



# CONTRASTECH

Machine Vision LED Illumination

Machine Vision  
Shadowless Ring Illumination

# CONTRAST<sup>TECH</sup> LIGHTS

The Leader and Innovator in Machine Vision Lighting



## ABOUT US

Contrastech 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, Contrastech 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 Lights, and Multi-spectral Lights.

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

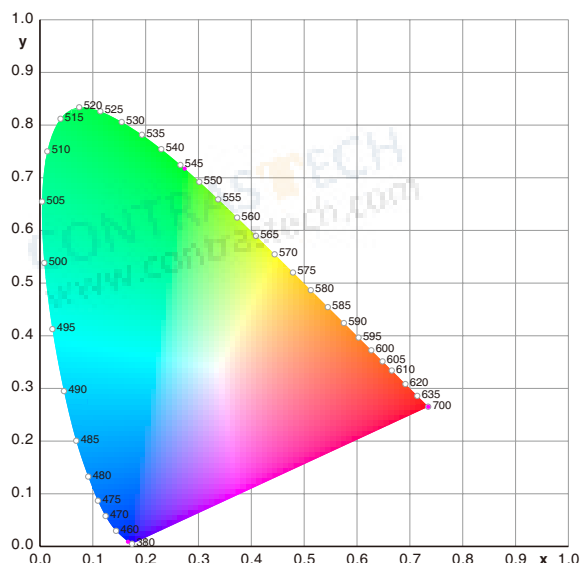
1 PC OEM / ODM available, including but not limited to IP67 / Anticorrosion requirement or IR / UV spectrum request

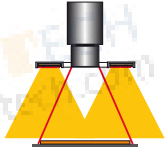
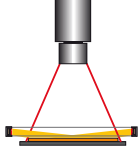
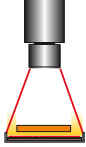
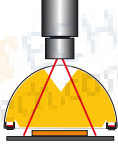
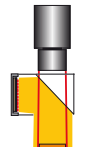
## USEFUL INFORMATION

## 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.	

# Shadowless Ring Illumination

## WR Series (Standard with diffuser panel)

Ring lights provide uniform surface illumination.

### Features

- LED beads are evenly distributed around. The light penetrate the LGP and become uniform and diffusible.
- This series are widely used in the occasion that reflective light or light spots are not welcome.

