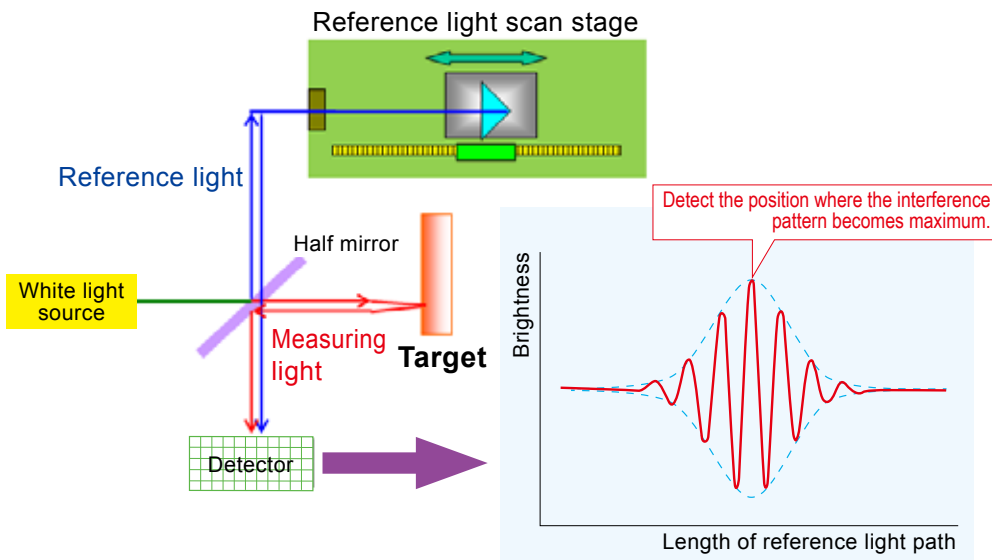
- Wide working distance (600 mm)
- Wide measurement range (± 30 mm)
- High-accuracy ($\pm 5 \mu\text{m}$: 15 to 30°C)

■ Excellent environment resistance

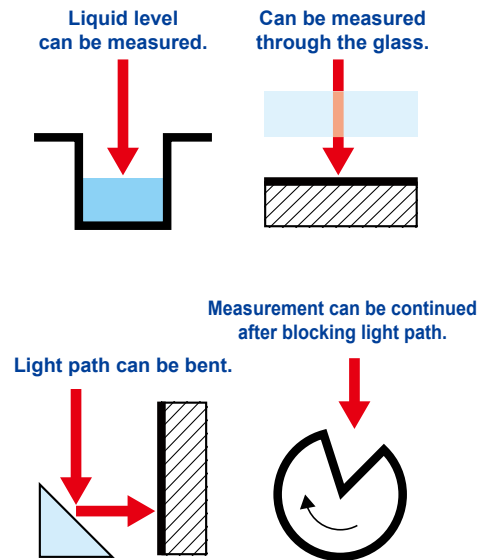
Sensor part can be used under radiation environment by adopting optical fiber system. Sensor and control part can be installed 3000 m apart each other.

- Operating temperature limit (10 to 35°C)
- Can be used under radiation environment
- Maximum fiber length 3000 m

Measurement Principle



Applications



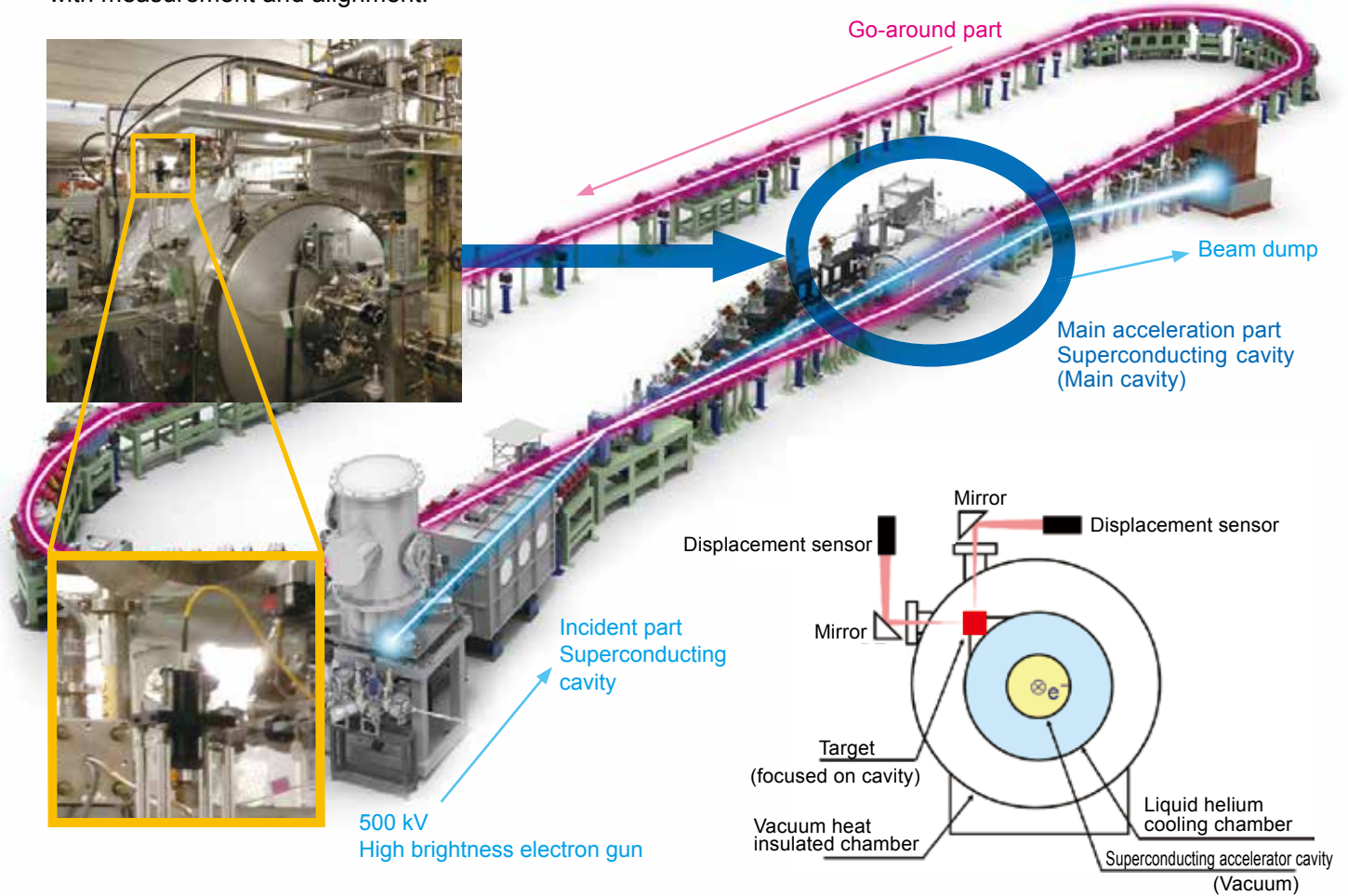
Feature comparison of each non-contact sensor

