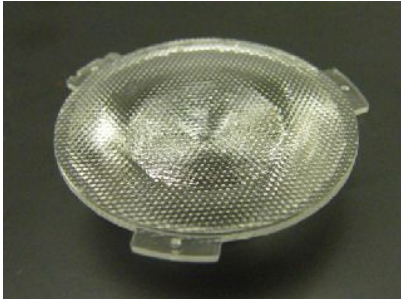


# ILU - 008 series

## Appearance



Material : PMMA

## Application

LED Bulb(MR16,GU10,etc...)  
LED Down-light , Street Light, others ...

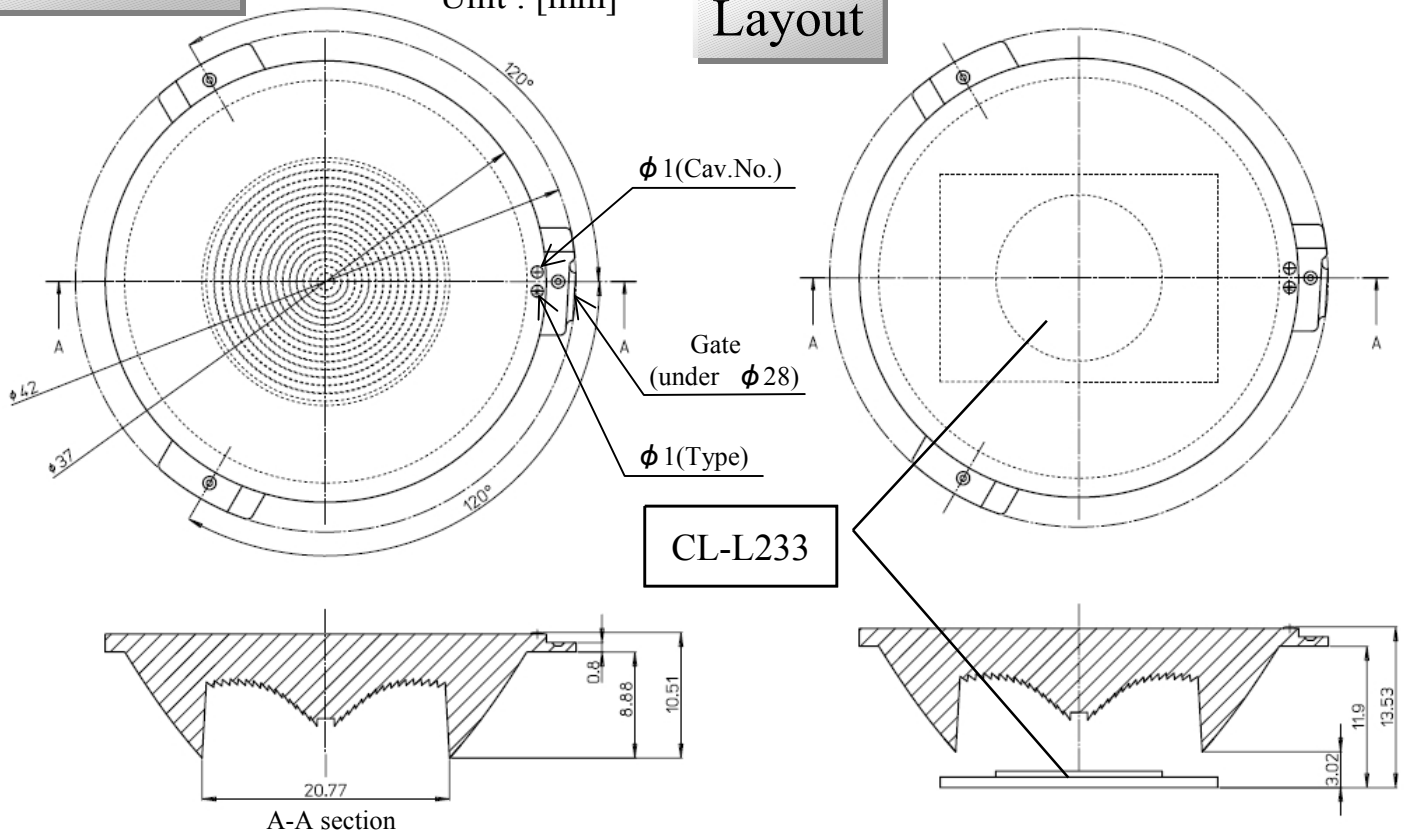
### Recommended LED



## Outline

Unit : [mm]

