



since 2004  
[www.tms-lite.com](http://www.tms-lite.com)

Empowering Life Through Collaboration

# LED

ILLUMINATION SOLUTION  
PARTNER

2019





# TMS Lite Sdn Bhd

## VISION

Empowering life through collaboration

## MISSION

To bring inspiration and innovation to engineers moving forward towards industry 4.0

## CORE VALUES

Integrity | Creative & Innovative | Mutual Trust & Respect | Team Spirit

## ABOUT US

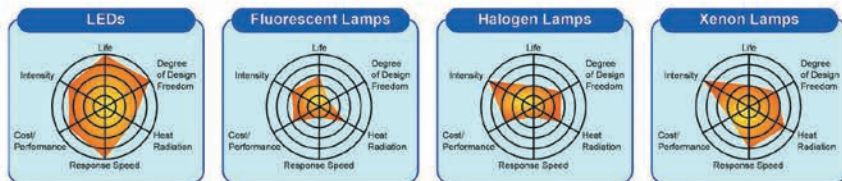
Established since 2004 in Penang, Malaysia, TMS LITE has been an Illumination Solution Partner for the Machine Vision Industry, with a great reputation built for more than 14 years. Our teams are Creative & Innovative illumination experts who are able to perform Rapid Prototyping on Custom Illuminators or Specially Designed Lighting according to the customers' needs. Known as the ONE STOP Illumination Solution Provider in the Asia Pacific region; our professionals are committed to assisting with effective solutions from Pre-Sales to Post-Sales. We also provide Training on specialized areas of machine vision, including LED lighting, lenses and cameras to many industries and academic institutions to nurture future talents. With certifications from prominent organizations and authorities such as R.o.H.S., C.E., and I.S.O., and through reliable partnerships, TMS LITE aims for the highest standard of illumination in the field of machine vision, ensuring the best quality and safest lighting are delivered to our customers.

TMS LITE, your committed ONE STOP Illumination Solution Provider.



INDEX	01
LED ILLUMINATION	02
PRODUCT PART NUMBER	04
DIRECT ILLUMINATION	05
DIFFUSED ILLUMINATION	25
INDIRECT ILLUMINATION	33
BACKLIGHT ILLUMINATION	36
COAXIAL ILLUMINATION	43
4 SECTION ILLUMINATION	48
SPOTLIGHT ILLUMINATION	49
INGRESS PROTECTION ILLUMINATION (IP-65)	51
LINE SCAN ILLUMINATION	54
12V ILLUMINATION	55
IR ILLUMINATION	56
UV ILLUMINATION	57
MICROSCOPE ILLUMINATION	58
CUSTOMIZE LED ILLUMINATION	59
LENSES & OPTICS ACCESSORIES	60
LED LIGHT SOURCE	63
PRISM BLOCK	69
DEMO KIT	70
OPTIONAL CABLE	72

THE IMPORTANCE OF LED ILLUMINATION



(Comparison Of Image Processing Illumination)

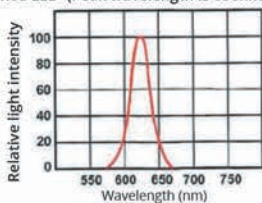
<p><b>FLEXIBLE SHAPE DESIGN</b></p>	<ul style="list-style-type: none"> <li>- Consists of a collection of individual LEDs</li> <li>- Provides much greater shape flexibility</li> <li>- Have greater freedom in the shape design</li> <li>- Have greater choices in sizes</li> <li>- Able to fulfil various application needs</li> </ul>
<p><b>LONG LIFE</b></p>	<ul style="list-style-type: none"> <li>- Have intensity half life from 10,000 to 50,000 hours under continuous use</li> <li>- Heat development can be controlled by system</li> </ul> <p>(Life)</p> <p>(Response Speed)</p> <p>(Power Consumption)</p>
<p><b>FAST RESPONSE</b></p>	<ul style="list-style-type: none"> <li>- Fast Response Time</li> <li>- Able to display LEDs' strength by switching between multiple illuminations or between multiple circuits in a single illumination</li> <li>- Can be synchronized with a strobe or camera</li> <li>- Able to regulate with high-precision pulse modulation</li> </ul>
<p><b>SELECTABLE COLOR</b></p>	<ul style="list-style-type: none"> <li>- Variations in choice of illumination provide differences in resulted image</li> </ul>
<p><b>LOW TOTAL RUNNING COST</b></p>	<ul style="list-style-type: none"> <li>- Low initial installation cost for daily operation &amp; maintenance</li> <li>- LED illumination system offer great advantages in cost performance</li> </ul>



# 2019 LED Illumination

## WAVELENGTH OF LIGHTING

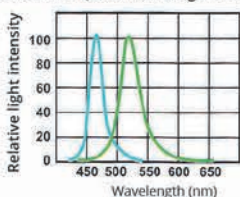
Red LED (Peak wavelength is 630nm)



RED LED

Remark: Not to be used as reference for Osram range.

