



CONTRASTECH

Machine Vision LED Illumination

Machine Vision

Bottom Flat Backlight Illumination

CONTRAST^{TECH} LIGHTS

The Leader and Innovator in Machine Vision Lighting



ABOUT US

Contrasttech 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, Contrasttech 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.

Contrasttech products have been exported to almost 100 countries and regions, and in thousands of projects have received countless affirmations and reputations. Contrasttech 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

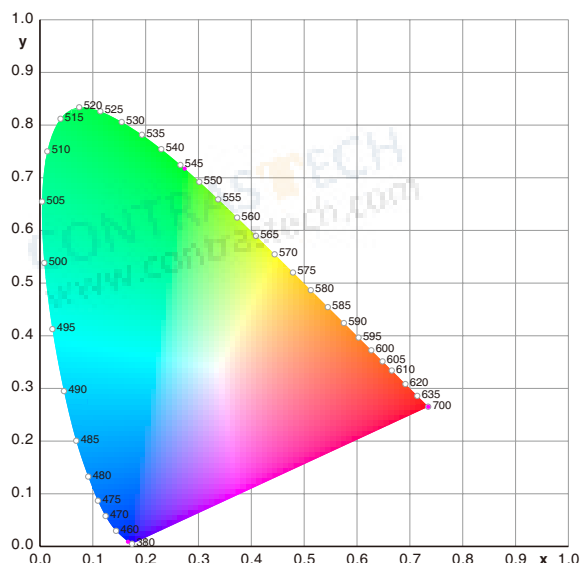
1 PC OEM / ODM available, including but not limited to IP67 / Anticorrosion requirement or IR / UV spectrum request

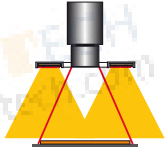
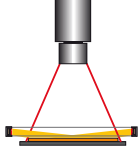
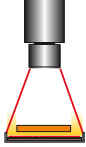
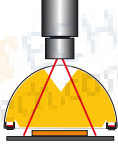
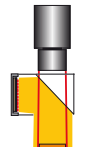
USEFUL INFORMATION

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
Bright field illumination 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.	
Dark field illumination 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.	
Back illumination 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.	
Diffuse illumination: (Dome/Tunnel) 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.	
Coaxial illumination: 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.	

Bottom Flat Backlight Illumination

BF Series

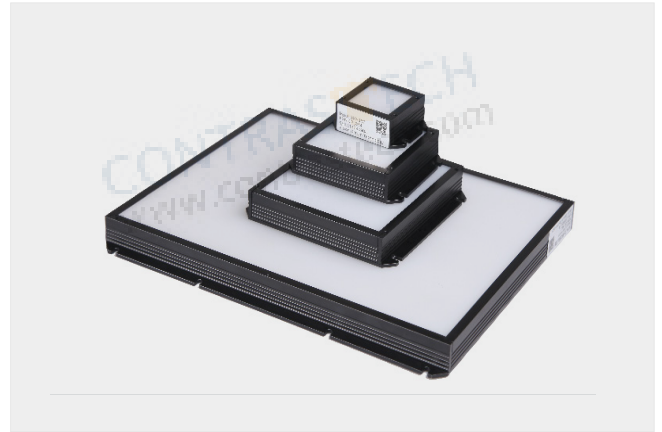
Flat lights provide area illumination with LED beads distributed on the bottom.

Features

- It provide diffused illumination from a flat emitting surface.
- It achieves high brightness with vast amount, high density SMD LED.

Applications

- Dimension measuring, visual inspection.
- Liquid level inspection, pinhole inspection, and burr inspection for metal parts, etc..



Light from the LEDs that are distributed on the bottom of the diffussion plate passes through the plate to produce uniform illumination.

Examples of Bottom Flat Backlights Images

Lights: BF110110R

Imaging of wheel gear outline.

Illuminated by flat lights, the outline can be highlighted clearly. Easy to check location. The red flat back lights can provide the strong penetration.

Lights: BF5151R

Imaging of FPC circuit.

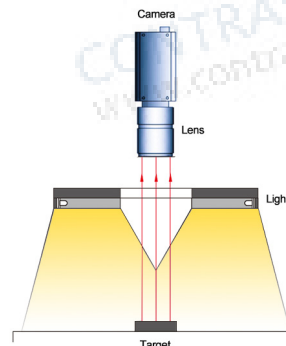
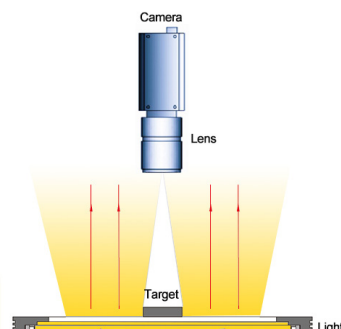
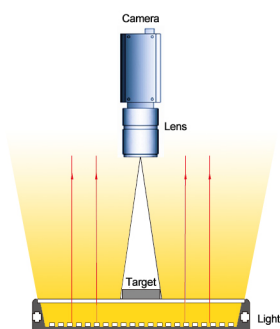
Since the light penetration ability is different between PCB's copper line and its substrate. By illuminating from back, the copper line's precise position can be distinguished from substrate.

Lights: BF7070R

Imaging of connector pins for space measurement

Inspect the flatness and space between pins, can show each pin's peak height and the space between pins under the irradiation of back lights.