## Layout



### < Attention in the handling >

- To fix the lens, the use of its flange with thickness of 3.02mm is recommended.
- The lens should be placed against the LED “CL-L251” , “CL-L233” , “CL-L330” or “CL-L340” as shown in the figure above.
- The specification is subject to change without notice.
- The prism shape is not accurate.

CITIZEN ELECTRONICS CO.,LTD.

Ref.CE-P957 04/11

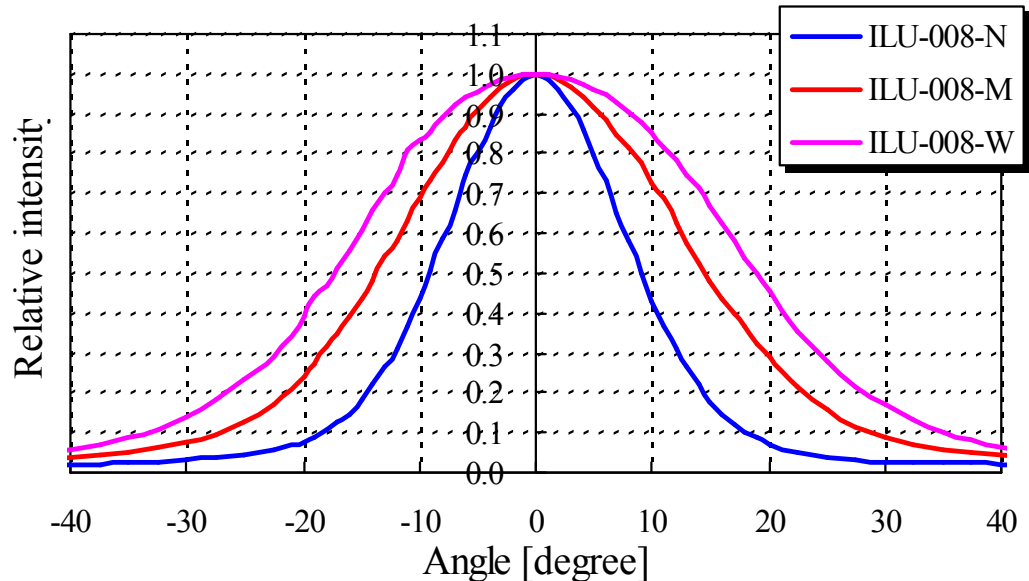
# ILU - 008 series

## Luminous intensity

## With CL-L251 (4W) Series

LED \ Lens	Lens	ILU-008-N FWHM 18[deg]	ILU-008-M FWHM 28[deg]	ILU-008-W FWHM 37[deg]
CL-L251-MC4N1-C	350 [lm]	1300 [cd]	800 [cd]	560 [cd]
CL-L251-MC4W1-C	340 [lm]	1270 [cd]	780 [cd]	540 [cd]
CL-L251-MC4WW1-C	325 [lm]	1210 [cd]	740 [cd]	520 [cd]
CL-L251-MC4L1-C	310 [lm]	1160 [cd]	710 [cd]	490 [cd]
CL-L251-MC4L2-C	285 [lm]	1060 [cd]	650 [cd]	450 [cd]
CL-L251-HC4N1-C	295 [lm]	1100 [cd]	680 [cd]	470 [cd]
CL-L251-HC4W1-C	280 [lm]	1040 [cd]	640 [cd]	450 [cd]
CL-L251-HC4L1-C	255 [lm]	950 [cd]	580 [cd]	410 [cd]
CL-L251-C4N1-C	425 [lm]	1580 [cd]	970 [cd]	680 [cd]

## Directivity



### < Attention in the handling >

- To fix the lens, the use of its flange with thickness of 3.02mm is recommended.
- The lens should be placed against the LED “CL-L251” , “CL-L233” , “CL-L330” or “CL-L340” as shown in the figure above.
- The specification is subject to change without notice.

