

# ILU - 006 series

## Appearance



Material : PMMA

## Application

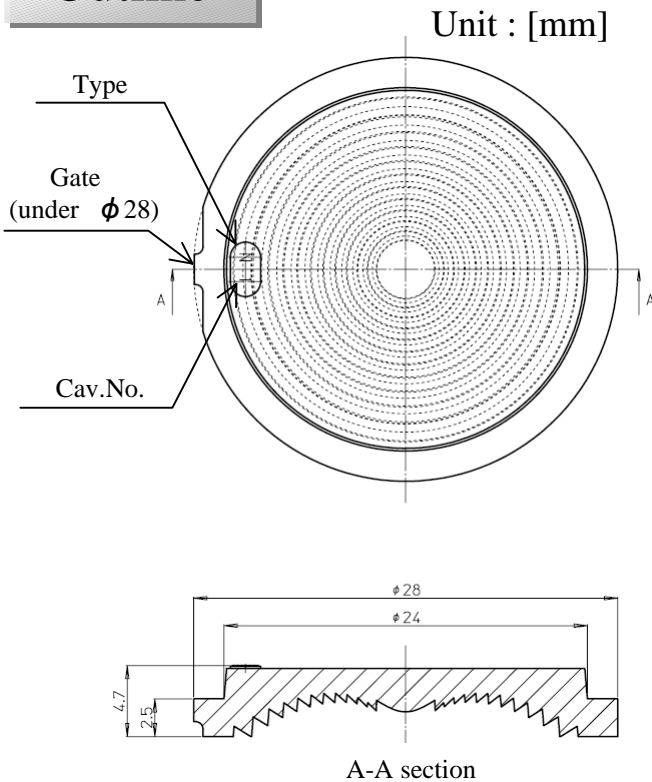
LED Bulb(MR16,GU10,etc...)  
LED Down-light , Street Light, others ...

### Recommended LED

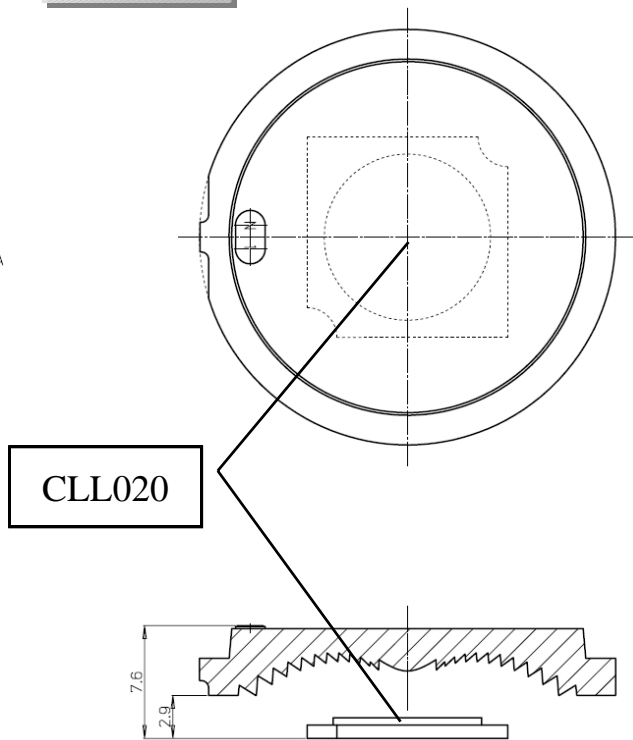
CLL020 series



## Outline



## Layout



### < Attention in the handling >

- To fix the lens, the use of its flange with thickness of 2.5mm is recommended.
- The lens should be placed against the LED "CLL020" as shown in the figure above.
- The specification is subject to change without notice..
- The prism shape is not accurate.
- Do not use this product under the temperature condition exceeding 85°C.

CITIZEN ELECTRONICS CO.,LTD.

Ref.CE-P1803 02/12

# ILU - 006 series

## Luminous intensity

## With CLL020 Series

LED		Lens		ILU-006-N	ILU-006-M	ILU-006-W
LED part code	CCT	Ra	Lumen	FWHM [34deg]	FWHM [40deg]	FWHM [45deg]
CLL020-1202A1-273M1A2	2700[K]	80 Min	155[lm]	266[cd]	214[cd]	177[cd]
			430[lm]	739[cd]	595[cd]	491[cd]
			770[lm]	1324[cd]	1065[cd]	879[cd]
CLL020-1202A1-303M1A2	3000[K]	80 Min	165[lm]	284[cd]	228[cd]	188[cd]
			460[lm]	791[cd]	636[cd]	525[cd]
			825[lm]	1418[cd]	1141[cd]	942[cd]
CLL020-1202A1-353M1A2	3500[K]	80 Min	170[lm]	292[cd]	235[cd]	194[cd]
			465[lm]	799[cd]	643[cd]	531[cd]
			830[lm]	1427[cd]	1148[cd]	948[cd]
CLL020-1202A1-403M1A2	4000[K]	80 Min	170[lm]	292[cd]	235[cd]	194[cd]
			470[lm]	808[cd]	650[cd]	537[cd]
			840[lm]	1444[cd]	1162[cd]	959[cd]
CLL020-1202A1-503M1A2	5000[K]	80 Min	175[lm]	284[cd]	228[cd]	188[cd]
			490[lm]	791[cd]	636[cd]	525[cd]
			870[lm]	1418[cd]	1141[cd]	942[cd]
CLL020-1202A1-50KL1A1	5000[K]	65 Typ	205[lm]	284[cd]	228[cd]	188[cd]
			570[lm]	791[cd]	636[cd]	525[cd]
			1020[lm]	1418[cd]	1141[cd]	942[cd]