### Applications

- Check cigarette case printing
- Latness of diode pins
- Haracters on IC chips



### Examples of Shadowless Ring Light Images



Lights:WR100W

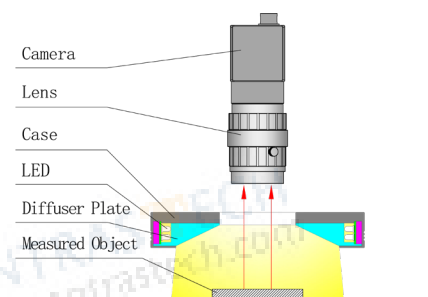
Imaging of CAN's bottom



Lights: WR48W

Imaging of soldering on plastic parts

### Illumination Structure



### Common Specifications

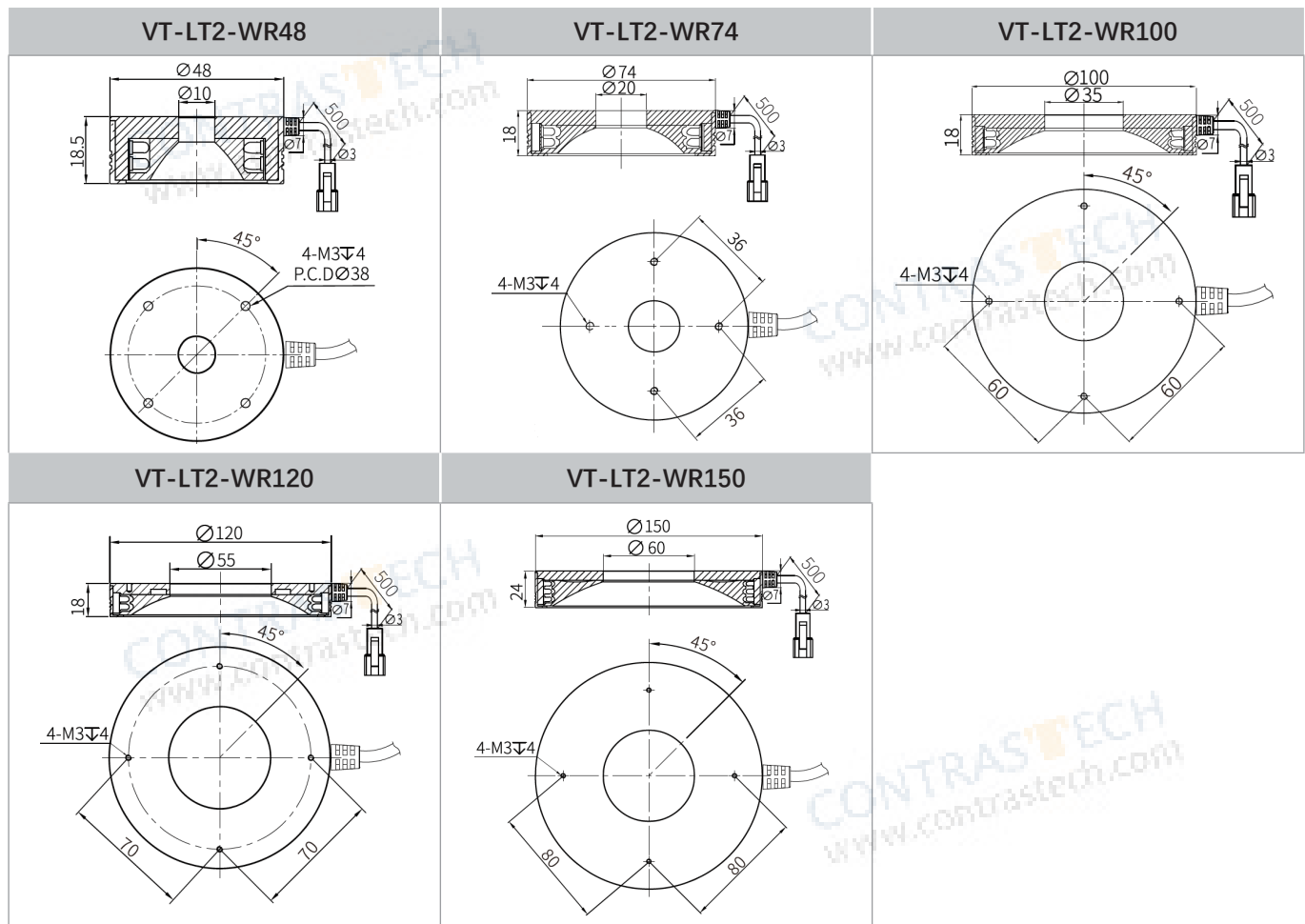
Input voltage	24 VDC
Connector	SMR-03V-B
Wavelength range	Red: 620-630nm; Blue: 460-475nm; Green: 520-530nm;
Color temperature (white)	6000-7500K
Operating environment (indoor)	Temperature: 0~40°C Humidity: 20% to 85% RH (with no condensation)
Life time	White:30,000hrs, Red: 60,000hrs (Depends on the operating environment, not a guarantee)
Case material	Aluminum alloy, Resin

### Explanation of Model Code

VT-LT2-WR	116	(W/B/R)
Series	Outer Diameter	Color

Model No.	Electrical specifications (GREEN / NIR / UV Accept custom)			Dimensions		
	Supply Voltage (v)	Power cons. (w) ●	Power cons. (w) ● ○ ●	Outer diam. (mm)	Inner diam. (mm)	Height (mm)
VT-LT2-WR48	24	2.2	3.8	48	10	18.5
VT-LT2-WR74	24	3.6	6.3	74	20	18
VT-LT2-WR100	24	7.4	9.7	100	35	18
VT-LT2-WR120	24	9.9	12.7	120	55	18
VT-LT2-WR150	24	15.0	20.2	150	60	24

### Dimension (mm)





# Shadowless Ring Illumination- Low Angle

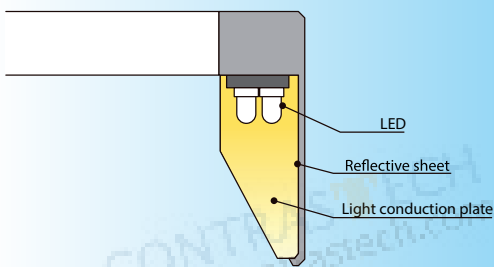
## LWR Series (Standard with diffuser panel)

Low angle ring lights provide diffused lighting.

### Features

- High density LED is distributed perpendicularly.
- Special material is used to diffuse light.
- Widespread use in inspection of object edge and scratches.