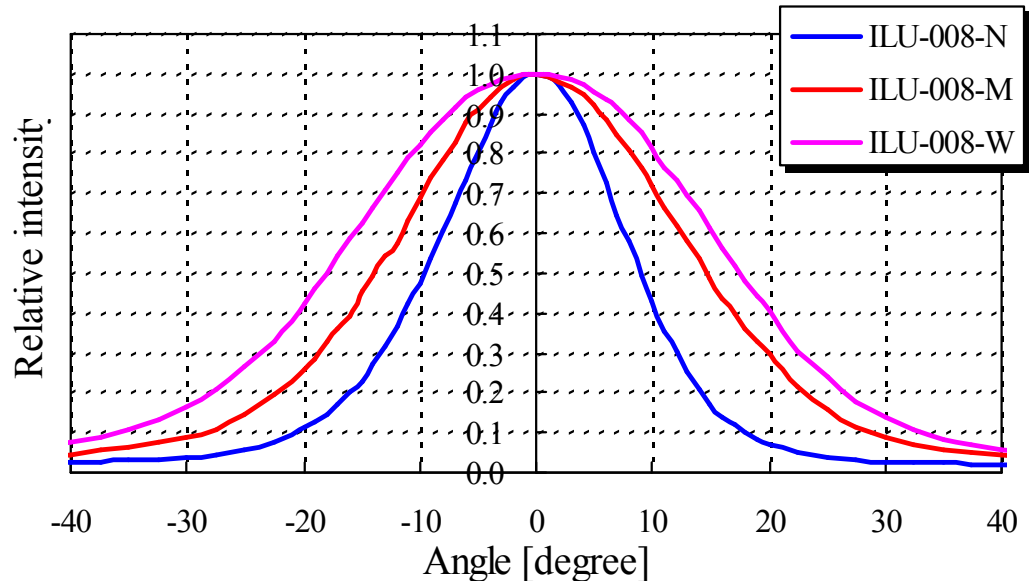
# ILU - 008 series

## Luminous intensity

## With CL-L251 (6W) Series

LED	Lens	ILU-008-N	ILU-008-M	ILU-008-W
		FWHM 19[deg]	FWHM 29[deg]	FWHM 36[deg]
CL-L251-MC6N1-C	490 [lm]	2060 [cd]	1080 [cd]	770 [cd]
CL-L251-MC6W1-C	485 [lm]	2040 [cd]	1070 [cd]	760 [cd]
CL-L251-MC6WW1-C	455 [lm]	1920 [cd]	1010 [cd]	710 [cd]
CL-L251-MC6L1-C	425 [lm]	1790 [cd]	940 [cd]	670 [cd]
CL-L251-MC6L2-C	390 [lm]	1640 [cd]	860 [cd]	610 [cd]
CL-L251-HC6N1-C	370 [lm]	1560 [cd]	820 [cd]	580 [cd]
CL-L251-HC6W1-C	350 [lm]	1470 [cd]	770 [cd]	550 [cd]
CL-L251-HC6L1-C	335 [lm]	1410 [cd]	740 [cd]	530 [cd]
CL-L251-C6N1-C	625 [lm]	2630 [cd]	1380 [cd]	980 [cd]

## Directivity



### < Attention in the handling >

- To fix the lens, the use of its flange with thickness of 3.02mm is recommended.
- The lens should be placed against the LED “CL-L251”, “CL-L233”, “CL-L330” or “CL-L340” as shown in the figure above.
- The specification is subject to change without notice.

CITIZEN ELECTRONICS CO.,LTD.