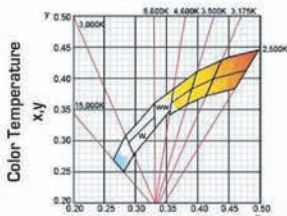
Blue / Green LED (Peak wavelength is 470/525nm)



BLUE LED

GREEN LED

Remark: Not to be used as reference for Osram range.



WHITE LED

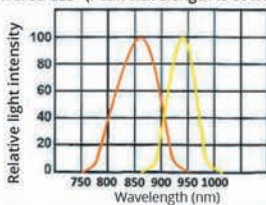
W = Cool White

x	0.296	0.287	0.307	0.311	x	0.311	0.307	0.33	0.33
y	0.278	0.295	0.315	0.294	y	0.294	0.315	0.339	0.318

WW = Yellowish White

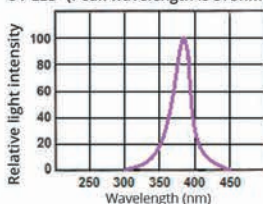
x	0.33	0.33	0.381	0.357	x	0.33	0.33	0.357	0.356
y	0.338	0.26	0.365	0.361	y	0.318	0.339	0.361	0.351

Infrared LED (Peak wavelength is 850/940nm)



INFRARED LED

UV LED (Peak wavelength is 375nm)

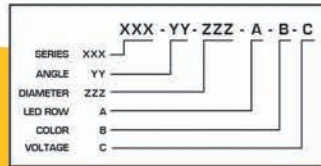


UV LED

## Product Part Number

## PRODUCT PART NUMBER

All product part number follows this naming convention:



Color Available Chart

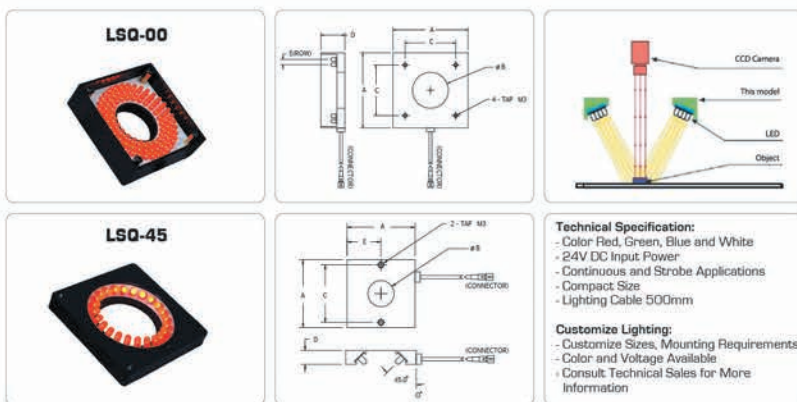
A. DIRECT ILLUMINATION	MODEL	Single color [R, W, B, G]	RGB	IR	UV
1) DIRECT ILLUMINATION SHOWER SERIES	LSQ, LSW, IDD	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>
2) DIRECT ILLUMINATION LOW ANGLE SERIES	LLA	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>
3) DIRECT ILLUMINATION BAR SERIES	LBRX, LBRO, LBM, LBMQ, MLBX2, HLBRX	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>B. DIFFUSED ILLUMINATION</b>					
1) DIFFUSED ILLUMINATION RING SERIES	DLR3, DFR4, HPD, HPD2	<input type="radio"/>			
2) DIFFUSED ILLUMINATION SQUARE/ANGULAR SERIES	DLS2, DLW2, DLQ2, DLF2, DLC, BHLQ	<input type="radio"/>			
3) DIFFUSED ILLUMINATION LIGHT TUBE SERIES	LBDQ	<input type="radio"/>			
<b>C. INDIRECT ILLUMINATION</b>					
1) INDIRECT ILLUMINATION DOME SERIES	IDS5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
2) INDIRECT ILLUMINATION TUNNEL SERIES	IDT3	<input type="radio"/>	<input type="radio"/>		
3) INDIRECT ILLUMINATION SQUARE SERIES	IDQ3	<input type="radio"/>	<input type="radio"/>		
<b>D. BACKLIGHT ILLUMINATION</b>					
1) SIDE ILLUMINATION SERIES	BHDS, BHD, BHDQ	<input type="radio"/>			
2) HIGH ILLUMINATION SERIES	LBL3, BHS4, BHH, BHC2, BHLX3	<input type="radio"/>		<input type="radio"/>	
<b>E. COAXIAL ILLUMINATION</b>					
1) COAXIAL ILLUMINATION SERIES	CAS2, CAS3, HCAS2, CASC	<input type="radio"/>	<input type="radio"/>		
<b>F. 4 SECTIONAL ILLUMINATION</b>					
<b>G. SPOT LIGHT ILLUMINATION</b>					
1) SPOT LIGHT ILLUMINATION FIBER SERIES	HBF, HBFS, FBX2	<input type="radio"/>			
<b>H. INGRESS PROTECTION ILLUMINATION (IP-65)</b>					
1) INGRESS PROTECTION ILLUMINATION INDIRECT SERIES	LBRP	<input type="radio"/>			
2) INGRESS PROTECTION ILLUMINATION DIFFUSED RING SERIES	HPDP	<input type="radio"/>			
3) INGRESS PROTECTION ILLUMINATION BACKLIGHT SERIES	BHP	<input type="radio"/>			
I. LINE SCAN ILLUMINATION		<input type="radio"/>			
J. 12V ILLUMINATION		<input type="radio"/>			
K. MICROSCOPE ILLUMINATION		<input type="radio"/>			
L. CUSTOMIZE LED ILLUMINATION					
<b>M. LED LIGHTING SOURCE</b>					
1) ANALOG LIGHT SOURCE SERIES	ANG				
2) LED LIGHT CONTROLLER - SD SERIES	SD / SDH				
3) LED LIGHT CONTROLLER - SOP SERIES	SOP				
4) LED LIGHT CONTROLLER - SDX SERIES	SDX				
5) LED LIGHT CONTROLLER - ST SERIES	ST, STH				
5) LED LIGHT CONTROLLER - SDA SERIES	SDA				
<b>N. PRISM BLOCK</b>					
<b>O. LENSES &amp; OPTICS ACCESSORIES</b>					
<b>P. OPTIONAL CABLE</b>					
1) EXTENSION CABLE					
2) BRANCH CABLES					
3) FERRULE CABLES					