	Opt-measure	Laser interferometer	Triangulation
Direct measurement	●	×	●
Measurable inclination surface	●	×	△
Length measurement accuracy	△	●	×
Working distance	△	●	△
Measuring range	△	●	△
Absolute measurement	●	×	●
Measuring speed	×	●	●
Operating temperature range	●	△	×
Usage under radiation environment	●	●	×
Multi-layer detection	●	×	△
Sensor cable length	●	×	×
Sensor size	●	●	×

Example of use

It is adopted to measure the strain of superconducting accelerator cavity at cool-down time.

Superconducting accelerator cavity is cooled down to 2 K at operation time. In such case, the deformation inside the cavity affects to the characteristic of electron beam. Electron beam with excellent property can be generated by correcting the deformation with measurement and alignment.

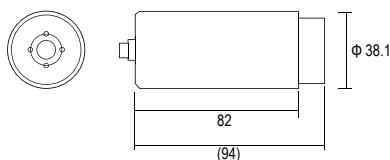


*Figures and pictures are provided from KEK (High Energy Accelerator Research Organization).

External View (Measuring unit)



External View (Sensor)



Specification

items	Specification
Measurement Principle	White light interferometry
Light source	ASE light source
Number of connectable sensors	1 to 4
Distance between head and control part	3000 m
Distance between head and target	600 mm (Max. 1500 mm: can be specified at ordering time)
Measuring range	±30 mm
Indication accuracy (15°C to 30°C)	±5 μm
Measurable inclination surface	±30° (Roughness of measuring surface: Ra >1.6 μm)
Sampling speed	< 2 Hz
Measurement resolution	0.5 μm
Spot diameter	Φ 50 μm
Sensor head dimension	Φ 38.1×80 mm
Sensor head weight	180 g
Laser safety class	class 2

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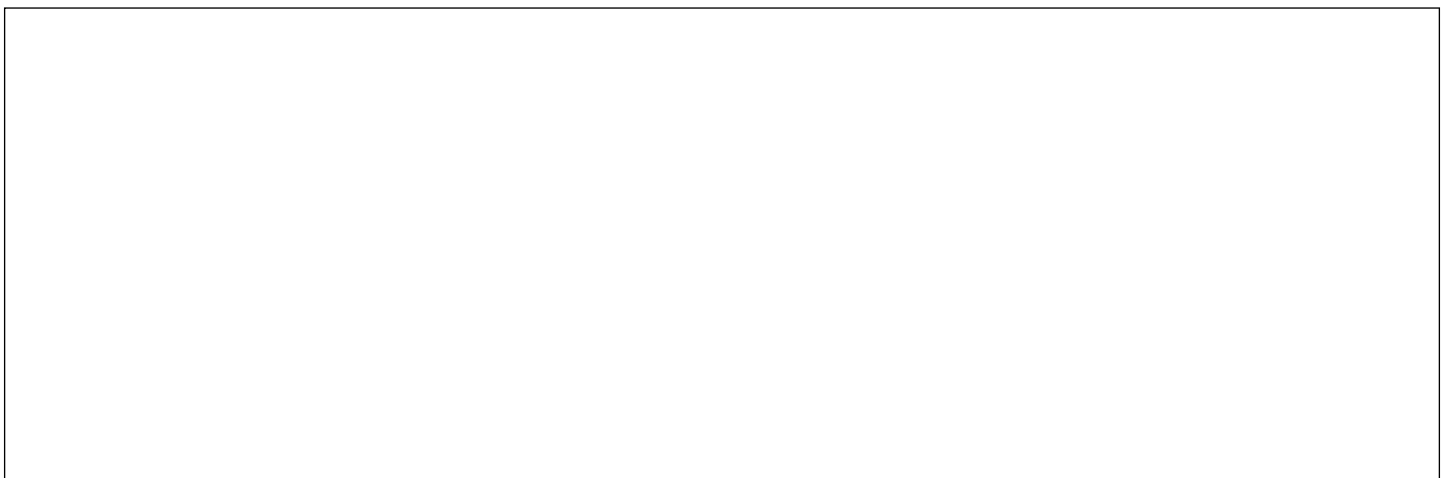
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