



# Vision Datum

Machine Vision LED Illumination

Machine Vision  
Bar Illumination

# ViSiON DATUM LIGHTS

The Leader and Innovator in Machine Vision Lighting



## ABOUT US

Vision Datum as leading manufacturer of machine vision products in China, have almost 20 years in this industry, and the major products cover machine vision lighting / illumination, camera, lens, machine vision algorithms and storage software.

With abundant experience in industry application and scientific research, Vision Datum Machine Vision Led Illumination offer a wide range of selections, and we provide OEM / ODM customization for various lighting solutions, including but not limited to Line Scan Lights, Telecentric Lights, Ultraviolet and Infrared Lights , Waterproof and Anti-corrosion Lighs, and Multi-spectral Lights.

Vision Datum products have been exported to almost 100 countries and regions, and in thousands of projects have received countless affirmations and reputations. Vision Datum machine vision products are well-known as innovative, flexible, stable and easy to use, enabling reliable inspection in many applications.



### BRIGHTER

Up to 10X brighter than normal lighting



### BETTER

Extremely high-quality performance feedback, and the defect rate < 0.01%



### COST-COMPETITIVE

Help our customers to save > 50% cost on lighting source



### EXPERT

Leading designer and manufacturer of LED lighting solutions for any type of machine vision or automation camera application



### FLEXIBILITY

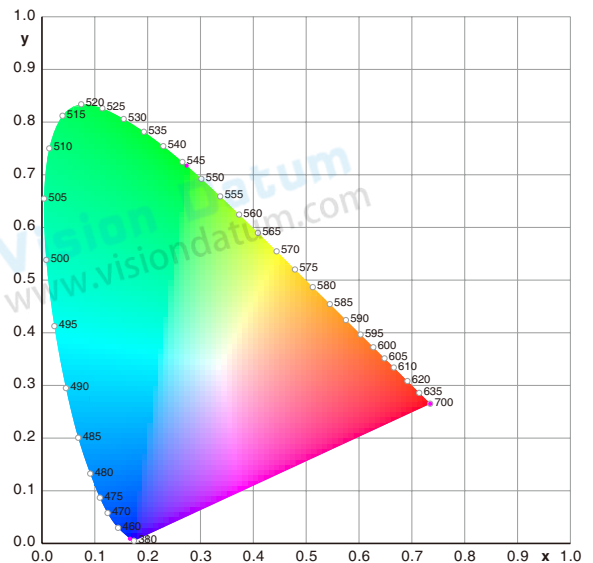
1 PC OEM / ODM available, including but not limited to IP67 / Anticorrosion requirement or IR / UV spectrum request

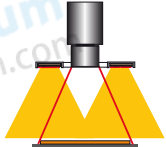
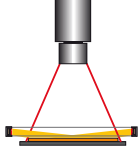
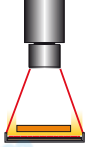
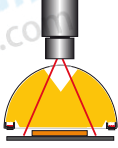
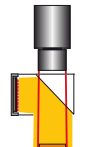
## USEFUL INFORMATION

### Color Wavelength

The durability of LEDs is on the upper area of the durability spectrum. The duration in which LED remains fully functional depends on the operating temperature and ambient temperature.

Vision Datum gives an extended guarantee on its LEDs. All housings, except some bar lights, are manufactured by high quality aluminum. Besides, the light intensity of all the lights can be regulated as well as flashed.



Illumination	Structure
<b>Bright field illumination</b> Light is aimed directly at an object, often creating distinct shadows. This type of light is effective when used on objects which requires high degrees of contrast, but will create specular reflections when used with shiny or reflective materials.	
<b>Dark field illumination</b> Light is projected at an angle to the surface, causing any variations to deflect light up into the camera, creating bright spots on a dark background or field. Nothing is seen by the vision system if there are no aberrations on the surface.	
<b>Back illumination</b> An even field of illumination is projected from behind an object, which is seen as a silhouette by the camera. Backlight is the most commonly used in taking measurements or determining part orientation.	
<b>Diffuse illumination: (Dome/Tunnel)</b> Reflected light, providing a non-directional, soft illumination free of harsh shadows, which is well suited for highly specular objects. This illumination effect is similar to the type of light found on an overcast day.	
<b>Coaxial illumination:</b> A variation of diffuse light in which light is aimed at an angled beam splitter that reflects the light down. The object is viewed from above through the beam splitter. This light type is particularly helpful on highly reflective objects or in situations where the area of inspection is obscured by shadows from its surroundings.	
Each light type has a specific purpose, but is also adaptable for a range of applications not immediately related to its function. For example, a spotlight, which provides bright field illumination, can be placed at an angle to create a dark field effect. For some applications, the best results are achieved by combining multiple light types.	