Ref.CE-P957 04/11

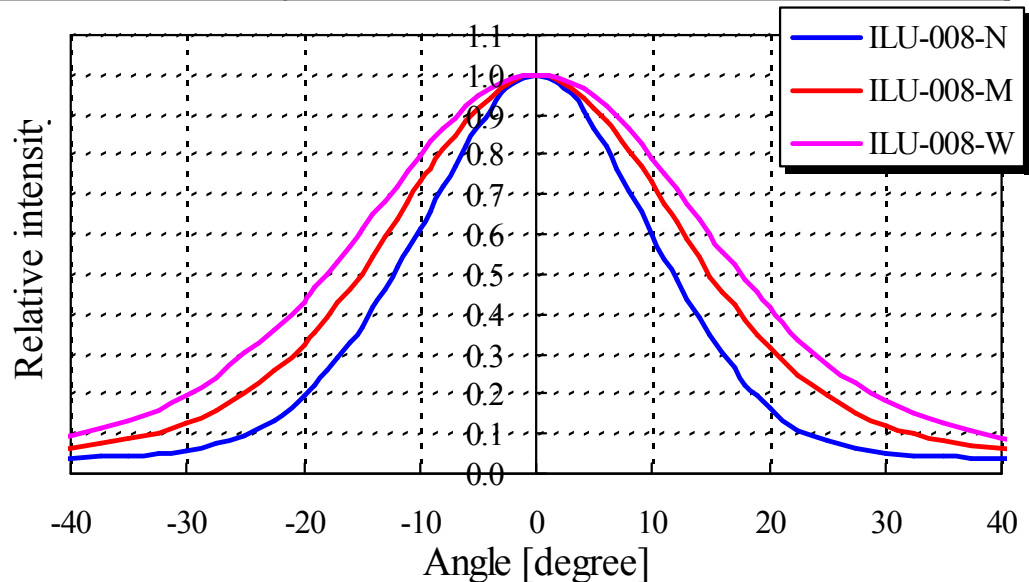
# ILU - 008 series

## Luminous intensity

## With CL-L233 (13W) Series

LED \ Lens	Lens	ILU-008-N FWHM 24[deg]	ILU-008-M FWHM 30[deg]	ILU-008-W FWHM 36[deg]
CL-L233-MC13N1-C	1110 [lm]	3410 [cd]	2110 [cd]	1750 [cd]
CL-L233-MC13W1-C	1055 [lm]	3240 [cd]	2010 [cd]	1660 [cd]
CL-L233-MC13WW1-C	1005 [lm]	3090 [cd]	1910 [cd]	1580 [cd]
CL-L233-MC13L1-C	960 [lm]	2950 [cd]	1830 [cd]	1510 [cd]
CL-L233-MC13L2-C	885 [lm]	2720 [cd]	1680 [cd]	1400 [cd]
CL-L233-HC13N1-C	890 [lm]	2730 [cd]	1690 [cd]	1400 [cd]
CL-L233-HC13W1-C	840 [lm]	2580 [cd]	1600 [cd]	1320 [cd]
CL-L233-HC13WW1-C	805 [lm]	2470 [cd]	1530 [cd]	1270 [cd]
CL-L233-HC13L1-C	725 [lm]	2230 [cd]	1380 [cd]	1140 [cd]
CL-L233-HC13L2-C	710 [lm]	2180 [cd]	1350 [cd]	1120 [cd]
CL-L233-C13N1-C	1410 [lm]	4300 [cd]	2670 [cd]	2210 [cd]

## Directivity



< Attention in the handling >

- To fix the lens, the use of its flange with thickness of 3.02mm is recommended.
- The lens should be placed against the LED “CL-L251”, “CL-L233”, “CL-L330” or “CL-L340” as shown in the figure above.
- The specification is subject to change without notice.

CITIZEN ELECTRONICS CO.,LTD.

