



CONTRASTECH

Machine Vision LED Illumination

Machine Vision
LED Back-illumination

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 we 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.



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 diffusion 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.

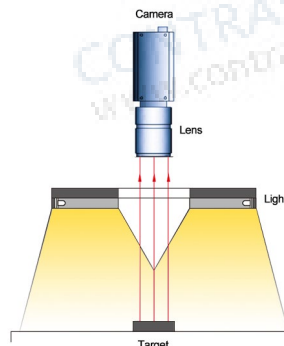
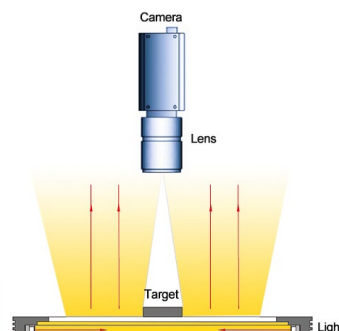
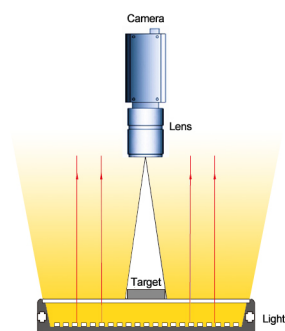
Since the light penetration ability is different between PCB's copper line and its substrate. By illuminating from back, the copper line's precise position can be distinguished from substrate.

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

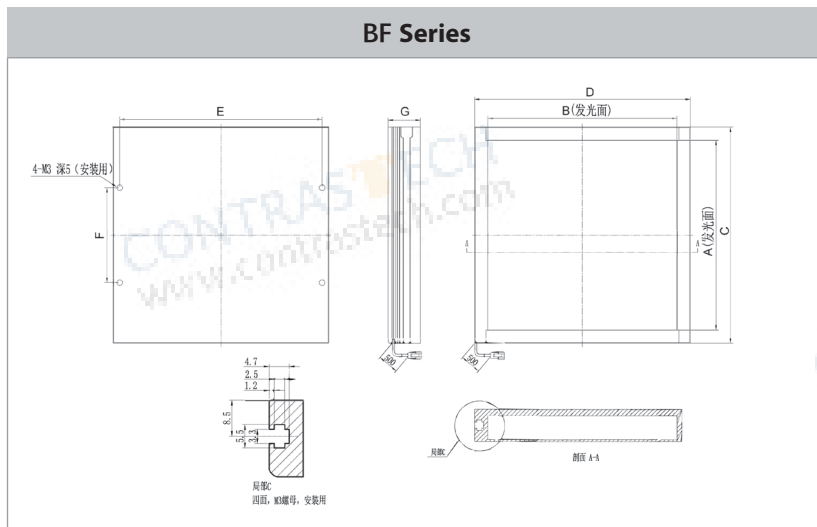
VT-LT2-BF	110	110	(W/B/G/R)
Series	Emitting Length	Emitting Width	Color

Common Specifications

Input voltage	24VDC
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

Model No.	Optical spec.		Working Distance	Electrical specifications (GREEN / NIR / UV Accept custom)			Dimensions		
	Light Area			Recommended WD (mm)	Supply Voltage (v)	Power cons. (w) ●	Power cons. (w) ○ ●	Length (mm)	Width (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

Side Flat Backlights Illumination

BFC Series

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

Features

- Through unique photo-conductive material, light scatters over and over, which can reduce directive of light ray and make it uniform.
- The light color and the size of emitting surface can be easily customized according to request.

Applications

- Dimension measuring, visual inspection.
- Liquid level inspection, pinhole inspection, and burr inspection for metal parts, etc..
- Inspection for tears/stains on packaging, etc..



Compact design, suitable for a variety of applications.

Examples of Bottom Flat Backlights Images



Lights: BFC5050W

Imaging of agates



Lights: BFC5050B

Imaging of shaft parts.

Appropriate distance the light off working piece can improve the measurement accuracy.



Lights: BFC100100B

Imaging of connecting fingers and surface coating of FPC.

Illumination Structure

Light from the LEDs that are distributed on the inner side passes through the plate to produce uniform illumination.