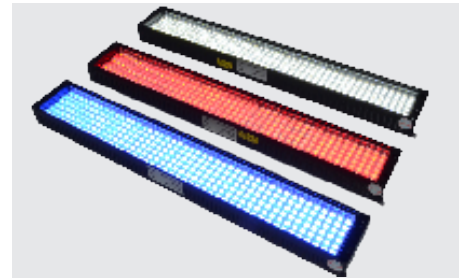
# Bar Illumination HL Series

## Features

- Standard mold and stitching installation ensured structure stability.
- Special optical lenses equipped to concentrate the ray.
- In addition to available models, the bar lights with various sizes or colours can be customized easily according to the request.

## Applications

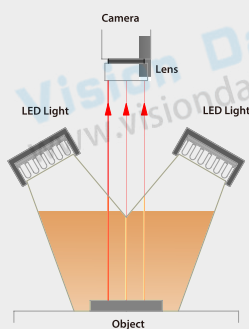
- IC marking inspection, inspection of components on glass substrates
- Dirt inspection on cap sides and inside surfaces
- Wafer appearance inspection
- Solder inspection and connector pitch inspection
- Inspection, etc. of BGA, QFP, etc.



## Detail Drawing



## Illumination Structure

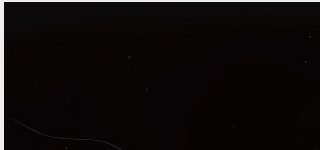


## Examples of Bar Light Images

Lights: HL7426W

### Inspect PCB printing characters.

Can check the object whose surface is smooth and glossy. Meet the needs overcome the reflective surface and highlight the surface details. The bar lights to illuminate from side can solve the light reflecting problem.



Lights: HL-8015B

### Inspect bar code on cigarette box.

The surface is very smooth and reflect light. Needs to overcome the reflective surface and highlight the details. Choose this bar light to illuminate object from side can solve can Light-reflecting.



## Common Specifications

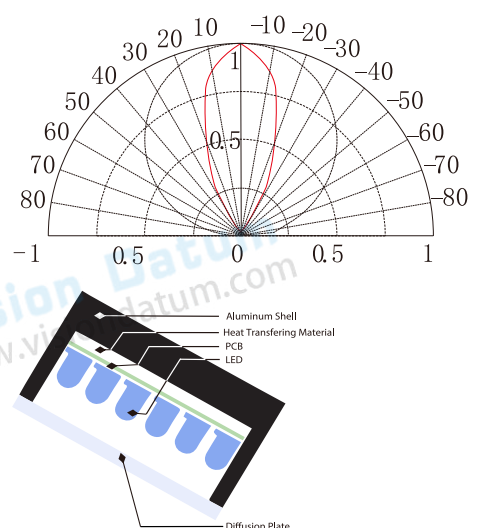
Input voltage	24 VDC
Connector	SMR-03V-B
Wavelength range	Red: 620-630nm; Blue: 465-475nm; Green: 515-530nm; White: 6000-10000K(Color Temperature)
Cable length	500 mm
Optional Accessory	Diffusion plate, Polarizing plate. DC extension cable: 1m/2m/3m
Operating environment (indoor)	Temperature: 0~40°C Humidity: 20% to 85% RH (with no condensation)
Life time	White: 30,000hrs, Red: 60,000hrs (Depends on the operating environment, not a guarantee)
Case material	Aluminum alloy, Resin

## Optional Accessory: Diffusion Plate

To be mounted in front of the LED lighting. Used to soften the lighting output, so as to reduce the glares on specular surface.