# Direct Illumination

## LSQ SERIES - 00°, 45° – High Intensity, Concentrated Ring Illumination

LSQ Series is with 00°, 45° square casing with LED arrays are arranged densely in ring shape for light arrays to be concentrated to a spot for extreme bright light. By using a flexible PCB board, the product quality and efficiency could be improved as flexible boards are able to achieve optimized angle with variations of outer and inner diameter to target a work piece.

Applications: Substrate Inspection, Label Inspection, Flat Surface, Fiducial Recognition

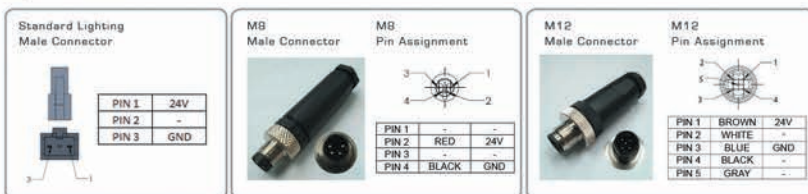


Model	Dimensions (MM)					Color	Voltage / Watt	Current	Weight [g]
	A	B	C	D	E [ROW]				
LSQ-00-050-2-X	56.5	27.0	36.0	18.0	2.0	● ● ○	24V / 2.52W 24V / 2.88W	105mA 120mA	80
LSQ-00-060-3-X	64.0	27.0	33.0	19.0	3.0	● ● ○	24V / 3.60W 24V / 4.32W	150mA 180mA	110

Model	Dimensions (MM)					Color	Voltage / Watt	Current	Weight [g]
	A	ØB	C	D	E				
LSQ-45-030-1-X	39.0	15.0	33.0	8.0	19.5	● ● ○	24V / 0.72W 24V / 0.72W	30mA 30mA	40
LSQ-45-040-1-X	46.0	22.0	39.0	8.0	23.0	● ● ○	24V / 0.72W 24V / 1.08W	30mA 45mA	40
LSQ-45-050-1-X	52.5	28.0	46.0	8.0	26.3	● ● ○	24V / 1.08W 24V / 1.44W	45mA 60mA	60

Remark: 2 types of white are available- W: Cool White WW: Yellowish White

### Optional Connector



Product Part Numbering System :  
LSQ-00-050-2-X-24V-M8

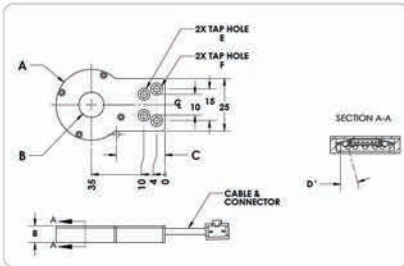
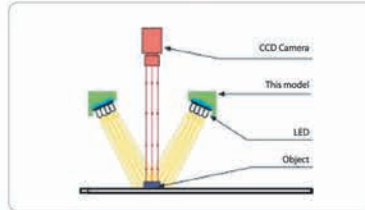
Product Part Numbering System :  
LSQ-00-050-2-X-24V-M12

# Direct Illumination

## LSQ STACKABLE SERIES – 00°, 15°, 30°, 45°

LSQ stackable series provides 4 different angles of lighting for multiple observations during inspection. Illumination from different angles provide slightly different results.