Cross-sectional View of an LWR-series Light



### Applications

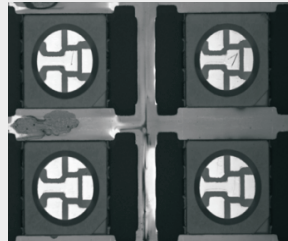
- Low angle uniform illumination and dark field lighting.
- Inspection of scratches on the workpiece.
- Plastic surface optical character recognition, capacitor character recognition.

### Examples of Shadowless Low Angle Ring Light Images



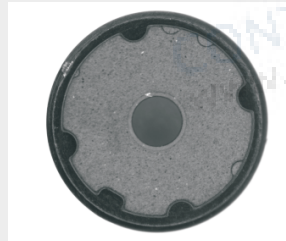
Lights: LWR50W

Imaging of characters on capacitance



Lights: LWR100W

Imaging of interior of LED

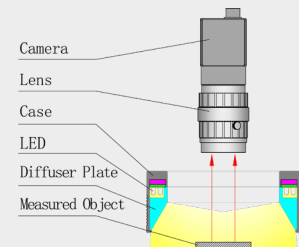


Lights: LWR180B

Imaging of rubber cushion

### Illumination Structure

The object is illuminated from a low angle by uniform diffuse light through the light conduction plate.



### Common Specifications

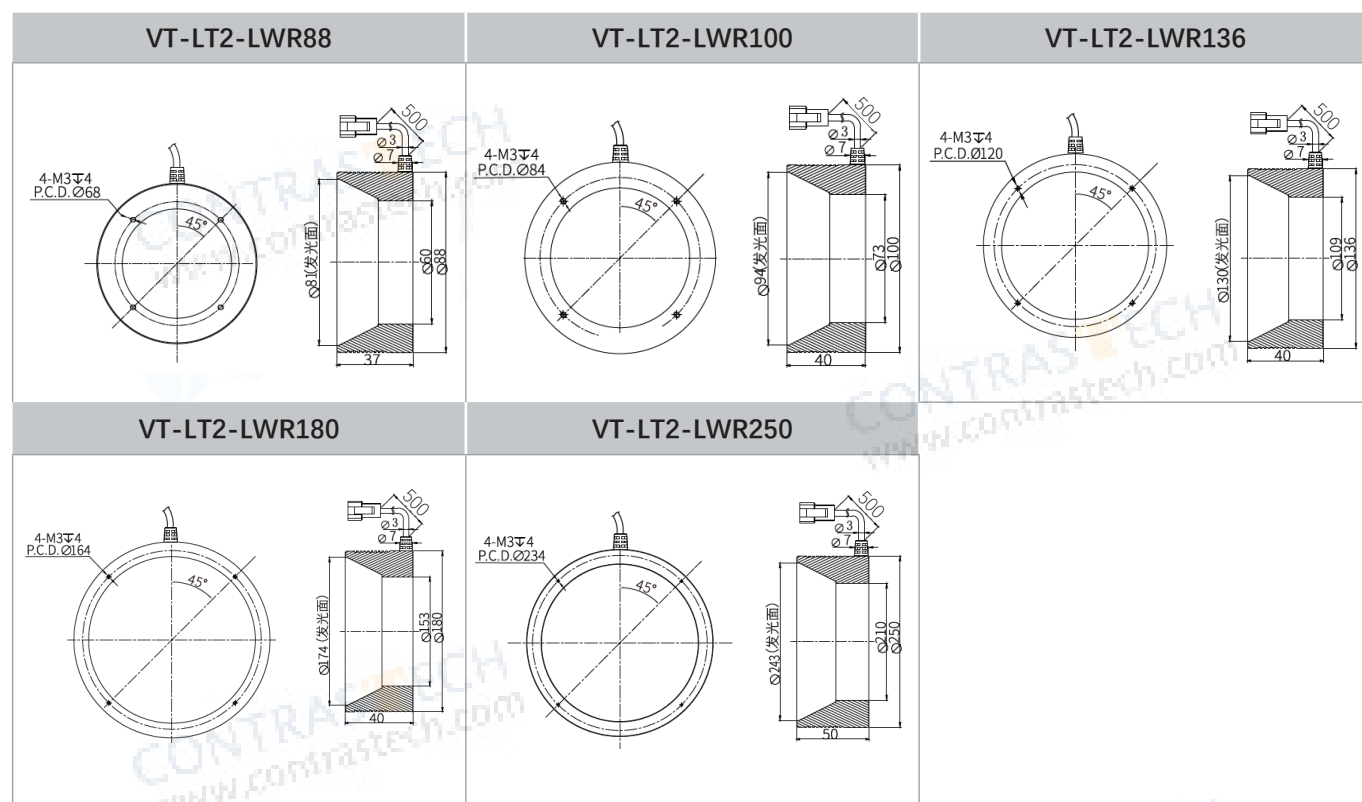
Input voltage	24 VDC
Connector	SMR-03V-B
Wavelength range	Red: 620-630nm; Blue: 460-475nm; Green: 520-530nm;
Color temperature (white)	6000-7500K
Operating environment (indoor)	Temperature: 0~40℃ Humidity: 20% to 85% RH (with no condensation)
Life time	White: 30,000hrs, Red: 60,000hrs (Depends on the operating environment, not a guarantee)
Case material	Aluminum alloy, Resin

