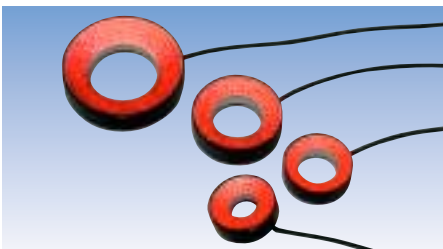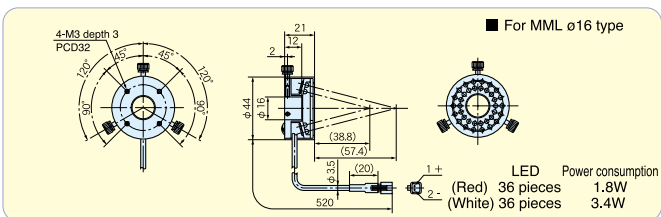# LED Lighting

■ Long life, compact, light weight LED lighting for image processing. High intensity LED is used.

■ Various shapes of lighting such as ring and rectangular type, transmission-type, coaxial-type, and chip mounted type are available.

■ Power source is 1-2 channel type. Manual light control, external lamp ON/OFF, external light control type, and digital light control type are available.
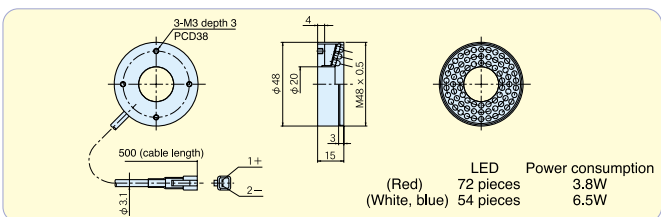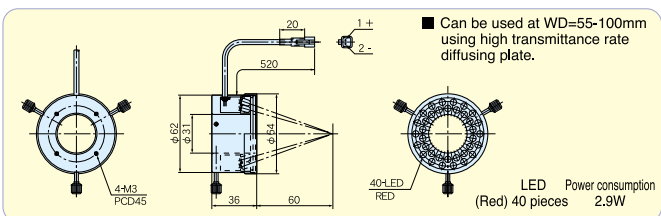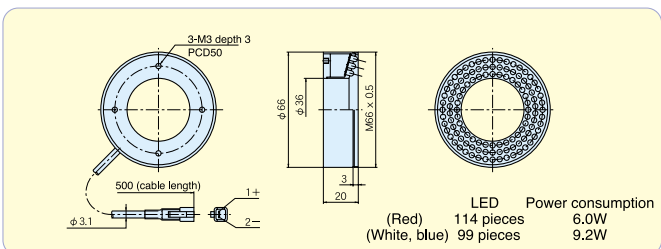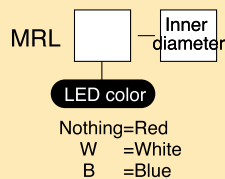
Direct ring type

Features

High intensity LED is arranged at high density. Lighting from 360° creates even light with no shadows.
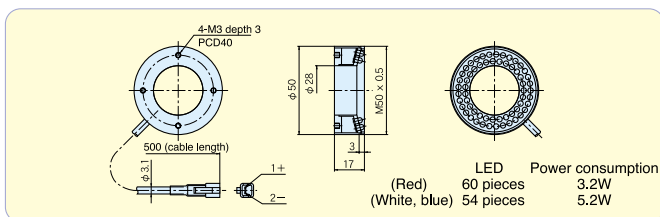
Applications