Applications: Substrate Inspection, Label Inspection, Flat Surface, Fiducial Recognition



**Technical Specification:**

- Colour Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size

Model	Dimensions [MM]						Color	Voltage / Watt	Current	Weight [g]
	A	B	C	D	TAP HOLE E	TAP HOLE F				
LSQ-00-033-1-X-24V	34	12	23	0	M4	Ø3.2	● ● ● ○ ● ● ● ○	24V / 0.36W 24V / 0.72W	15mA 30mA	29
LSQ-00-045-1-X-24V	46	24	15	0	M3	Ø3.2	● ● ● ○ ● ● ● ○	24V / 0.72W 24V / 1.44W	30mA 60mA	32
LSQ-00-051-1-X-24V	52	33.5	11	0	Ø3.2	M3	● ● ● ○ ● ● ● ○	24V / 0.72W 24V / 1.44W	30mA 60mA	33
LSQ-15-033-1-X-24V	34	12	23	15	M4	Ø3.2	● ● ● ○ ● ● ● ○	24V / 0.36W 24V / 0.72W	15mA 30mA	29
LSQ-15-045-1-X-24V	46	24	15	15	M3	Ø3.2	● ● ● ○ ● ● ● ○	24V / 0.72W 24V / 1.08W	30mA 45mA	30
LSQ-15-051-1-X-24V	52	33.5	11	15	Ø3.2	M3	● ● ● ○ ● ● ● ○	24V / 0.72W 24V / 1.44W	30mA 60mA	31
LSQ-30-033-1-X-24V	34	12	23	30	M4	Ø3.2	● ● ● ○ ● ● ● ○	24V / 0.36W 24V / 0.72W	15mA 30mA	29
LSQ-30-045-1-X-24V	46	24	15	30	M3	Ø3.2	● ● ● ○ ● ● ● ○	24V / 0.72W 24V / 1.44W	30mA 60mA	31
LSQ-30-051-1-X-24V	52	33.5	11	30	Ø3.2	M3	● ● ● ○ ● ● ● ○	24V / 0.72W 24V / 1.44W	30mA 60mA	31
LSQ-45-033-1-X-24V	34	12	23	45	M4	Ø3.2	● ● ● ○ ● ● ● ○	24V / 0.36W 24V / 0.72W	15mA 30mA	29
LSQ-45-045-1-X-24V	46	24	15	45	M3	Ø3.2	● ● ● ○ ● ● ● ○	24V / 0.72W 24V / 1.08W	30mA 45mA	30
LSQ-45-051-1-X-24V	52	33.5	11	45	Ø3.2	M3	● ● ● ○ ● ● ● ○	24V / 1.08W 24V / 1.44W	45mA 60mA	31

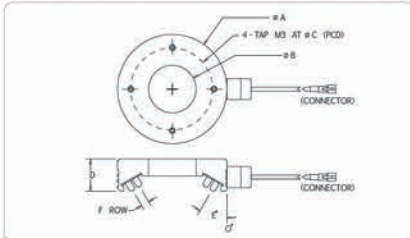
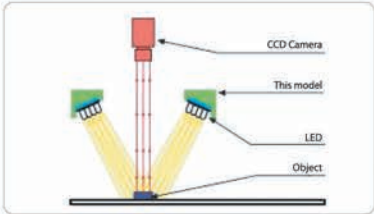
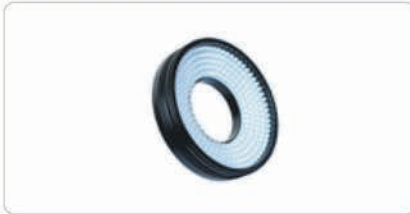


# Direct Illumination

## LSW SERIES– High Intensity, Concentrated Ring Illumination

LED arrays are arranged densely for the light arrays to be concentrated to a spot for extreme bright light. By using a flexible PCB board, the product quality and efficiency could be improve as flexible boards are able to achieve optimized angle with variations of outer and inner diameter to target a work piece.

