GARDASOFT
Industrial LED technology

VLL Linear LED Lights

Versatile Machine Vision illumination

High intensity IR and Visible LED Illuminator for Machine Vision applications. This lighting is particularly advantageous where the heat generated by traditional lighting is unacceptable.

- Choice of IR Wavelengths and Colours
- Flexibility in terms of Brightness, Beam Profile and Length
- Option for Liquid-Cooled operation

Multiple options for high flexibility

Utilising the latest high power LED technology available, the VLL Series Linear lights deliver controlled illumination over a defined target area. The VLL3 has options in brightness, colour, beam profile and size, allowing it to meet the demands of a huge range of Machine Vision applications.

The VLL3 features a single row of LEDs, each operating in free running mode. The housings are finished in black, IP67 rated and designed for optimised thermal performance for the coolest running.

Very low maintenance

Traditional types of lighting can be inconvenient and costly to repair or replace. LED technology has a much longer lifetime than traditional filament bulb solutions, making it an ideal choice for ease of use and reduced maintenance.

IR Wavelengths and Colours

The VLL3 lights are available in a choice of White, Colours and Infrared Wavelengths. Multiple Beam Profiles are available, with 30° FWHM and 12° FWHM as standard.

Constant current drive

The VLL Series responds to the drive current that the user supplies, whether constant or pulsed. This current can be provided by Gardasoft's Lighting Controllers which give a very stable output and allow high brightness pulsing or dynamic intensity control (refer to the RT Series Lighting Controllers on www.gardasoft.com)

Uniformity of illumination

The LEDs are arranged in strings that are 120mm long; each string can be independently controlled. This allows the user to apply profile correction in order to optimise uniformity of illumination along the entire length of the light.

Cooling formats

The VLL3 lights are offered with two formats for cooling; the standard product uses natural convection, but liquid cooling can be specified. Gardasoft Vision are able to advise on suitable Gardasoft chillers and coolers for the liquid cooled configurations.

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Data sheet
VLL3 - v002

SPECIFICATIONS

Parameter	VLL3 specification
Wavelength	White, Red, Amber, Blue, Green, Yellow, 740nm, 850nm, 940nm
Optical beam profile	30° FWHM 12° FWHM Other profiles can be manufactured to order
Power supply	See section 'LED Drive Considerations'
Dimensions (excluding power connection)	L1: 81mm wide, 68mm high, 327mm long L2: 81mm wide, 68mm high, 604mm long L3: 81mm wide, 68mm high, 885mm long L4: 81mm wide, 68mm high, 1165mm long
Power connector fitted to light	16 way M16 connector with male contacts
Start-up temperature	0°C to +40°C
Operating temperature	-20°C to +55°C
Storage temperature	-20°C to +85°C
Weight	L1: 1.5kg L2: 2.75kg L3: 4.25kg L4: 5.75kg
Environmental protection	IP67
Lifetime	>100,000hrs

Notes: **1.** The light is available in four lengths **2.** End of life defined at 70% brightness

Colour	Peak wavelength	Max Luminous Intensity at 0.5m (Measured at centre of light)
White	Cool white (6500k typical)	35 kLux
Green	530nm	37 W/m²
Red	627nm	81 W/m²
Blue	470nm	95 W/m²
IR	850nm	102 W/m²

LED Drive considerations The table below shows the total permissible constant current drive into the light.

Light length	Max total current drive for natural convection [1]	Total current drive for Liquid-Cooled option
VLL3-288	1.00A	2.0A
VLL3-565	2.00A	4.0A
VLL3-846	3.00A	6.0A
VLL3-1126	4.00A	8.0A

LC options produce approximately double the brightness of natural convection units

[1] Case temperature rise ≤ 23°C above ambient

ORDERING INFORMATION

VLL Part Number Format **VLL3-VVV-WW-XXX-ZZ-FD**

(FD)
FD=Fixed diffuser option

Cooling Type
no suffix = natural connection
LC = liquid cooling

Colour/Wavelength
W = cool white
R = red
A = amber
B = blue
G = green
Y = yellow
740, 850, 940 = Infrared

Length
288 = 288mm long light
565 = 565mm long light
846 = 846mm long light
1126 = 1126 mm long light

Beam Angle
12 = 12° FWHM optical beam per LED
30 = 30° FWHM optical beam per LED

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Gardasoft Vision Castle Acres Elsworth Cambridge CB23 4JQ UK
T. +44 01954 200343 F. +44 01954 204343 E. vision@gardasoft.com
gardasoft.com