Common Specifications

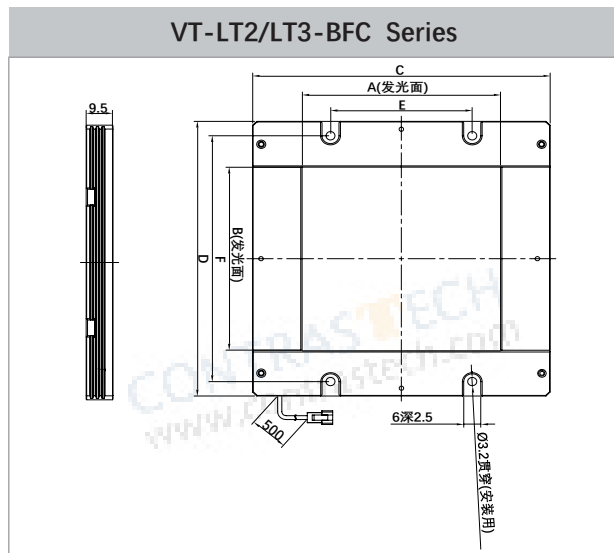
Input voltage	24 VDC
Wavelength range	Red: 620-630nm; Blue: 460-475nm; Green: 520-530nm;
Color temperature (white)	5800-7500K
Operating environment (indoor)	Temperature: 0~40°C Humidity: 20% to 85% RH (with no condensation)
Life time	White:30,000hrs, Red: 60,000hrs (Depends on the operating environment, not a gurantee)
Case material	Aluminum alloy, Resin

Explanation of Model Code

VT-LT2-BFC	100	100	(W/B/G/R)
Series	Emitting Length	Emitting Width	Color

Model No.	Optical spec.		Working Distance	Electrical specifications (GREEN / NIR / UV Accept custom)			Dimensions		
	Length (mm)	Width (mm)		Supply Voltage (v)	Power cons. (w)	Power cons. (w)	Length (mm)	Width (mm)	Height (mm)
VT-LT2-BFC5050	50	50	30-100	24	3.0	4	85	85	9.5
VT-LT2-BFC7070	70	70	30-100	24	5.9	7.9	105	105	9.5
VT-LT2-BFC8080	80	80	30-100	24	6.0	10.0	115	115	9.5
VT-LT2-BFC9090	90	90	30-100	24	6.3	12.6	125	125	9.5
VT-LT2-BFC110110	110	110	30-100	24	6.8	12.6	145	145	9.5
VT-LT2-BFC150100	150	100	30-100	24	4.4	10.0	185	135	9.5
VT-LT2-BFC200160	200	160	30-100	24	6.5	12.1	235	195	9.5
VT-LT2-BFC200200	200	200	30-100	24	6.7	26.3	235	235	9.5
VT-LT2-BFC250200	250	200	30-100	24	8.4	16.8	285	235	9.5
VT-LT2-BFC300300	300	300	30-100	24	15.5	35.0	335	335	9.5
VT-LT3-BFC300200	300	200	0-100	24	16.8	16.8	334	234	10.5
VT-LT3-BFC350350	350	350	0-100	24	22	22	384	384	10.5
VT-LT3-BFC400300	400	300	0-200	24	23.5	23.5	434	334	10.5
VT-LT3-BFC500400	500	400	0-200	24	30.24	30.24	534	434	10.5
VT-LT3-BFC600400	600	400	0-200	24	33.6	33.6	634	434	10.5

Dimension (mm)



Model No.	Lighting Drawing Dimension Description and Notes					
	A	B	C	D	E	F
VT-LT2-BFC5050	50	50	85	85	-	75
VT-LT2-BFC7070	70	70	105	105	50	94
VT-LT2-BFC8080	80	80	115	115	60	104
VT-LT2-BFC9090	90	90	125	125	70	114
VT-LT2-BFC110110	110	110	145	145	90	134
VT-LT2-BFC150100	150	100	185	135	130	124
VT-LT2-BFC200160	200	160	235	195	180	184
VT-LT2-BFC200200	200	200	235	235	180	224
VT-LT2-BFC250200	250	200	285	235	230	224
VT-LT2-BFC300300	300	300	335	335	280	324
VT-LT3-BFC300200	300	200	334	234	252	223
VT-LT3-BFC350350	350	350	384	384	280	373
VT-LT3-BFC400300	400	300	434	334	336	323
VT-LT3-BFC500400	500	400	534	434	340	423
VT-LT3-BFC600400	600	400	634	434	580	424

Bottom/Side Parallel Flat Backlight Illumination

BFP / BFCP Series

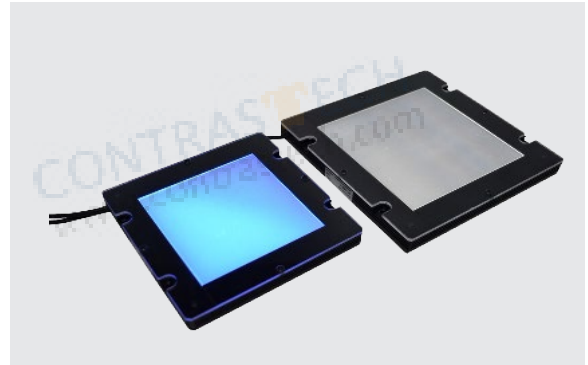
Flat lights provide large parallel emitting area.