Ref.CE-P957 04/11

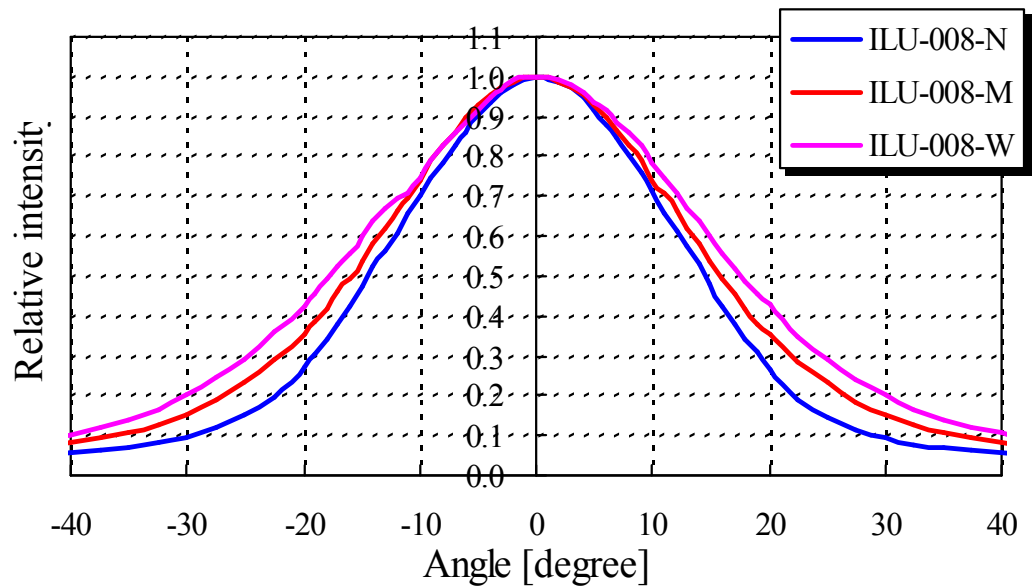
# ILU - 008 series

## Luminous intensity

## With CL-L330 (26W) Series

LED \ Lens		ILU-008-N FWHM 29[deg]	ILU-008-M FWHM 32[deg]	ILU-008-W FWHM 36[deg]
CL-L330-C26N-C	2800 [lm]	6030 [cd]	4580 [cd]	3840 [cd]
CL-L330-MC26L1-C	1960 [lm]	4220 [cd]	3210 [cd]	2690 [cd]

## Directivity



### < Attention in the handling >

- To fix the lens, the use of its flange with thickness of 3.02mm is recommended.
- The lens should be placed against the LED “CL-L251” , “CL-L233” , “CL-L330” or “CL-L340” as shown in the figure above.
- The specification is subject to change without notice.