## Illuminated Angle Diagram



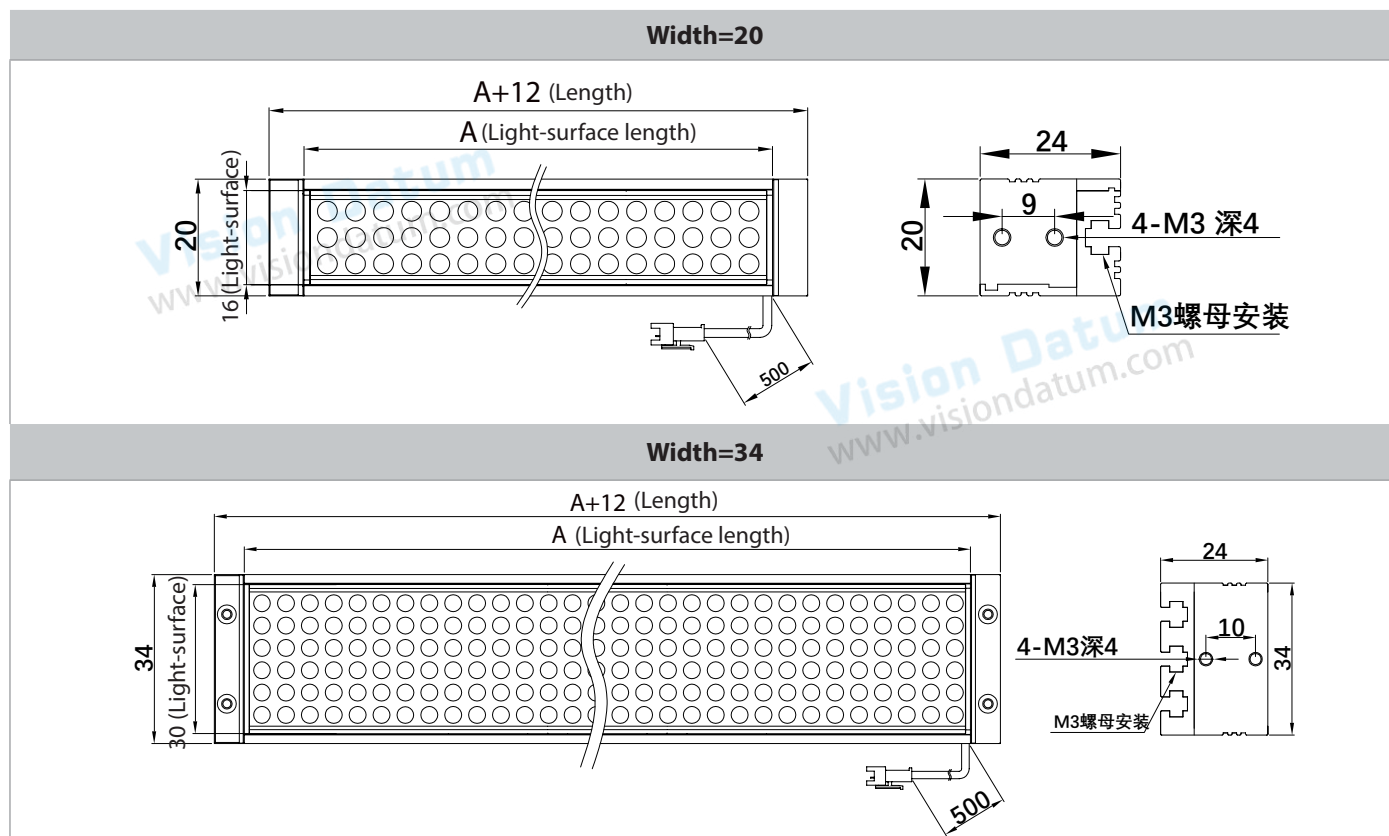
## Explanation of Model Code HL Series

VT-LT2-HL	119	16	(W/B/G/R)
Series	Emitting Length	Emitting Width	Color



Model No.	Optical spec.		Electrical specifications (GREEN / NIR / UV Accept custom)				Dimensions		
	Light Area		Number of lamp beads	Supply Voltage (v)	Power cons. (w)	Power cons. (w)	Length (mm)	Width (mm)	Height (mm)
	Length (mm)	Width (mm)							
VT-LT2-HL4016	40	16	3	24	1.3	1.7	52	20	24
VT-LT2-HL8016	80	16	3	24	2.7	6.9	92	20	24
VT-LT2-HL11916	120	16	3	24	3.5	4.5	132	20	24
VT-LT2-HL15816	160	16	3	24	5.5	7.0	172	20	24
VT-LT2-HL19716	197	16	3	24	6.0	7.5	209	20	24
VT-LT2-HL7430	74	30	6	24	6.6	12.1	86	34	24
VT-LT2-HL8630	86	30	6	24	2.6	4.4	98	34	24
VT-LT2-HL9830	98	30	6	24	3.0	5.0	110	34	24
VT-LT2-HL14630	146	30	6	24	3.5	5.8	158	34	24
VT-LT3-HL15030	150	30	6	24	5.2	8.7	162	34	24
VT-LT2-HL17030	170	30	6	24	6.1	10.2	182	34	24
VT-LT2-HL18030	180	30	6	24	6.8	11.5	192	34	24
VT-LT2-HL19430	194	30	6	24	7.0	12.1	206	34	24
VT-LT2-HL21830	218	30	6	24	7.8	13.7	230	34	24
VT-LT2-HL26630	266	30	6	24	9.6	16.7	278	34	24
VT-LT2-HL29030	290	30	6	24	10.5	18.2	302	34	24
VT-LT2-HL38630	386	30	6	24	14.6	25.3	398	34	24
VT-LT2-HL43430	434	30	6	24	16.4	28.5	446	34	24
VT-LT2-HL57830	578	30	6	24	21.9	38.0	590	34	24