Features

- Optimizing the lights with unique material, making the light radiate in parallel.
- The light is with standard mold shell and compact structure, easy to install.

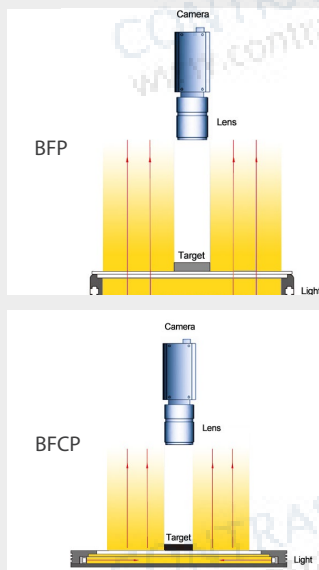
Applications

- Dimension measuring, appearance inspection.
- Identification and inspection of the large size mechanical parts.



Illumination Structure

Compared with BFC series, BFCP series add a unique parallel plate above the diffusion plate to make the light radiate in parallel.



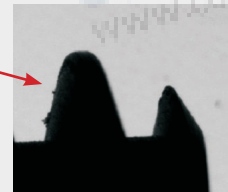
Examples of Parallel Flat Backlight Images

Comparison of screw thread image

Using parallel flat light could illuminate the edge of the screw thread more clearly and precisely.



Generic Flat Lighting (BFC series)
Image of screw thread and enlarged view



Parallel Flat Lighting (BFCP series)
Image of screw thread and enlarged view

Common Specifications

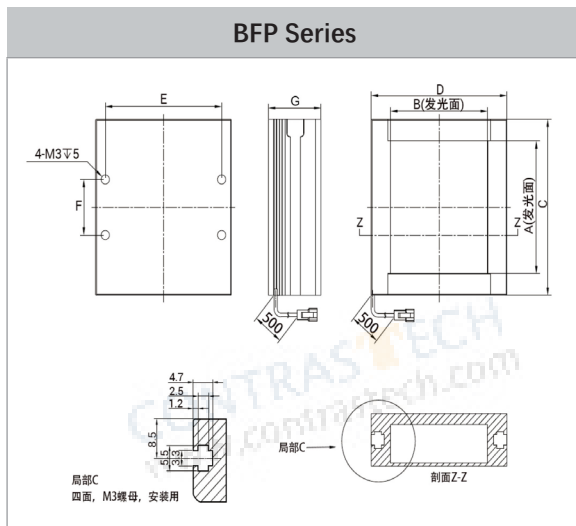
Input voltage	24 VDC
Wavelength range	Red: 620-630nm; Blue: 460-475nm; Green: 520-530nm;
Color temperature (white)	5800-7500K
Operating environment (indoor)	Temperature: 0~40°C Humidity: 20% to 85% RH (with no condensation)
Life time	White:30,000hrs, Red: 60,000hrs (Depends on the operating environment, not a guarantee)
Case material	Aluminum alloy, Resin

Explanation of Model Code

VT-LT2-BFP/BFCP	100	100	(W/B/R)
Series	Emitting Length	Emitting Width	Color
LT2-BFP	Flat lights provide area illumination with LED beads distributed on the bottom.		
LT2-BFCP	Flat lights provide area illumination with LED beads distributed on the inner side.		