Applications: Substrate Inspection, Label Inspection, Flat Surface, Fiducial Recognition



**Technical Specification:**

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

**Customize Lighting:**

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)						Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F (row)				
LSW-00-040-2-X	43.0	15.0	28.0	20.0	0	2.0	●●●●	24V / 1.44W	60mA	40
LSW-00-050-2-X	54.0	23.5	41.0	20.0	0	2.0	●●●●	24V / 1.80W	75mA	40
LSW-00-070-3-X	70.0	26.0	56.0	20.0	0	3.0	●●●●	24V / 2.16W	90mA	60
LSW-00-090-4-X	92.0	40.0	70.0	20.0	0	4.0	●●●●	24V / 2.88W	120mA	80
LSW-00-070-3-X	70.0	32.0	56.0	20.0	3.0	3.0	●●●●	24V / 4.32W	180mA	120
LSW-00-090-4-X	92.0	47.0	70.0	20.0	4.0	4.0	●●●●	24V / 5.40W	225mA	160
LSW-15-050-2-X	50.0	28.0	40.0	16.0	15	2.0	●●●●	24V / 6.48W	270mA	200
LSW-15-050-2-X	50.0	28.0	40.0	16.0	15	2.0	●●●●	24V / 8.28W	345mA	260
LSW-15-070-3-X	70.0	32.0	56.0	20.5	15	3.0	●●●●	24V / 2.16W	90mA	40
LSW-15-070-3-X	70.0	32.0	56.0	20.5	15	3.0	●●●●	24V / 2.52W	105mA	40
LSW-15-070-3-X	70.0	32.0	56.0	20.5	15	3.0	●●●●	24V / 4.32W	180mA	120
LSW-15-070-2-X	70.0	32.0	56.0	20.5	15	3.0	●●●●	24V / 5.76W	240mA	160
LSW-15-090-4-X	92.0	47.0	70.0	20.5	15	4.0	●●●●	IR850	120mA	100
LSW-15-090-4-X	92.0	47.0	70.0	20.5	15	4.0	●●●●	IR940	120mA	100
LSW-15-100-5-X	103.0	48.0	80.0	22.0	15	5.0	●●●●	24V / 2.88W	120mA	80
LSW-15-100-5-X	103.0	48.0	80.0	22.0	15	5.0	●●●●	24V / 7.92W	330mA	180
LSW-15-100-5-X	103.0	48.0	80.0	22.0	15	5.0	●●●●	24V / 10.08W	420mA	240
LSW-30-040-2-X	46.0	20.0	35.0	16.5	30	2.0	●●●●	24V / 10.80W	450mA	300
LSW-30-040-2-X	46.0	20.0	35.0	16.5	30	2.0	●●●●	24V / 13.68W	570mA	390
LSW-30-050-2-X	54.0	23.5	41.0	18.0	30	2.0	●●●●	24V / 1.80W	75mA	40
LSW-30-050-2-X	54.0	23.5	41.0	18.0	30	2.0	●●●●	24V / 2.52W	105mA	40
LSW-30-050-2-X	54.0	23.5	41.0	18.0	30	2.0	●●●●	24V / 2.16W	90mA	60
LSW-30-050-2-X	54.0	23.5	41.0	18.0	30	2.0	●●●●	24V / 2.88W	120mA	80
LSW-30-070-3-X	70.0	32.0	56.0	20.0	30	3.0	●●●●	24V / 4.32W	180mA	120
LSW-30-070-3-X	70.0	32.0	56.0	20.0	30	3.0	●●●●	24V / 5.40W	225mA	160
LSW-30-090-4-X	92.0	48.0	70.0	22.0	30	4.0	●●●●	24V / 8.28W	345mA	200
LSW-30-090-4-X	92.0	48.0	70.0	22.0	30	4.0	●●●●	24V / 10.44W	435mA	260
LSW-45-050-2-X	54.0	25.0	44.0	20.0	45	2.0	●●●●	24V / 2.16W	90mA	70
LSW-45-050-2-X	54.0	25.0	44.0	20.0	45	2.0	●●●●	24V / 2.88W	120mA	90
LSW-45-070-3-X	70.0	35.0	60.0	21.0	45	3.0	●●●●	24V / 4.68W	195mA	120
LSW-45-070-3-X	70.0	35.0	60.0	21.0	45	3.0	●●●●	24V / 5.76W	240mA	160
LSW-45-090-4-X	92.0	52.0	70.0	24.0	45	4.0	●●●●	24V / 8.28W	345mA	200
LSW-45-090-4-X	92.0	52.0	70.0	24.0	45	4.0	●●●●	24V / 10.44W	435mA	260
LSW-45-100-5-X	100.0	48.0	80.0	30.0	45	5.0	●●●●	24V / 11.16W	465mA	280
LSW-45-100-5-X	100.0	48.0	80.0	30.0	45	5.0	●●●●	24V / 14.40W	600mA	360

Remark: 2 types of white are available- W: Cool White WW: Yellowish White

## LSW SERIES – Available Accessories

**Optional Diffuser**

Diffusers can be added to LSW series for uniform light distribution. Adding a diffuser helps to reduce glare from glossy applications and produce lighting that is softer, more beautiful and more shadow-free. The thickness of a diffuser is 2mm.