Substrate inspection, liquid crystal alignment, label inspection, plastic container inspection, mounter, IC impress inspection, two-dimensional code reader
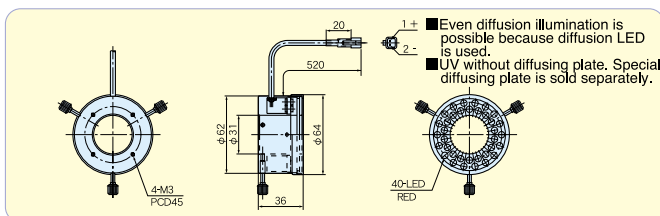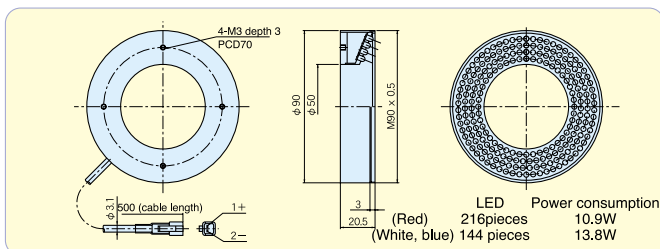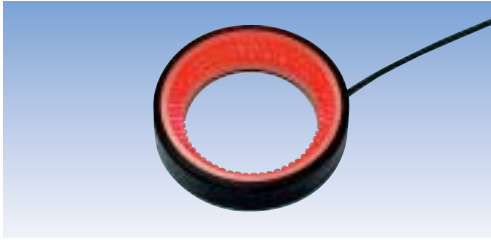
Model explanation

MRL □ — Inner diameter

LED color

Nothing = Red
W = White
B = Blue

MRL-16/MRLW-16

4-M3 depth 3 PCD32

■ For MML ø16 type

LED		Power consumption
(Red)	36 pieces	1.8W
(White)	36 pieces	3.4W

MRL-20/MRLW-20 / MRLB-20

3-M3 depth 3 PCD38

500 (cable length)

LED		Power consumption
(Red)	72 pieces	3.8W
(White, blue)	54 pieces	6.5W

MRL-28/MRLW-28 / MRLB-28

4-M3 depth 3 PCD40

500 (cable length)

LED		Power consumption
(Red)	60 pieces	3.2W
(White, blue)	54 pieces	5.2W

MRL-31A-L   Made to order

■ Can be used at WD=55-100mm using high transmittance rate diffusing plate.

4-M3 PCD45

40-LED RED

LED		Power consumption
(Red)	40 pieces	2.9W

MRL-31A   Made to order   / MRL-31A-UV   Made to order

■ Even diffusion illumination is possible because diffusion LED is used.
■ UV without diffusing plate. Special diffusing plate is sold separately.

4-M3 PCD45

40-LED RED

MRL-36/MRLW-36 / MRLB-36

3-M3 depth 3 PCD50

500 (cable length)

LED		Power consumption
(Red)	114 pieces	6.0W
(White, blue)	99 pieces	9.2W

MRL-50/MRLW-50 / MRLB-50

4-M3 depth 3 PCD70

500 (cable length)

LED		Power consumption
(Red)	216 pieces	10.9W
(White, blue)	144 pieces	13.8W

Low angle ring type

MSL-68/MSLW-68
MSLB-68

3-M3 depth 3
PCD84

φ100
φ68
M100 × 0.5

3
22

500 (cable length)

φ3.1

1+
2−

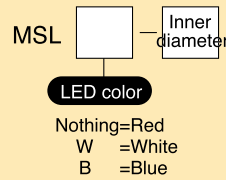| LED		Power consumption
(Red)	186 pieces	9.9W
(White, blue)	90 pieces	8.6W
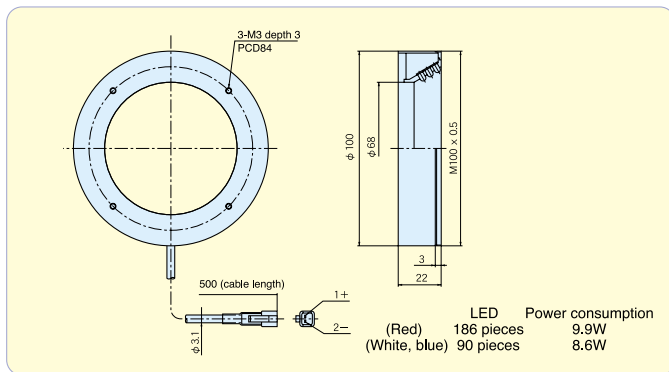
Features