Model No.	Optical spec.		Working Distance	Electrical specifications (GREEN / NIR / UV Accept custom)			Dimensions		
	Light Area			Recommended WD (mm)	Supply Voltage (v)	Power cons. (w) ●	Power cons. (w) ● ○ ●	Length (mm)	Width (mm)
Length (mm)	Width (mm)								
VT-LT2-BFP2727	27	27	30-100	24	3.0	10.9	41	41	19
VT-LT2-BFP4335	43	35	30-100	24	5.9	7.9	57	49	19
VT-LT2-BFP5050	50	50	30-100	24	6.0	9.3	64	64	19
VT-LT2-BFP6360	63	60	30-100	24	6.8	12.6	77	74	19
VT-LT2-BFP8375	83	75	30-100	24	4.4	10.0	97	89	19
VT-LT2-BFP100100	100	100	30-100	24	6.5	12.1	114	114	19
VT-LT2-BFP140105	140	105	30-100	24	6.7	26.3	154	119	19
VT-LT2-BFP160120	160	120	30-100	24	8.4	16.8	174	134	19
VT-LT2-BFP20050	200	50	30-100	24	8.2	16.6	214	64	19
VT-LT2-BFP200150	200	150	30-100	24	15.5	35.0	214	164	19
VT-LT2-BFP211200	211	200	30-100	24	12.3	24.0	225	214	19
VT-LT2-BFP224170	224	170	30-100	24	36.3	36.3	238	184	19
VT-LT3-BFP300200	300	200	0-150	24	40.32	50.4	314	214	21
VT-LT3-BFP400300	400	300	0-150	24	80.64	100.8	414	314	22
VT-LT3-BFP400350	400	350	0-200	24	80.64	110.8	414	364	22
VT-LT3-BFP500400	500	400	0-200	24	144	180	520	420	34
VT-LT3-BFP600400	600	400	0-200	24	172.8	216	620	420	34

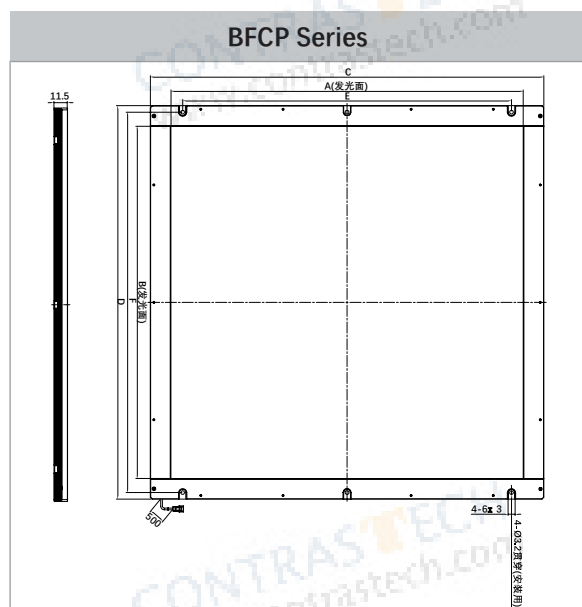
Dimension (mm)



Model No.	Lighting Drawing Dimension Description and Notes						
	A	B	C	D	E	F	G
VT-LT2-BFP2727	27	27	41	41	34	18	19
VT-LT2-BFP4335	43	35	57	49	42	18	19
VT-LT2-BFP5050	50	50	64	64	57	18	19
VT-LT2-BFP6360	63	60	77	74	67	25	19
VT-LT2-BFP8375	83	75	97	89	82	50	19
VT-LT2-BFP100100	100	100	114	114	107	50	19
VT-LT2-BFP140105	140	105	154	119	112	80	19
VT-LT2-BFP160120	160	120	174	134	127	80	19
VT-LT2-BFP20050	200	50	214	64	57	80	19
VT-LT2-BFP200150	200	150	214	164	157	80	19
VT-LT2-BFP211200	211	200	225	214	207	80	19
VT-LT2-BFP224170	224	170	238	184	177	80	19
VT-LT3-BFP300200	300	200	314	214	150	280	21
VT-LT3-BFP400300	400	300	414	314	240	330	24.5
VT-LT3-BFP400350	400	350	414	364	300	330	24.5
VT-LT3-BFP500400	500	400	520	420	300	450	34
VT-LT3-BFP600400	600	400	620	420	300	540	34