LSW-00-040-2-DIFFUSER  
 LSW-00-050-2-DIFFUSER  
 LSW-00-070-3-DIFFUSER  
 LSW-00-090-4-DIFFUSER  
 LSW-15-050-2-DIFFUSER  
 LSW-15-070-3-DIFFUSER  
 LSW-15-090-4-DIFFUSER  
 LSW-15-100-5-DIFFUSER

DIFFUSER

**Optional Polarizer**








Polarizers can be added to LSW series in the case in which polarised light is required to acquire ideal results. Adding a polarizer ensures the maximum elimination of unwanted glare and helps to absorb harsh reflection to provide better performance. The thickness of a polarizer is 0.8mm.



LSW-00-040-2-POLARIZER  
 LSW-00-050-2-POLARIZER  
 LSW-00-070-3-POLARIZER  
 LSW-00-090-4-POLARIZER  
 LSW-15-050-2-POLARIZER  
 LSW-15-070-3-POLARIZER  
 LSW-15-090-4-POLARIZER  
 LSW-15-100-5-POLARIZER

POLARIZER

**Optional Connector**

Standard Lighting Male Connector	M8 Male Connector	M8 Pin Assignment	M12 Male Connector	M12 Pin Assignment																																																												
 <table border="1"> <tr><td>PIN 1</td><td>24V</td></tr> <tr><td>PIN 2</td><td>-</td></tr> <tr><td>PIN 3</td><td>GND</td></tr> </table>	PIN 1	24V	PIN 2	-	PIN 3	GND	  <table border="1"> <tr><td>PIN 1</td><td>-</td><td>-</td></tr> <tr><td>PIN 2</td><td>RED</td><td>24V</td></tr> <tr><td>PIN 3</td><td>-</td><td>-</td></tr> <tr><td>PIN 4</td><td>BLACK</td><td>GND</td></tr> </table>	PIN 1	-	-	PIN 2	RED	24V	PIN 3	-	-	PIN 4	BLACK	GND	 <table border="1"> <tr><td>PIN 1</td><td>-</td><td>-</td></tr> <tr><td>PIN 2</td><td>RED</td><td>24V</td></tr> <tr><td>PIN 3</td><td>-</td><td>-</td></tr> <tr><td>PIN 4</td><td>BLACK</td><td>GND</td></tr> </table>	PIN 1	-	-	PIN 2	RED	24V	PIN 3	-	-	PIN 4	BLACK	GND	  <table border="1"> <tr><td>PIN 1</td><td>BROWN</td><td>24V</td></tr> <tr><td>PIN 2</td><td>WHITE</td><td>-</td></tr> <tr><td>PIN 3</td><td>BLUE</td><td>GND</td></tr> <tr><td>PIN 4</td><td>BLACK</td><td>-</td></tr> <tr><td>PIN 5</td><td>GRAY</td><td>-</td></tr> </table>	PIN 1	BROWN	24V	PIN 2	WHITE	-	PIN 3	BLUE	GND	PIN 4	BLACK	-	PIN 5	GRAY	-	 <table border="1"> <tr><td>PIN 1</td><td>BROWN</td><td>24V</td></tr> <tr><td>PIN 2</td><td>WHITE</td><td>-</td></tr> <tr><td>PIN 3</td><td>BLUE</td><td>GND</td></tr> <tr><td>PIN 4</td><td>BLACK</td><td>-</td></tr> <tr><td>PIN 5</td><td>GRAY</td><td>-</td></tr> </table>	PIN 1	BROWN	24V	PIN 2	WHITE	-	PIN 3	BLUE	GND	PIN 4	BLACK	-	PIN 5	GRAY	-
PIN 1	24V																																																															
PIN 2	-																																																															
PIN 3	GND																																																															
PIN 1	-	-																																																														
PIN 2	RED	24V																																																														
PIN 3	-	-																																																														
PIN 4	BLACK	GND																																																														
PIN 1	-	-																																																														
PIN 2	RED	24V																																																														
PIN 3	-	-																																																														
PIN 4	BLACK	GND																																																														
PIN 1	BROWN	24V																																																														
PIN 2	WHITE	-																																																														
PIN 3	BLUE	GND																																																														
PIN 4	BLACK	-																																																														
PIN 5	GRAY	-																																																														
PIN 1	BROWN	24V																																																														
PIN 2	WHITE	-																																																														
PIN 3	BLUE	GND																																																														
PIN 4	BLACK	-																																																														
PIN 5	GRAY	-																																																														