Lighting from low angle of 360° , shiny objects are not reflected. Best for shallow unevenness (embossment, etc.) and scratches.
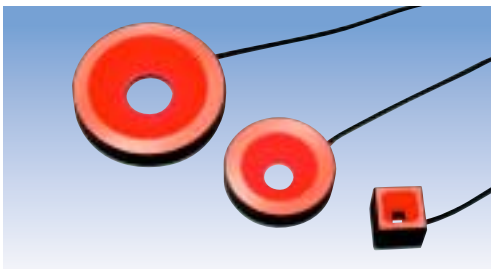
Applications

BGA solder ball position, shape, and area inspection; laser carving reading; inspection for scratches and dirt on wafer or glass substrates.
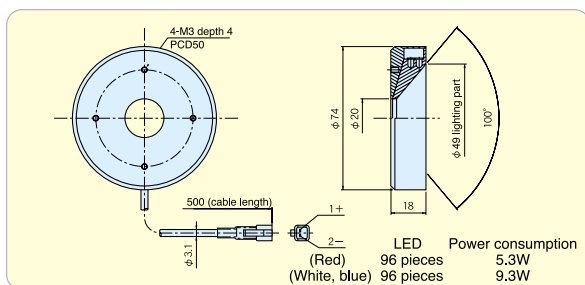
Model explanation

MSL ☐ — Inner diameter

LED color

Nothing=Red
W = White
B = Blue

Shadow less ring type / shadow less square type

MKL-20/MKLW-20
MKLB-20

4-M3 depth 4
PCD50

φ74
φ20
φ49 lighting part
100°

500 (cable length)

φ3.1

1+
2−

18

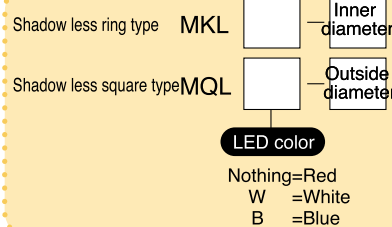| LED		Power consumption
(Red)	96 pieces	5.3W
(White, blue)	96 pieces	9.3W

Features

Even, soft, diffused lighting on shiny objects. Best to prevent halo effect.
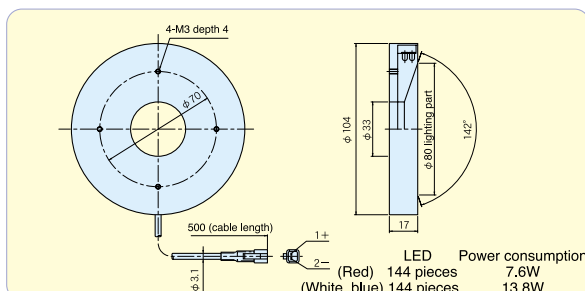
Applications

IC impress inspection, substrate part inspection, wafer visual inspection, solder inspection, connector pitch inspection. Square type is the best for square-shape objects such as BGA and QFP.
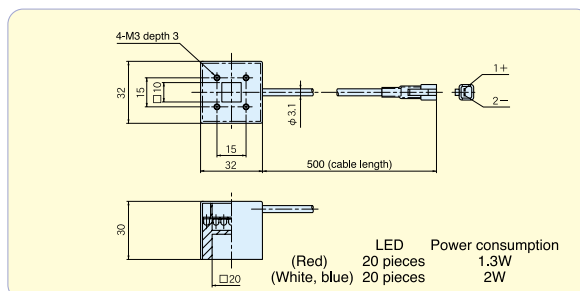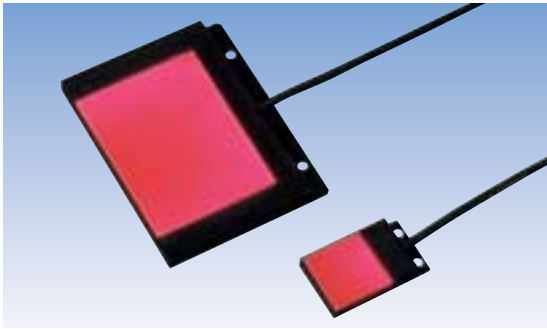
Model explanation