## Dimension



# Overview

## Light Controller Collection



Model	Drive Mode	Input Voltage	Output Voltage	Power	Output Current	Channel	Output Port	Adapt to line light
<b>Digital Controller</b>								
VT-LT4-0506PWDC-2	Constant Current	88V-264V	5V	Total:6W/Single :3W Expandable: Total:12W/Single:6W	/	2	SMP-03V	
VT-LT4-2420PWDC-2	Constant Voltage	88V-264V	24V	Total:20W Single:20W	/	2	SMP-03V	
VT-LT4-2460PWDC-4	Constant Voltage	88V-264V	24V	Total:60W Single:25W	/	4	SMP-03V	
VT-LT4-24150PWDC-4	Constant Voltage	88V-264V	24V	Total:150W Single:70W	/	4	SMP-03V	
VT-LT3-24240PWDC-2	Constant Current	100V-120V(Ver.A) 200V-240V(Ver.B)	24V	240W	Total:10A Single:10A	2	19M-5	✓
VT-LT3-24500PWDC-2	Constant Voltage	100V-240V	24V	480W	Total:20A Single:light 9A, fan 1A	2	19M-2E	
VT-LT4-48300PWDC-1	Constant Current	90V-264V	48V	300W	0-6A	1	-	
<b>Stroboscopic Controller (With Brightening Module)</b>								
VT-LT3-PLU24120-4	Constant Voltage	100V-240V	48V	120W	10A(Instantaneous Value)	4	SMP-03V-BC	
VT-LT3-PLU24200-2	Constant Voltage	100V-240V	48V	200W	50A(Instantaneous Value)	2	12M-2	
VT-LT3-PLU24200-4	Constant Voltage	100V-240V	48V	200W	25A(Instantaneous Value)	4	SMP-03V-BC	
<b>Line Source Stroboscopic Controller (With Brightening Module)</b>								
VT-LT3-PLU481000LI-6	Constant Voltage	100V-240V	48V	1000W	Total:25A Single:25A	6	16M-2	✓
<b>Line Source Controller</b>								
VT-LT3-24300PWLIN-1	Constant Voltage	100V-240V	24V	≤ 300W	12.5A	1	AM20K4Z	✓
VT-LT3-48600PWLIN-2	Constant Current	100V-120V(Ver.A) 200V-240V(Ver.B)	48V	600W	Total:12A Single:6A	2	19M-6	✓
VT-LT3-48600PWLIN-1	Constant Current	100V-120V(Ver.A) 180V-240V(Ver.B)	48V	≤ 600W	Total:12A Single:6A	1	19M-6	✓
VT-LT3-48300PWLIN-2	Constant Current	100V-240V	48V	≤ 300W	Total:6A Single:6A	2	16M-6	✓
VT-LT3-48600PWLIN-2	Constant Current	180V-240V	48V	≤ 600W	Total:12A Single:6A	2	19M-6	✓
VT-LT3-48800PWLIN-1	Constant Current	100V-240V	48V	< 800W	14A	1	19M-6	✓
VT-LT3-48800PWLIN-2	Constant Current	100V-240V	48V	≤ 800W /Single ≤ 400W	14A	2	19M-6	✓
VT-LT3-481200PWLIN-1	Constant Current	100V-240V	48V	≤ 1200W	Total:24A Single:12A	1	19M-6	✓
<b>Analog Controller</b>								
VT-LT4-0506PWAC-2	Constant Current	88V-264V	5V	Total:6W Single:3W	/	2	SMP-03V	
VT-LT3-2460PWAC-4	Constant Voltage	100V-240V	24V	60W	Total:2.5A Single:2.5A	4	SMP-03V-BC	

Note: Default -Ver.B version voltage

# 2024

## HOT PRODUCTS

### Infrared Series Camera

- ◇ Near-Infrared(**NIR**) Industrial Cameras: 300-1100nm
- ◇ Short-Wave(**SWIR**) Industrial Cameras: 400-1800nm
- ◇ Cooled Mid-Wave Infrared(**MWIR**) Cameras: 1500-5200nm
- ◇ Long-Wave Infrared(**LWIR**) Industrial Cameras: 8000-14000nm



NIR



SWIR



MWIR



LWIR

### High-Speed Camera

- ◇ 10GigE, SDI
- ◇ 1000 ~ 1000000 FPS



iSpeedy SE Series •



• iSpeedy Series

# Vision And More Available

让工业更智能，让视觉更简单！



SWIR Camera  
Industrial Camera



Macro Lens  
Industrial Lens



Microscope



System Solution  
No-programming Software



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