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# ILU - 006 series

## Luminous intensity

## With CLL020 Series

LED		Lens		ILU-006-N	ILU-006-M	ILU-006-W
LED part code	CCT	Ra	Lumen	FWHM [34deg]	FWHM [40deg]	FWHM [45deg]
CLL020-1203A1-273M1A2	2700[K]	80 Min	230[lm]	395[cd]	318[cd]	263[cd]
			635[lm]	1092[cd]	878[cd]	725[cd]
			1130[lm]	1943[cd]	1563[cd]	1290[cd]
CLL020-1203A1-303M1A2	3000[K]	80 Min	245[lm]	421[cd]	339[cd]	280[cd]
			675[lm]	1160[cd]	934[cd]	771[cd]
			1210[lm]	2080[cd]	1674[cd]	1382[cd]
CLL020-1203A1-353M1A2	3500[K]	80 Min	245[lm]	421[cd]	339[cd]	280[cd]
			685[lm]	1178[cd]	948[cd]	782[cd]
			1220[lm]	2097[cd]	1688[cd]	1393[cd]
CLL020-1203A1-403M1A2	4000[K]	80 Min	250[lm]	430[cd]	346[cd]	285[cd]
			690[lm]	1186[cd]	955[cd]	788[cd]
			1235[lm]	2123[cd]	1709[cd]	1410[cd]
CLL020-1203A1-503M1A2	5000[K]	80 Min	260[lm]	447[cd]	360[cd]	297[cd]
			715[lm]	1229[cd]	989[cd]	816[cd]
			1280[lm]	2200[cd]	1771[cd]	1462[cd]
CLL020-1203A1-50KL1A1	5000[K]	65 Typ	300[lm]	516[cd]	415[cd]	343[cd]
			835[lm]	1435[cd]	1155[cd]	953[cd]
			1495[lm]	2570[cd]	2068[cd]	1707[cd]