Shadow less ring type **MKL** ☐ — Inner diameter

Shadow less square type **MQL** ☐ — Outside diameter

LED color

Nothing=Red
W = White
B = Blue

MKL-33/MKLW-33
MKLB-33

4-M3 depth 4

φ70

φ104
φ33
φ80 lighting part
142°

500 (cable length)

φ3.1

1+
2−

17

LED		Power consumption
(Red)	144 pieces	7.6W
(White, blue)	144 pieces	13.8W

MQL-32/MQLW-32
MQLB-32

4-M3 depth 3

32
15
□10

15
32

φ3.1

1+
2−

500 (cable length)

30

□20

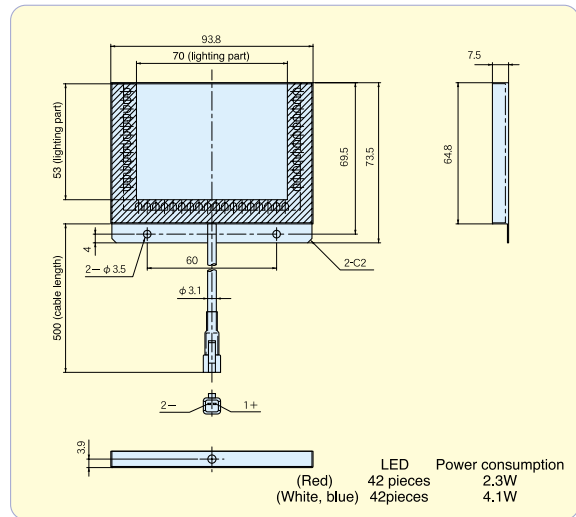| LED		Power consumption
(Red)	20 pieces	1.3W
(White, blue)	20 pieces	2W

Edge light transmitting type

Features

Thin and compact design to save space. Uniform luminosity and high intensity are achieved by using a reflecting light guide.

Applications

Lead frame inspection; shape recognition and size measurement of electronic parts; bend lead inspection for GFP, QSP, and SOP; metal surface inspection, bacteria culture observation; silhouette observation

Model explanation

MEG ☐ ― ☐

- LED color
- Lighting size

Nothing=Red   2525=25 x 25mm
W   =White   5370=53 x 70mm
B   =Blue

MEG-2525/MEGW-2525 MEGB-2525

LED		Power consumption
(Red)	6 pieces	0.3W
(White, blue)	6 pieces	0.6W

MEG-5370/MEGW-5370 MEGB-5370

| LED		Power consumption
(Red)	42 pieces	2.3W
(White, blue)	42 pieces	4.1W

Bar type

Features

High intensity LEDs are arranged in a bar-shape. Side light from any angle can be achieved according to objects.

