

# Infrared LED



L12771 series

**Peak emission wavelength: 1.3  $\mu\text{m}$**

The L12771 series is a long wavelength LED using InGaAs material. Peak emission wavelength is 1.3  $\mu\text{m}$ , making the L12771 series suitable as a reference light source for detection of moisture.

## Features

- Peak emission wavelength: 1.3  $\mu\text{m}$
- High radiant output power

## Applications

- Reference light source for moisture meter
- Light source for detecting photosensitive material

## Absolute maximum ratings (Ta=25 °C unless otherwise noted)

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	VR		1	V
Forward current	IF		80	mA
Forward current derating rate	-	Ta > 25 °C	1.1	mA/°C
Pulse forward current	IFP	Pulse width=10 $\mu\text{s}$ Duty ratio=1%	1.0	A
Pulse forward current derating rate	-	Ta > 25 °C	13	mA/°C
Power dissipation	P		150	mW
Operating temperature	Topr	No condensation	-30 to +85	°C
Storage temperature	Tstg	No condensation	-40 to +100	°C
Soldering conditions	-		260 °C or less, within 5 s, at least 1 mm away from lead roots	-

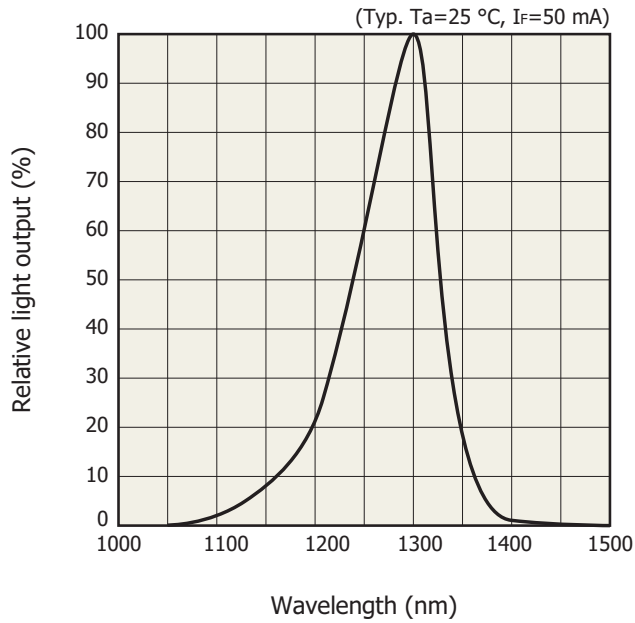
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

## Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	L12771			L12771-01			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Peak emission wavelength	$\lambda_p$	IF=50 mA	1.25	1.3	1.35	1.25	1.3	1.35	$\mu\text{m}$
Spectral half width	$\Delta\lambda$	IF=50 mA	-	90	140	-	90	140	nm
Radiant flux	$\phi_e$	IF=50 mA	2.0	2.8	-	2.2	3.1	-	mW
Forward voltage	VF	IF=50 mA	-	1.0	1.5	-	1.0	1.5	V
Pulse forward voltage	VFP	IF=1 A	-	1.9	2.8	-	1.9	2.8	V
Reverse current	IR	VR=1 V	-	-	10	-	-	10	$\mu\text{A}$
Cutoff frequency*1	fc	IF=50 mA $\pm$ 10 mAp-p	10	15	-	10	15	-	MHz

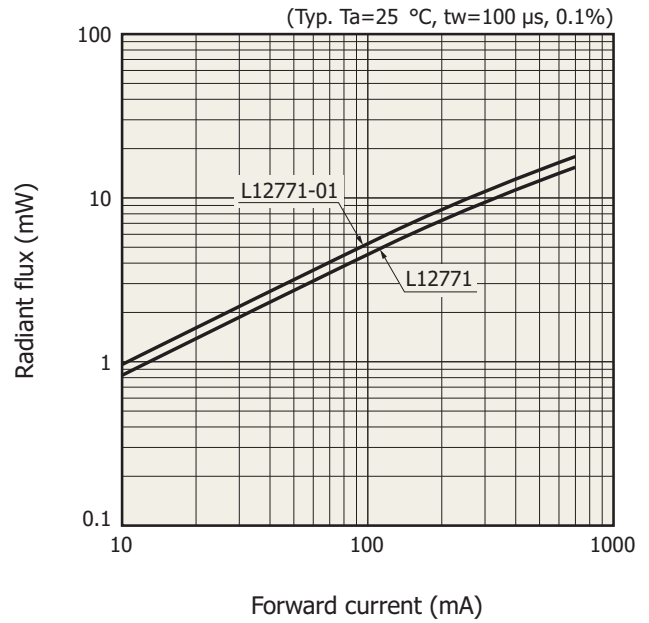
\*1: Frequency at which the light output decreases by 3 dB from the light output at 100 kHz