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# ILU - 006 series

## Luminous intensity

## With CLL020 Series

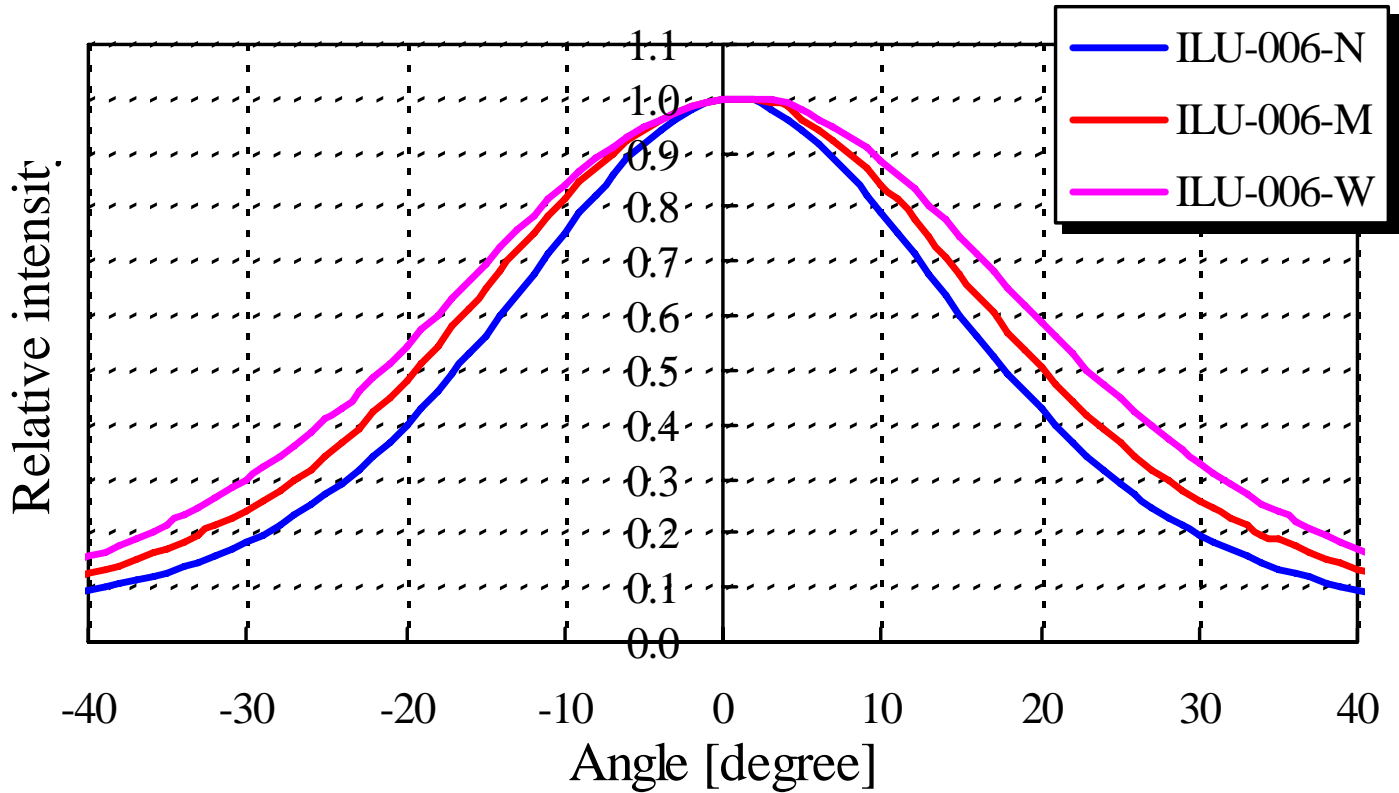
LED		Lens		ILU-006-N	ILU-006-M	ILU-006-W
LED part code	CCT	Ra	Lumen	FWHM [34deg]	FWHM [40deg]	FWHM [45deg]
CLL020-1204A1-273M1A2	2700[K]	80 Min	300[lm]	516[cd]	415[cd]	343[cd]
			835[lm]	1435[cd]	1155[cd]	953[cd]
			1490[lm]	2561[cd]	2061[cd]	1701[cd]
CLL020-1204A1-303M1A2	3000[K]	80 Min	320[lm]	550[cd]	443[cd]	365[cd]
			890[lm]	1530[cd]	1231[cd]	1016[cd]
			1595[lm]	2742[cd]	2207[cd]	1821[cd]
CLL020-1204A1-353M1A2	3500[K]	80 Min	325[lm]	559[cd]	450[cd]	371[cd]
			900[lm]	1547[cd]	1245[cd]	1028[cd]
			1610[lm]	2768[cd]	2227[cd]	1838[cd]
CLL020-1204A1-403M1A2	4000[K]	80 Min	330[lm]	567[cd]	457[cd]	377[cd]
			910[lm]	1564[cd]	1259[cd]	1039[cd]
			1625[lm]	2794[cd]	2248[cd]	1856[cd]
CLL020-1204A1-503M1A2	5000[K]	80 Min	340[lm]	584[cd]	470[cd]	388[cd]
			945[lm]	1625[cd]	1307[cd]	1079[cd]
			1685[lm]	2897[cd]	2331[cd]	1924[cd]
CLL020-1204A1-50KL1A1	5000[K]	65 Typ	400[lm]	688[cd]	553[cd]	457[cd]
			1105[lm]	1900[cd]	1529[cd]	1262[cd]
			1970[lm]	3387[cd]	2725[cd]	2249[cd]

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# ILU - 006 series

## Directivity



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# ILU - 006 series

## Physical properties

Property	Test Method	Condition	Unit	Value
<b>Optical</b>				
Light transmission	ASTM D 1003	3.2mm	%	92
Reflectiv Index	ASTM D 542	ND@23°C	---	1.49
<b>Mechanical</b>				
Tensile modulus	ASTM D 638		MPa	3100
Tensile strength at yield	ASTM D 790	Max.	MPa	70
Nominal tensile strain at break	ASTM D 638	---	%	6
Flexual modulus	ASTM D 790	---	MPa	3200
Flexual strength	ASTM D 790	---	MPa	103
Charpy impact strength	ASTM D 256			7.5
Izod impact strength	ASTM D 256	Noched (23°C)	kJ/m <sup>2</sup>	1.2
Rockwell hardness	ASTM D 785	M scale	---	93
<b>Thermal</b>				
Heat deflection temperature	ASTM D 648	1820kPa	°C	102
Vicat softening point	ASTM D 1525	(Rate A;1kg)	°C	111
		(Rate A;5kg)	°C	104
Melt volume flow rate	ASTM D 1238	---	g/10min	3.7
Coeffient of linear expansion	ASTM D 696	---	× 10 <sup>-5</sup>	5.8
<b>Electrical</b>				
Surface resistivity	ASTM D 257	---	Ω /sq	1.00E+18
Volume resistivity	ASTM D 257	---	Ω cm	1.00E+18
Specific Inductive capacity	ASTM D 150	60cycles	---	3.7
		1,000,000cycles	---	2.2
Dielectric strength	ASTM D 149	volts/mil		500
Dielectric loss Factor	ASTM D 150	60cycles		0.19
		1,000,000cycles		0.007
Tracking resistance	ASTM D 405	---	seconds	no track
<b>Other</b>				
Density	ASTM D 792	---	g/cm <sup>3</sup>	1.19
Water absorption	ASTM D 570	---	%	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-006 and CLL020 series.
- ILU-006 is the lens for CLL020 series.
- Discussion will be needed separately if you combine it with LEDs other than these.
- The specification is subject to change without notice.
- Do not use this product under the temperature condition exceeding 85°C.

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Ref.CE-P1803 02/12