Applications

LED defect inspection, shape recognition and size measurement of electronic parts, fabrication crack inspection, recognition of complicated shapes, straight pipe fluorescent lamp replacement.
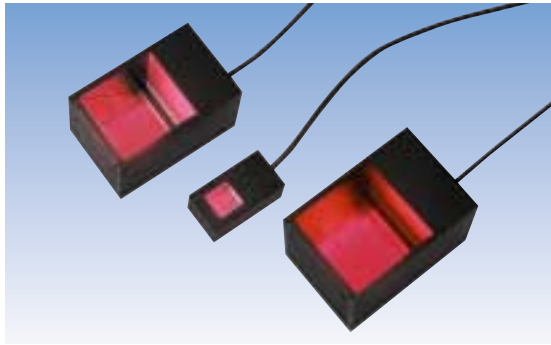
MBAR-5015/MBARW-5015 MBARB-5015

LED		Power consumption
(Red)	36 pieces	1.9W
(White, blue)	36 pieces	3.5W
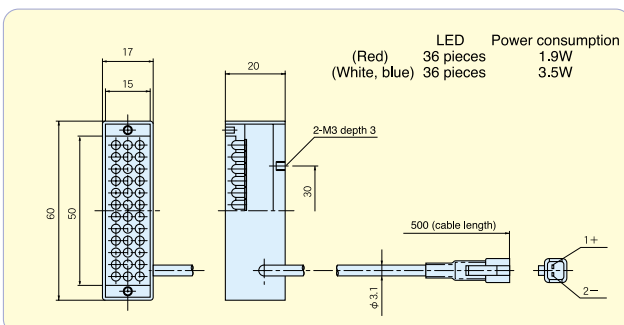
Model explanation

MBAR ☐ ― ☐

- LED color
- Lighting size

Nothing=Red
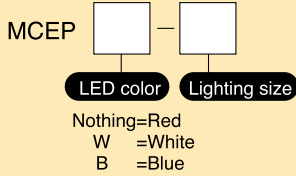W   =White
B   =Blue

Simulated coaxial type

Features

Provides simulated even coaxial lighting to telecentric MML lenses and other lenses without coaxial episcopic illumination.
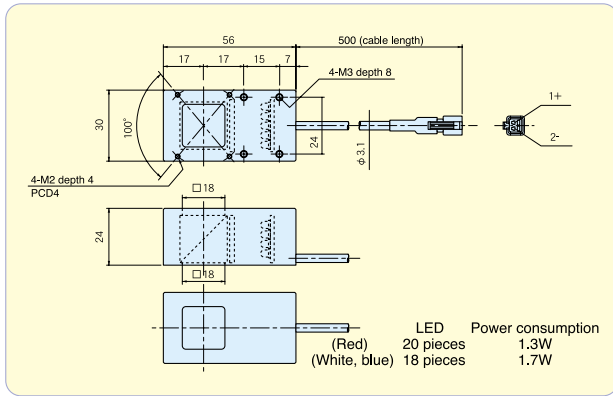
Applications

Alignment and surface inspection of mirror surface such as wafer, metal surface, film, liquid crystal, and glass. Pattern and mark inspection of printed boards.
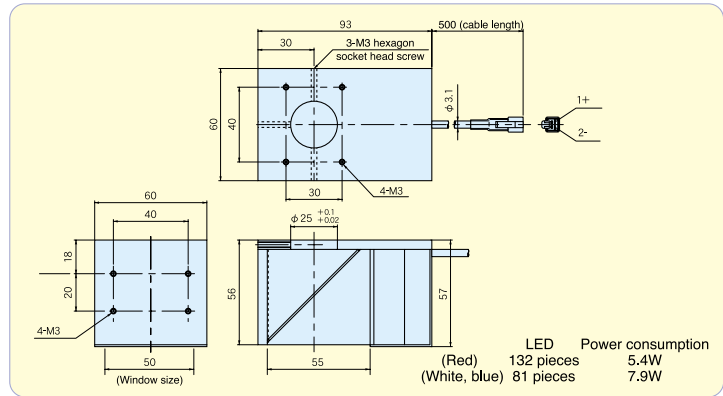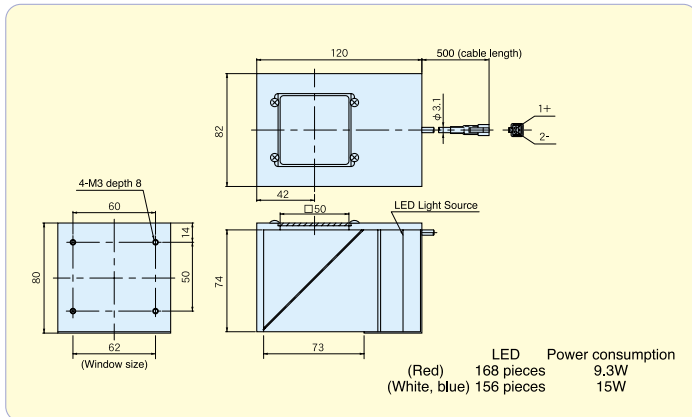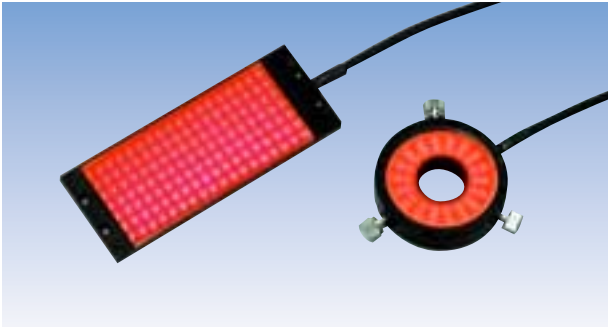
Model explanation