Model No.	Optical spec.		Working Distance	Electrical specifications (GREEN / NIR / UV Accept custom)			Dimensions		
	Light Area			Recommended WD (mm)	Supply Voltage (v)	Power cons. (w)	Power cons. (w)	Length (mm)	Width (mm)
Length (mm)	Width (mm)	●	○						
VT-LT2-BFCP5050	50	50	30-100	24	3.0	10.9	85	85	11.5
VT-LT2-BFCP7070	70	70	30-100	24	5.9	7.9	105	105	11.5
VT-LT2-BFCP8080	80	80	30-100	24	6.0	10.0	115	115	11.5
VT-LT2-BFCP9090	90	90	30-100	24	6.3	12.6	125	125	11.5
VT-LT2-BFCP110110	110	110	30-100	24	6.8	12.6	145	145	11.5
VT-LT2-BFCP150100	150	100	30-100	24	4.4	10.0	185	135	11.5
VT-LT2-BFCP200160	200	160	30-100	24	6.5	12.1	235	195	11.5
VT-LT2-BFCP200200	200	200	30-100	24	6.7	26.3	235	235	11.5
VT-LT2-BFCP250200	250	200	30-100	24	8.4	16.8	285	235	11.5
VT-LT2-BFCP300200	300	200	30-100	24	8.2	16.6	335	235	11.5
VT-LT2-BFCP300300	300	300	30-100	24	15.5	35.0	335	335	11.5
VT-LT3-BFCP400300	400	300	0-200	24	23.5	23.5	434	334	10.5
VT-LT3-BFCP600400	600	400	0-200	24	33.6	33.6	634	434	10.5

Dimension (mm)



Model No.	Lighting Drawing Dimension Description and Notes					
	A	B	C	D	E	F
VT-LT2-BFCP5050	50	50	85	85	-	-
VT-LT2-BFCP7070	70	70	105	105	50	94
VT-LT2-BFCP8080	80	80	115	115	60	104
VT-LT2-BFCP9090	90	90	125	125	70	114
VT-LT2-BFCP110110	110	110	145	145	90	134
VT-LT2-BFCP150100	150	100	185	135	130	124
VT-LT2-BFCP200160	200	160	235	195	180	184
VT-LT2-BFCP200200	200	200	235	235	180	224
VT-LT2-BFCP250200	250	200	285	235	230	224
VT-LT2-BFCP300200	300	200	335	235	280	224
VT-LT2-BFCP300300	300	300	335	335	280	324
VT-LT3-BFCP400300	400	300	434	334	366	325
VT-LT3-BFCP600400	600	400	634	434	580	424

Side Flat Backlights Illumination

BFCK Series

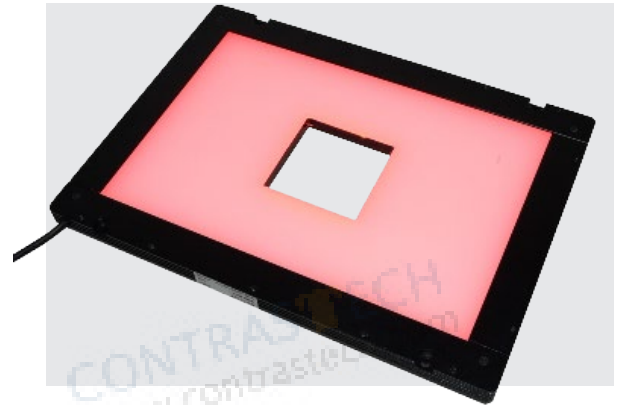
Front flat lighting with an opening in the center

Features

- The camera can penetrate through the central opening of the lights
- The emitting area, the lights color, the number and size of the holes, all can be customized.

Applications

- Large size PCB parts inspection and recognition.
- Mark point position
- Large size electronic part inspection.



Illumination Structure

Examples of Bottom Flat Backlights Images



Light: BFCK150100R
Imaging of zipper teeth

Lights: BFCK250200B
Imaging of plastic parts for location.