### Explanation of Model Code

VT-LT2-LWR	116	(W/B/R)
Series	Outer Diameter	Color

Model No.	Optical spec.	Electrical specifications (GREEN / NIR / UV Accept custom)			Dimensions		
		Supply Voltage (v)	Power cons. (w) ●	Power cons. (w) ● ○ ●	Outer diam. (mm)	Inner diam. (mm)	Height (mm)
VT-LT2-LWR88	Ø81	24	4.6	7.5	88	60	37
VT-LT2-LWR100	Ø94	24	4.9	7.8	100	73	40
VT-LT2-LWR136	Ø130	24	6.6	12.4	136	109	40
VT-LT2-LWR180	Ø174	24	9.5	13.8	180	153	40
VT-LT2-LWR250	Ø243	24	13.1	32.8	250	210	50

### Dimension (mm)



# Shadowless Ring Illumination - High Angle

## GWR Series (Standard with diffuser panel)

### Features

- The lights achieve a uniform region with high luminance by using unique illumination mechanism.
- Compact design, convenient to installation.

### Applications

- Inspection of defects on unfairness specular surface, food and medicine packages, the welding points of electronic components, etc..

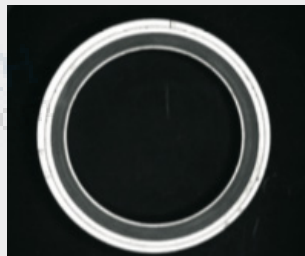


### Examples of Shadowless GWR Light Images



Lights: GWR150W

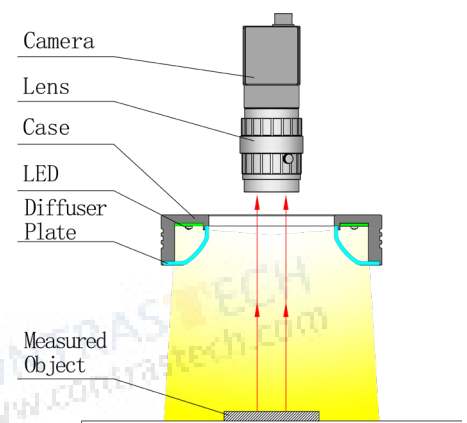
Imaging of keyboard and inner buttons



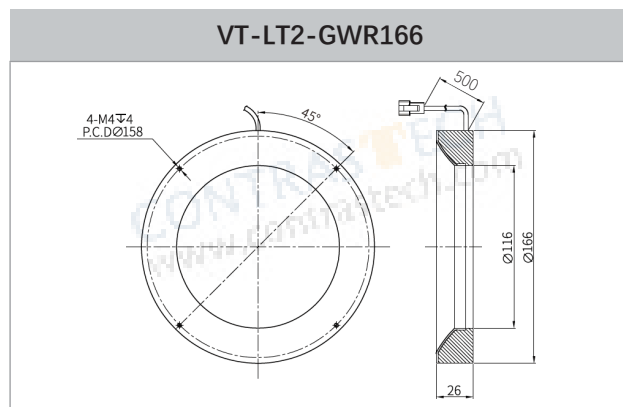
Lights: GWR150W

Imaging of cambered surface

### Illumination Structure



### Dimension



### Explanation of Model Code

VT-LT2-GWR	60	(W/B/R)
Series	Outer Diameter	Color

Model No.	Electrical specifications (GREEN / NIR / UV Accept custom)			Dimensions		
	Supply Voltage (v)	Power cons. (w)	Power cons. (w)	Outer diam. (mm)	Inner diam. (mm)	Height (mm)
VT-LT2-GWR166	24	13.2	19.2	166	116	26



# 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-LT3-24300PWLI-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	√
<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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