MCEP ☐ — ☐

LED color · Lighting size

Nothing=Red
W   =White
B   =Blue

MCEP-20/MCEPW-20
MCEPB-20

	LED	Power consumption
(Red)	20 pieces	1.3W
(White, blue)	18 pieces	1.7W

MCEP-56/MCEPW-56
MCEPB-56

	LED	Power consumption
(Red)	132 pieces	5.4W
(White, blue)	81 pieces	7.9W

MCEP-82/MCEPW-82
MCEPB-82

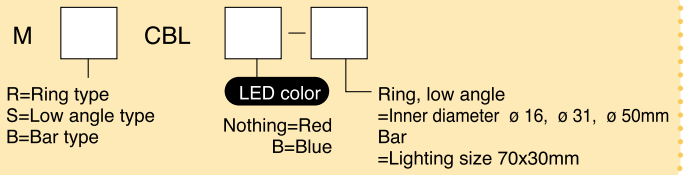|	LED	Power consumption
(Red)	168 pieces	9.3W
(White, blue)	156 pieces	15W

Chip mounted type

Features

Thinner and smaller than conventional LEDs because LED elements are bonded to a substrate. Even, soft light can be achieved in a short working distance.
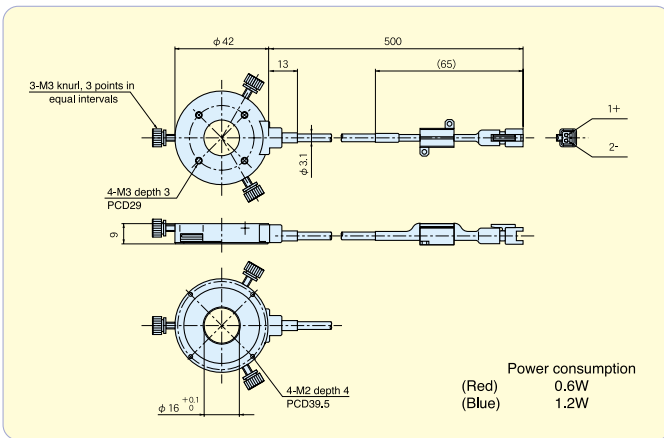
Applications
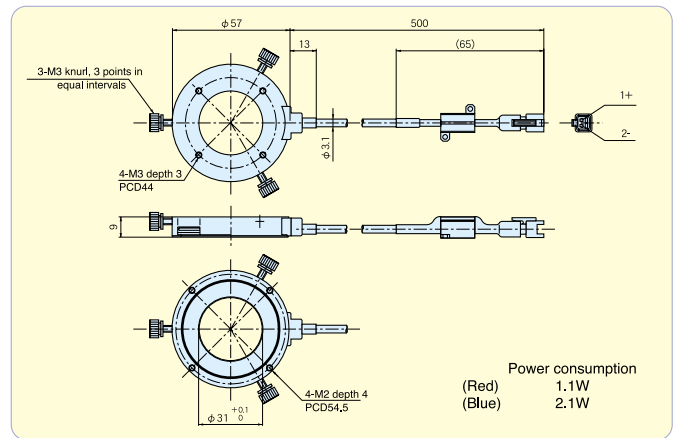
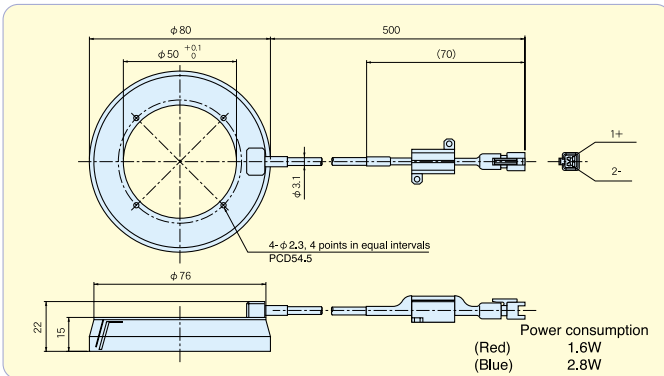Electronic part and wafer alignment in small spaces.

Model explanation

M ☐ CBL ☐ – ☐

R=Ring type
S=Low angle type
B=Bar type

LED color
Nothing=Red
B=Blue

Ring, low angle
=Inner diameter ø 16, ø 31, ø 50mm
Bar
=Lighting size 70x30mm

MRCBL-16/MRCBLB-16

φ42
500