**Emission spectrum**



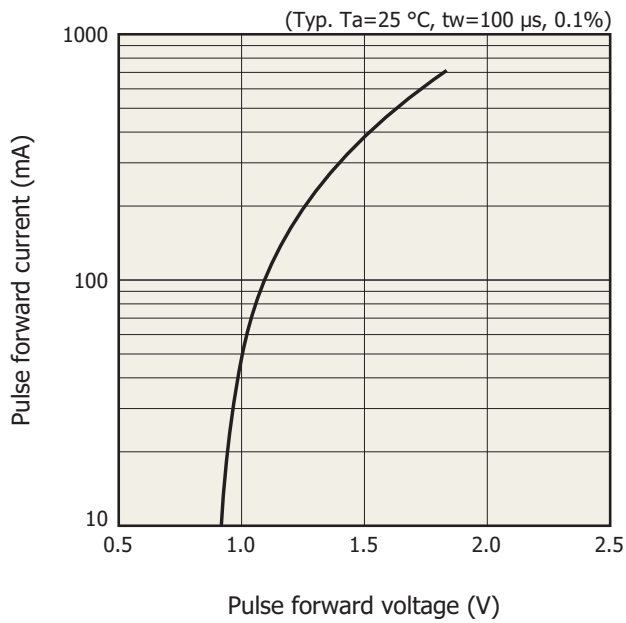
KLEDB0332EA

**Radiant flux vs. forward current**



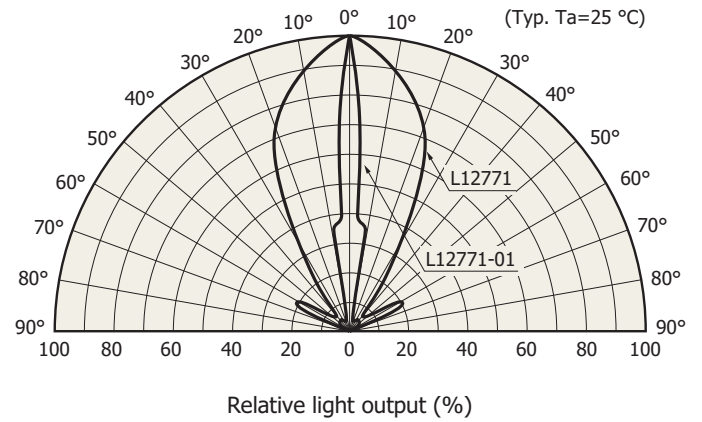
KLEDB0389EA

**Pulse forward current vs. pulse forward voltage**



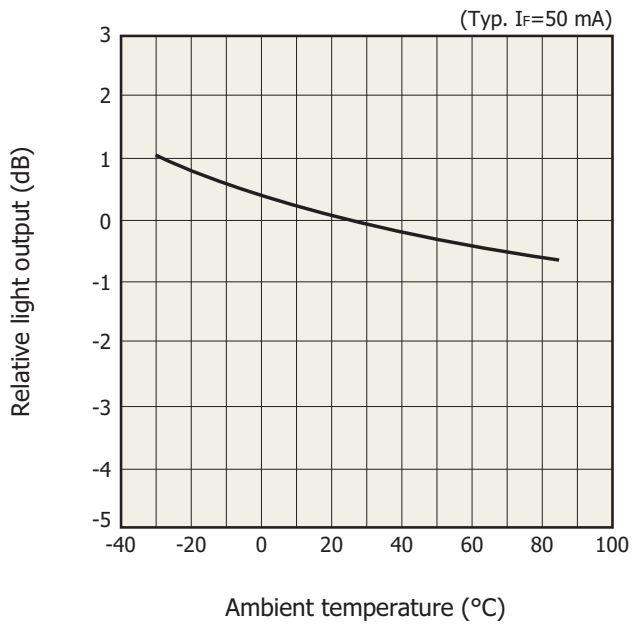
KLEDB0390EA

**Directivity**

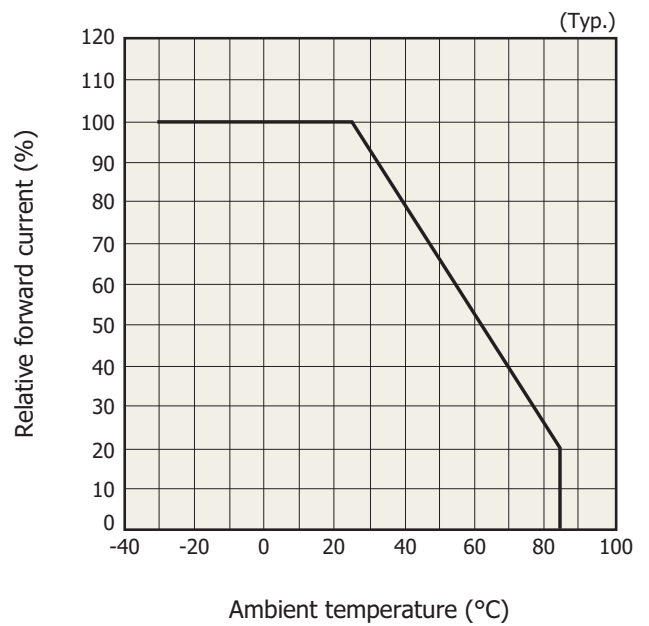


KLEDB0391EA

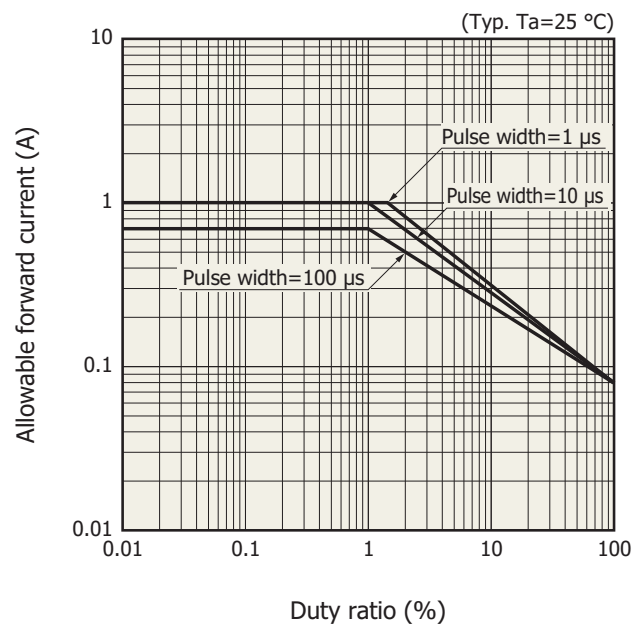
Light output vs. ambient temperature



Allowable forward current vs. ambient temperature

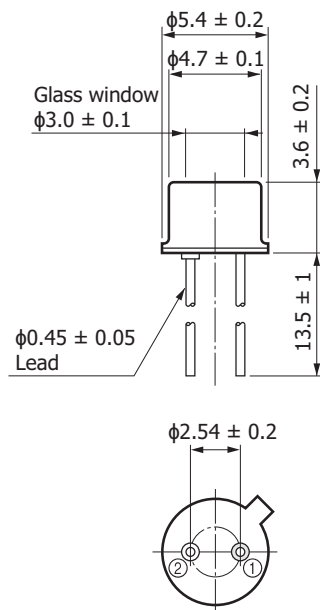


Allowable forward current vs. duty ratio



### Dimensional outline (unit: mm)

L12771



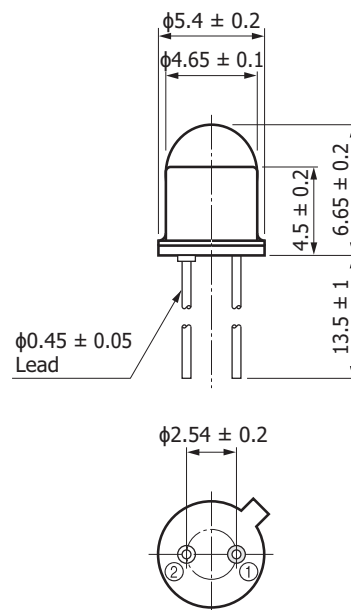
Common to case



Standard packing type:  
Paper box (200 pieces/box)

KLEDA0090EB

L12771-01



Common to case



Standard packing type:  
Paper box (200 pieces/box)

KLEDA0091EB

### Related information

[www.hamamatsu.com/sp/ssd/doc\\_en.html](http://www.hamamatsu.com/sp/ssd/doc_en.html)

#### Precautions

- Notice
- Metal, ceramic, plastic package / Precautions

#### Technical information

- LED / Technical information

Information described in this material is current as of April, 2014.

Product specifications are subject to change without prior notice due to improvements or other reasons. This document has been carefully prepared and the information contained is believed to be accurate. In rare cases, however, there may be inaccuracies such as text errors. Before using these products, always contact us for the delivery specification sheet to check the latest specifications.

Type numbers of products listed in the delivery specification sheets or supplied as samples may have a suffix "(X)" which means preliminary specifications or a suffix "(Z)" which means developmental specifications.

The product warranty is valid for one year after delivery and is limited to product repair or replacement for defects discovered and reported to us within that one year period. However, even if within the warranty period we accept absolutely no liability for any loss caused by natural disasters or improper product use.

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# HAMAMATSU

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