Common Specifications

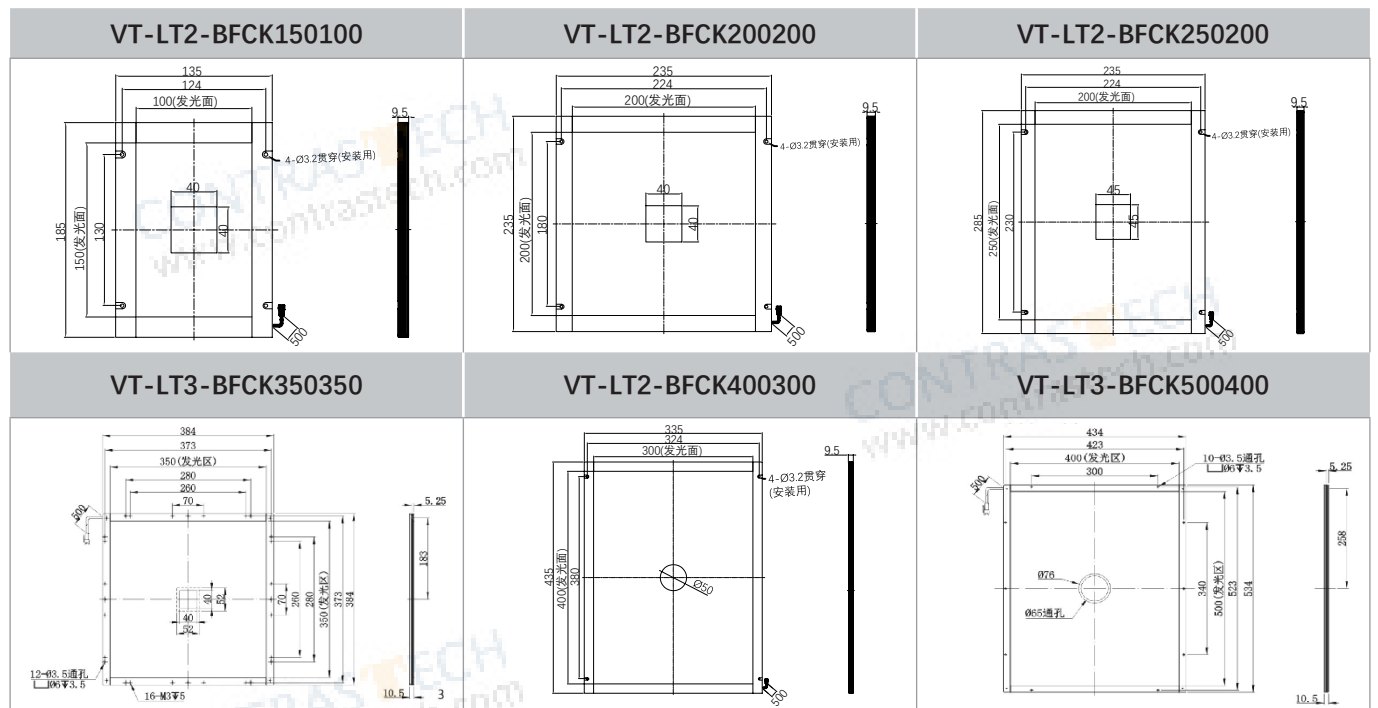
Input voltage	24 VDC
Wavelength range	Red: 620-630nm; Blue: 460-475nm; Green: 520-530nm;
Color temperature (white)	5800-7500K
Operating environment (indoor)	Temperature: 0~40°C Humidity: 20% to 85% RH (with no condensation)
Life time	White:30,000hrs, Red: 60,000hrs (Depends on the operating environment, not a gurantee)
Case material	Aluminum alloy, Resin

Explanation of Model Code

VT-LT2-BFCK	100	100	(W/B/G/R)
Series	Emitting Length	Emitting Width	Color

Model No.	Optical spec.		Electrical specifications (NIR / UV Accept custom)			Dimensions			Hole Size
	Light Area		Supply Voltage (v)	Power cons.(w) ●	Power cons. (w) ● ○ ●	Length (mm)	Width (mm)	Height (mm)	Aperture (mm)
Length (mm)	Width (mm)								
VT-LT2-BFCK150100	150	100	24	4.2	10.3	185	135	9.5	40×40(square)
VT-LT2-BFCK200200	200	200	24	16.1	24.0	235	235	9.5	40×40(square)
VT-LT2-BFCK250200	250	200	24	6.9	16.8	285	235	9.5	45×45(square)
VT-LT3-BFCK350350	350	350	24	-	23.52	384	384	10.5	40×40 (square)
VT-LT2-BFCK400300	400	300	24	11.5	24.0	435	335	9.5	Ø50 (circle)
VT-LT3-BFCK500400	500	400	24	-	30.3	534	434	10.5	Ø65 (circle)

Dimension (mm)



2024

HOT PRODUCTS

Infrared Series Camera

- ◇ Near-Infrared(NIR) Industrial Cameras: 300-1100nm
- ◇ Short-Wave(SWIR) Industrial Cameras: 900-1700nm
- ◇ Cooled Mid-Wave Infrared(MWIR) Cameras: 1500-5200nm
- ◇ Long-Wave Infrared(LWIR) Industrial Cameras: 8000-14000nm



NIR



SWIR



MWIR



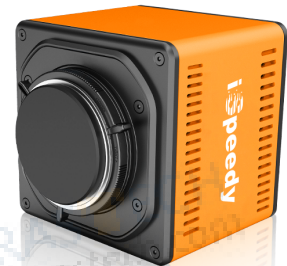
LWIR

High-Speed Camera

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



• iSpeedy Series



iSpeedy SE Series •

