High-brightness Line Coaxial 《LLRA Series》
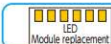
LLRA Series

Coaxial line epi-illumination enables irradiation on the same axis as the line camera.
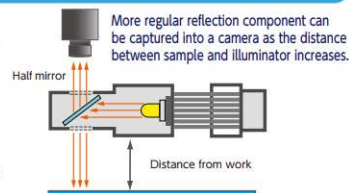

Regular reflection light

Half mirror
(Mirror reflects half the light and allows the other half to pass through)

High-power irradiation

High brightness even by coaxial epi-illumination.

Work

RoHS2 COMPLIANT | Fan cooling | Customizable | Light distribution control | Emission color ○●●● | LED Module replacement

Features

● Coaxial epi-illumination for line camera
● Irradiation in the same axial direction as camera through a half mirror
● Makes the contrast with detection target clear by allowing escape of regular reflection light at dents, scratches, and engraved marks on work surfaces.
● More regular reflection component can be captured into a camera as the distance between sample and illuminator increases.
● This type can also be installed in areas of limited size with high brightness and short-depth irradiator.

Half mirror

More regular reflection component can be captured into a camera as the distance between sample and illuminator increases.

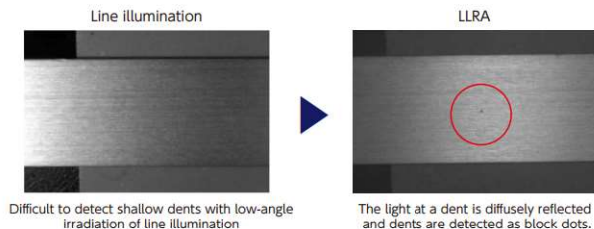Distance from work

Application example

Steel plate inspection, glass inspection, sheet inspection, metal surface inspection, edge inspection, line sensor light source, visual inspection light source, image processing light source

Inspection of dents in metal shafts
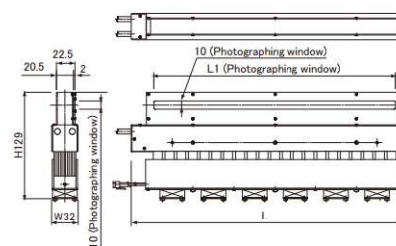
Example of imaging

● Inspection of dents in steel plates

Line illumination

LLRA

Difficult to detect shallow dents with low-angle irradiation of line illumination

The light at a dent is diffusely reflected and dents are detected as block dots.

Product Specifications

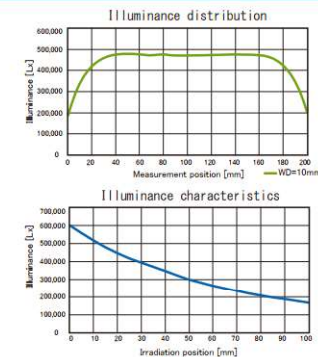| Model	LxWxH [mm]	Photographing window L1 [mm]	Power consumption (white) [W]	Input voltage [V]	Example of applicable power supply
LLRA138Fx21-129✳	138x32x129	95	39	48	※1
LLRA238Fx21-129✳	238x32x129	195	77	48	※1
LLRA338Fx21-129✳	338x32x129	295	116	48	※1
LLRA438Fx21-129✳	438x32x129	395	154	48	※1
LLRA538Fx21-129✳	538x32x129	495	192	48	※1
LLRA638Fx21-129✳	638x32x129	595	231	48	※1
LLRA738Fx21-129✳	738x32x129	695	269	48	※1
LLRA838Fx21-129✳	838x32x129	795	308	48	※1
LLRA938Fx21-129✳	938x32x129	895	346	48	※1
LLRA1038Fx21-129✳	1038x32x129	995	384	48	※1

● ✳in Model : Emission color W (white) R (red) G (green) B (blue) ● Available emitter size : Units of 100 mm
※1 For details about other sizes, contact our sales department.

Outer dimensions

22.5
20.5
2
H129
W32
10 (Photographing window)

10 (Photographing window)
L1 (Photographing window)

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* Product specifications are subject to change without notice.

Data (Typical example : LLRA438FX21-129W)

Illuminance distribution

Illuminance [Lx]
600,000
500,000
400,000
300,000
200,000
100,000
0
0 20 40 60 80 100 120 140 160 180 200
Measurement position [mm]
WD=10mm

Illuminance characteristics

Illuminance [Lx]
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
0 10 20 30 40 50 60 70 80 90 100
Irradiation position [mm]

* Graph information (for reference only) does not guarantee product quality.

Installation example

Using together with line dome illumination (half-pipe illumination)

Reflection of the photographing window slit of line dome illumination can be eliminated by combining coaxial line illumination with line dome illumination (half-pipe illumination).