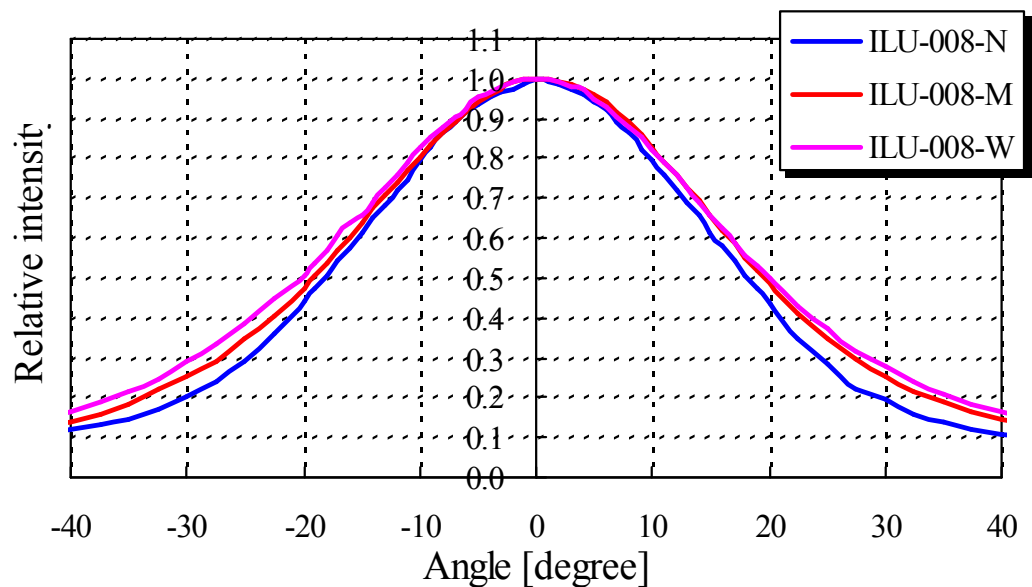
# ILU - 008 series

## Luminous intensity

## With CL-L340 (41W) Series

LED \ Lens		ILU-008-N	ILU-008-M	ILU-008-W
		FWHM 37[deg]	FWHM 39[deg]	FWHM 41[deg]
CL-L340-C41N-C	4390 [lm]	5700 [cd]	4670 [cd]	4220 [cd]
CL-L340-MC41L1-C	3060 [lm]	3970 [cd]	3260 [cd]	2940 [cd]

## Directivity



### < Attention in the handling >

- To fix the lens, the use of its flange with thickness of 3.02mm is recommended.
- The lens should be placed against the LED “CL-L251”, “CL-L233”, “CL-L330” or “CL-L340” as shown in the figure above.
- The specification is subject to change without notice.

# ILU - 008 series

## Physical properties

Property	Test Method	Condition	Unit	Value
<b>Optical</b>				
Light transmission	ASTM D 1003	3.2mm	%	92
Reflective Index	ASTM D 542	N <sub>n</sub> @23°C	---	1.49
<b>Mechanical</b>				
Tensile modulus	ISO 527-1 and ISO 527-2	1mm/min	Mpa	(3300)
Tensile strength at yield		50mm/min	Mpa	70
Tensile strain at yield		50mm/min	%	(5)
Nominal tensile strain at break		50mm/min	%	---
Flexural modulus	ISO 178	2mm/min	Mpa	3200
Flexural strength	ISO 178	2mm/min	Mpa	103
Charpy impact strength	ISO 179	Unnoched	kJ/m <sup>2</sup>	---
	ISO 179	Noched	kJ/m <sup>2</sup>	1.2
Rockwell hardness	ISO 2039-2	M scale	---	93
<b>Thermal</b>				
Heat deflection temperature	ASTM D648	1820kPa	°C	102
		450MPa	°C	---
Vicat softening point	ASTM D1525	(Rate A;1kg)	°C	104
Melt volume flow rate	ISO 1133	230°C , 37.3N	g/10min	(10)
Coefficient of linear expansion	ISO 11359-2	Parallel	x10 <sup>-4</sup> /k	0.7
		Vertical	x10 <sup>-4</sup> /k	0.7
<b>Electrical</b>				
Surface resistivity	IEC 60093	---	Ω	>10 <sup>16</sup>
Volume resistivity	IEC 60093	---	Ω m	>10 <sup>13</sup>
Withstand voltage	IEC 60243-1	short time test	MV/m	(20)
Specific Inductive capacity	IEC 60250	100Hz	---	(3.7)
		1MHz	---	3
Dielectric loss tangent	IEC 60250	100Hz	x10 <sup>-4</sup>	10
		1MHz	x10 <sup>-4</sup>	90
Tracking resistance	IEC 60112	---	---	225
<b>Other</b>				
Density	ISO 1183	---	kg/m <sup>3</sup>	1190
Water absorption at 23 °C	ISO 62	In water 24h	%	0.3
Flammability	UL94	---	class	HB

\* Values reported are typical and should not be used for specification purpose.

### < Attention in the handling >

- The data on this document is the characteristics combining ILU-008 and CL-L251, L233, L330, L340 series.
- ILU-006 is the lens for CL-L251, L233, L330 and L340 series.

Discussion will be needed separately if you combine it with LEDs other than these.

CITIZEN ELECTRONICS CO.,LTD.

Ref.CE-P957 04/11