Illumination Structure



Explanation of Model Code

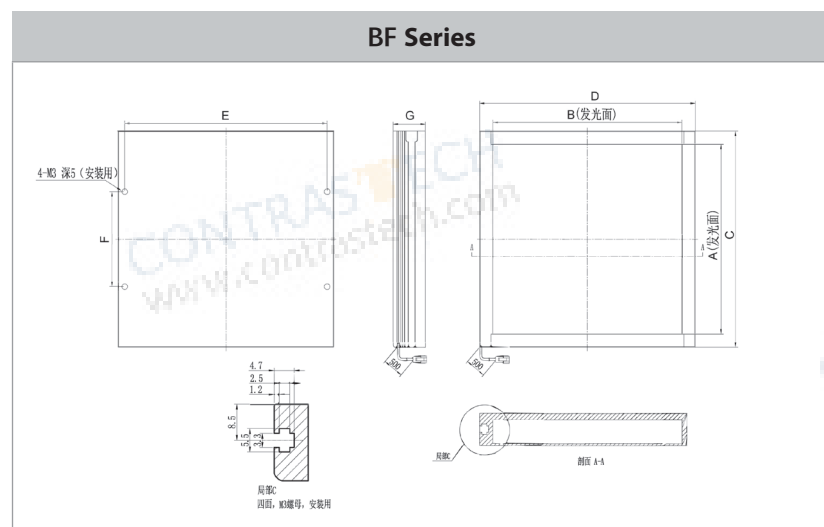
VT-LT2-BF	110	110	(W/B/G/R)
Series	Emitting Length	Emitting Width	Color

Common Specifications

Input voltage	24 VDC
Wavelength range	Red: 620-630nm; Blue: 460-475nm; Green: 520-530nm;
Color temperature (white)	5800-7500K
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 gurantee)
Case material	Aluminum alloy, Resin

	Optical spec.		Working Distance	Electrical specifications (GREEN / NIR / UV Accept custom)			Dimensions		
Model No.	Light Area		Recommended WD (mm)	Supply Voltage (v)	Power cons. (w)	Power cons. (w)	Length (mm)	Width (mm)	Height (mm)
	Length (mm)	Width (mm)							
VT-LT2-BF2727	27	27	30-100	24	1.1	2.8	41	41	17
VT-LT2-BF4335	43	35	30-100	24	1.9	2.8	57	49	17
VT-LT2-BF5050	50	50	30-100	24	3.0	4.5	64	64	17
VT-LT2-BF6360	63	60	30-100	24	4.1	5.2	77	74	17
VT-LT2-BF8375	83	75	30-100	24	5.5	5.1	97	89	17
VT-LT2-BF100100	100	100	30-100	24	9.5	10.0	114	114	17
VT-LT2-BF140105	140	105	30-100	24	13.8	13.9	154	119	17
VT-LT2-BF160120	160	120	30-100	24	16.6	17.4	174	134	17
VT-LT2-BF20050	200	50	30-100	24	9.9	20.0	214	64	17
VT-LT2-BF200150	200	150	30-100	24	28.8	30.2	214	164	17
VT-LT2-BF211200	211	200	30-100	24	24.2	24.2	225	214	17
VT-LT2-BF224170	224	170	30-100	24	33.7	33.7	238	184	17
VT-LT3-BF250150	250	150	0-100	24	25.2	36	264	164	19
VT-LT3-BF250250	250	250	0-100	24	45.36	64.8	264	264	19
VT-LT3-BF300200	300	200	0-150	24	40.32	50.4	314	214	19
VT-LT3-BF400300	400	300	0-150	24	80.64	100.8	414	314	22
VT-LT3-BF400350	400	350	0-200	24	80.64	110.8	414	364	22
VT-LT3-BF500400	500	400	0-200	24	144	180	520	420	34
VT-LT3-BF500500	500	500	0-200	24	/	162	560	520	33
VT-LT3-BF600400	600	400	0-200	24	172.8	216	620	420	34

Dimension (mm)



Model No.	Lighting Drawing Dimension Description and Notes						
	A	B	C	D	E	F	G
VT-LT2-BF2727	27	27	41	41	34	18	17
VT-LT2-BF4335	43	35	57	49	42	18	17
VT-LT2-BF5050	50	50	64	64	57	18	17
VT-LT2-BF6360	63	60	77	74	67	18	17
VT-LT2-BF8375	83	75	97	89	82	50	17
VT-LT2-BF100100	100	100	114	114	107	50	17
VT-LT2-BF140105	140	105	154	119	112	80	17
VT-LT2-BF160120	160	120	174	134	127	80	17
VT-LT2-BF20050	200	50	214	64	57	80	17
VT-LT2-BF200150	200	150	214	164	157	80	17
VT-LT2-BF211200	211	200	225	214	207	80	17
VT-LT2-BF224170	224	170	238	184	177	80	17
VT-LT3-BF250150	250	150	264	164	230	130	19
VT-LT3-BF250250	250	250	264	264	230	240	19
VT-LT3-BF300200	300	200	314	214	280	150	19
VT-LT3-BF400300	400	300	414	314	330	240	22
VT-LT3-BF400350	400	350	414	364	330	300	22
VT-LT3-BF500400	500	400	520	420	450	300	34
VT-LT3-BF500500	500	500	560	520	400	540	33
VT-LT3-BF600400	600	400	620	420	540	300	34

Overview

Light Controller Collection



Model	Drive Mode	Input Voltage	Output Voltage	Power	Output Current	Channel	Output Port	Adapt to line light
Digital Controller								
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	-	
Stroboscopic Controller (With Brightening Module)								
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	
Line Source Stroboscopic Controller (With Brightening Module)								
VT-LT3-PLU481000LI-6	Constant Voltage	100V-240V	48V	1000W	Total:25A Single:25A	6	16M-2	√
Line Source Controller								
VT-LT3-24300PWLI-1	Constant Voltage	100V-240V	24V	≤ 300W	12.5A	1	AM20K4Z	√
VT-LT3-48600PWLI-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	√
Analog Controller								
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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Ver.24.05