Product Part Numbering System :  
 LSW-00-040-2-X-24V-M8

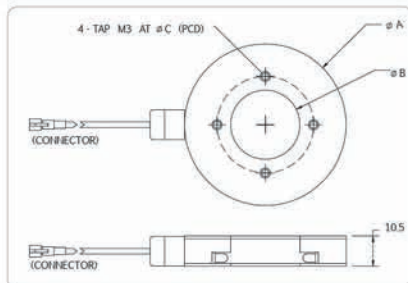
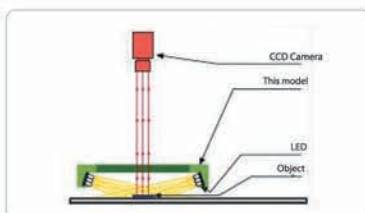
Product Part Numbering System :  
 LSW-00-040-2-X-24V-M12

# 2019 Direct Illumination

## LLA SERIES 90° - Direct, Low Angle, Ring Illumination

LED arrays are arranged in 90° provides side and low angle of illumination.  
LLA 90° series are available in 1 row to suit different brightness requirements.

Applications: Edge Detection, Scratch on Metal or Glossy Surface



**Technical Specification:**

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

**Customize Lighting:**

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)			Color	Voltage / Watt	Current	Weight (g)
	øA	øB	øC				
LLA-90-050-1-X	56	24	33.5	●●○	24V / 1.08W	45mA	50
LLA-90-080-1-X	80	50	58.5	●●○	24V / 1.44W	60mA	70
LLA-90-100-1-X	101	71	77.5	●●○	24V / 1.80W	75mA	100
LLA-90-150-1-X	151	121	127.5	●●○	24V / 2.52W	105mA	120
LLA-90-180-1-X	181	151	157.5	●●○	24V / 2.52W	105mA	180
LLA-90-210-1-X	211	181	187	●●○	24V / 3.24W	135mA	190
				●●○	24V / 3.96W	165mA	
				●●○	24V / 5.04W	210mA	
				●●○	24V / 4.68W	195mA	
				●●○	24V / 6.12W	255mA	
				●●○	24V / 5.76W	240mA	
				●●○	24V / 7.20W	300mA	

Remark: 2 types of white are available- W: Cool White WW: Yellowish White

### Optional Connector

Standard Lighting Male Connector

PIN 1	24V
PIN 2	-
PIN 3	GND

M8 Male Connector

M8 Pin Assignment

PIN 1	-	-
PIN 2	RED	24V
PIN 3	-	-
PIN 4	BLACK	GND

M12 Male Connector

M12 Pin Assignment

PIN 1	BROWN	24V
PIN 2	WHITE	-
PIN 3	BLUE	GND
PIN 4	BLACK	-
PIN 5	GRAY	-

Product Part Numbering System :  
LLA-90-050-1-X-24V-M8

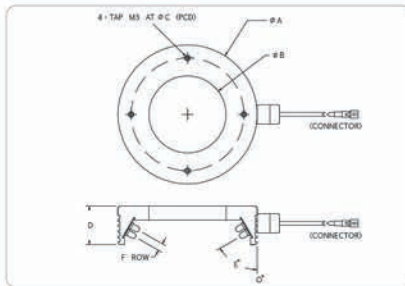
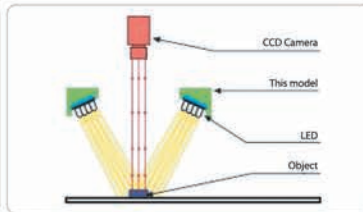
Product Part Numbering System :  
LLA-90-050-1-X-24V-M12

# Direct Illumination

## LLA SERIES 60°, 75° - Direct, Low Angle, Ring Illumination

LED arrays are arranged in 60° & 75° provides side and low angle of illumination.  
LLA 60° & 75° series are available in 1 row to suit different brightness requirements.

Applications: Edge Detection, Scratch on Metal or Glossy Surface



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)						Color	Voltage / Watt	Current	Weight (g)
	ØA	ØB	ØC	D	E	F (ROW)				
LLA-60-070-2-X	74.0	41.0	60.0	20.5	60.0	2.0	●●●○	24V / 3.60W	150mA	90
							●●●○	24V / 4.68W	195mA	
LLA-60-090-2-X	90.0	57.0	75.0	20.5	60.0	2.0	●●●○	24V / 4.32W	180mA	114
							●●●○	24V / 5.76W	240mA	
							●●●○	24V / 2.88W	120mA	
							●●●○	24V / 2.88W	120mA	
LLA-60-150-3-X	151.0	114.0	136.0	23.5	60.0	3.0	●●●○	24V / 11.88W	495mA	300
							●●●○	24V / 15.12W	630mA	
LLA-60-200-2-X	202.0	167.0	186.0	20.5	60.0	2.0	●●●○	24V / 10.80W	450mA	350
							●●●○	24V / 14.04W	585mA	
LLA-75-130-3-X	131.0	94.0	116.0	24.5	75.0	3.0	●●●○	24V / 10.08W	420mA	260
							●●●○	24V / 12.96W	540mA	
LLA-75-170-3-X	175.0	136.0	159.0	24.5	75.0	3.0	●●●○	24V / 13.68W	570mA	410
							●●●○	24V / 17.64W	735mA	