(65)
13
3-M3 knurl, 3 points in equal intervals
φ3.1
1+
2-
4-M3 depth 3
PCD29
9
4-M2 depth 4
PCD39.5
φ16 +0.1 0

Power consumption
(Red)   0.6W
(Blue)   1.2W

MRCBL-31/MRCBLB-31

φ57
500
13
(65)
3-M3 knurl, 3 points in equal intervals
φ3.1
1+
2-
4-M3 depth 3
PCD44
9
4-M2 depth 4
PCD54.5
φ31 +0.1 0

Power consumption
(Red)   1.1W
(Blue)   2.1W

MSCBL-50/MSCBLB-50

φ80
φ50 +0.1 0
500
(70)
φ3.1
1+
2-
4-φ2.3, 4 points in equal intervals
PCD54.5
φ76
22
15

Power consumption
(Red)   1.6W
(Blue)   2.8W

MBCBL-7030/MBCBLB-7030

88
500
70
(70)
34
30
12
φ3.5
1+
2-
2.5
83
4-M3
5

Power consumption
(Red)   1.8W
(Blue)   2.8W

Power source

Features

Manual light control, external analog light control, and external digital light control types are available. Select according to your desired purpose.
A double-channel type with independent channels is also available to light two LEDs at the same time.
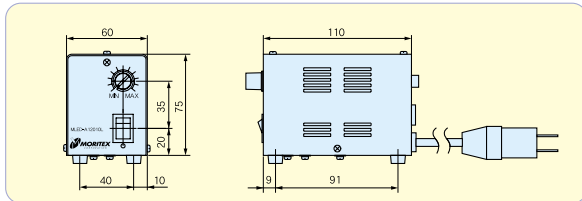
Applications

10-25W power supply for Moritex LED lightings.

MLED-A12010L
(Single-light manual light control type)　　　Capacity: 10W

MLED-B12025LRD
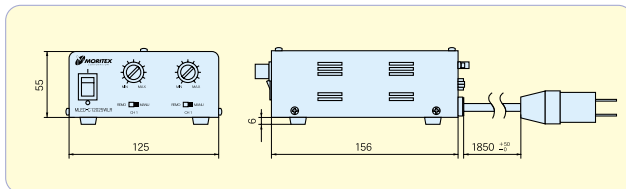(Single-light external digital light control type)　　Capacity: 25W

* Trunk cable MRC-01/02/03 is necessary to connect MLED-A12010L or MLED-B12025LRD to a LED lighting.

MLED-C12025WLR
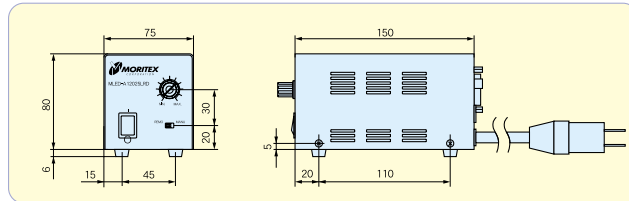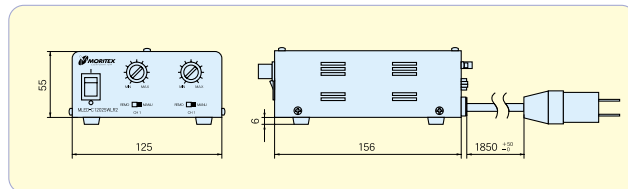(Double-light manual light control type)　　Capacity: 25W in total

MLED-C12025WLR2
(Double-light manual light control type)　　Capacity: 25W in total
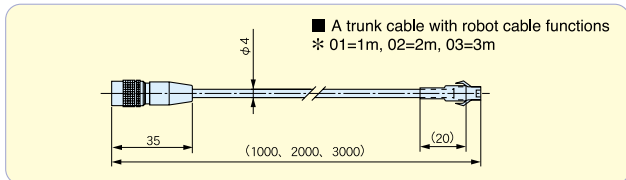
*Trunk cable MRC-01/02/03 is not necessary.

*Trunk cable MRC-01/02/03 is not necessary.
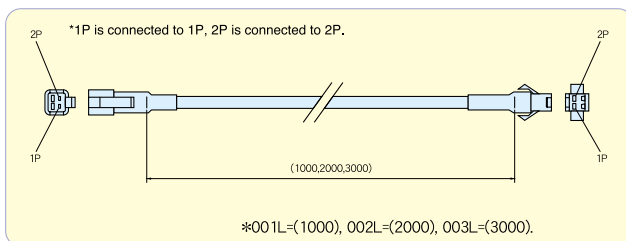*AC200V Type.

Trunk cable

MRC-01/02/03
For MLED- A12010L and MLED-B12025LRD

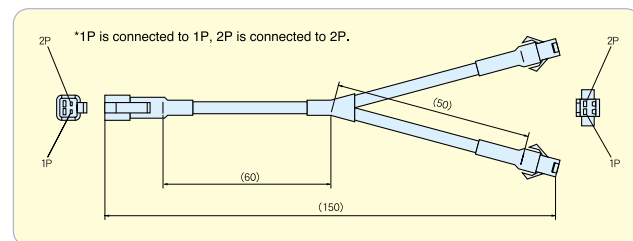■ A trunk cable with robot cable functions
✽ 01=1m, 02=2m, 03=3m

* This cable is necessary to connect a LED lighting with the power source MLED-A12010L or MLED-B12025LRD.

Extension cable / branch cable

Extension cable **M-RCB001L/002L/003L**

*1P is connected to 1P, 2P is connected to 2P.

✽001L=(1000), 002L=(2000), 003L=(3000).

Two-branch cable **M-CB2**

*1P is connected to 1P, 2P is connected to 2P.

Four-branch cable **M-CB4**

*1P is connected to 1P, 2P is connected to 2P.