Remark: 2 types of white are available- W: Cool White WW: Yellowish White



# 2019 Direct Illumination

## LLA SERIES 60°, 75° – Available Accessories

### Optional Diffuser

Diffusers can be added to LLA series for uniform light distribution. Adding a diffuser helps to reduce glare from glossy applications and produce lighting that is softer, more beautiful and more shadow-free. The thickness of a diffuser is 2mm.



LLA-60-070-2-DIFFUSER	DIFFUSER
LLA-60-090-2-DIFFUSER	
LLA-60-150-3-DIFFUSER	
LLA-60-200-2-DIFFUSER	
LLA-75-130-3-DIFFUSER	
LLA-75-170-3-DIFFUSER	






### Optional Polarizer

Polarizers can be added to LLA Series in instances in which polarised light is required to acquire ideal results. Adding a polarizer ensures the maximum elimination of unwanted glare and helps to absorb harsh reflection to provide better performance. The thickness of a polarizer is 0.8mm.



LLA-60-070-2-POLARIZER	POLARIZER
LLA-60-090-2-POLARIZER	
LLA-60-150-3-POLARIZER	
LLA-60-200-2-POLARIZER	
LLA-75-130-3-POLARIZER	
LLA-75-170-3-POLARIZER	

### Optional Connector

<p><b>Standard Lighting Male Connector</b></p>  <table border="1"> <tr><td>PIN 1</td><td>24V</td></tr> <tr><td>PIN 2</td><td>-</td></tr> <tr><td>PIN 3</td><td>GND</td></tr> </table>	PIN 1	24V	PIN 2	-	PIN 3	GND	<p><b>M8 Male Connector</b></p>  <p><b>M8 Pin Assignment</b></p>  <table border="1"> <tr><td>PIN 1</td><td>RED</td><td>24V</td></tr> <tr><td>PIN 2</td><td>-</td><td>-</td></tr> <tr><td>PIN 3</td><td>-</td><td>-</td></tr> <tr><td>PIN 4</td><td>BLACK</td><td>GND</td></tr> </table>	PIN 1	RED	24V	PIN 2	-	-	PIN 3	-	-	PIN 4	BLACK	GND	<p><b>M12 Male Connector</b></p>  <p><b>M12 Pin Assignment</b></p>  <table border="1"> <tr><td>PIN 1</td><td>BROWN</td><td>24V</td></tr> <tr><td>PIN 2</td><td>WHITE</td><td>-</td></tr> <tr><td>PIN 3</td><td>BLUE</td><td>GND</td></tr> <tr><td>PIN 4</td><td>BLACK</td><td>-</td></tr> <tr><td>PIN 5</td><td>GRAY</td><td>-</td></tr> </table>	PIN 1	BROWN	24V	PIN 2	WHITE	-	PIN 3	BLUE	GND	PIN 4	BLACK	-	PIN 5	GRAY	-
PIN 1	24V																																		
PIN 2	-																																		
PIN 3	GND																																		
PIN 1	RED	24V																																	
PIN 2	-	-																																	
PIN 3	-	-																																	
PIN 4	BLACK	GND																																	
PIN 1	BROWN	24V																																	
PIN 2	WHITE	-																																	
PIN 3	BLUE	GND																																	
PIN 4	BLACK	-																																	
PIN 5	GRAY	-																																	

Product Part Numbering System :  
LLA-60-070-2-X-24V-M8

Product Part Numbering System :  
LLA-60-070-2-X-24V-M12

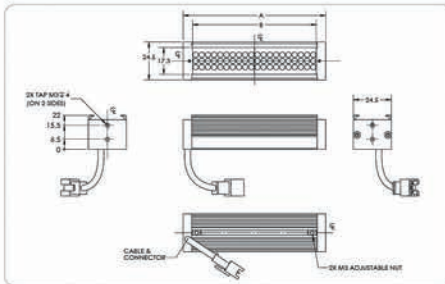
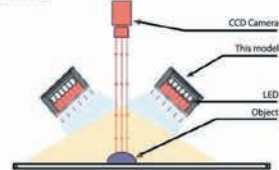
### LBRX 3 ROWS SERIES – Direct, Rectangular SMD Illumination (for short working distance)

3 rows of SMD LEDs with lens arrays are arranged in a rectangular array to provide rectangular illumination, which can be mounted with different angle to provide differences in illumination reflection for image processing.

Applications: General Illumination, Label Inspection, Character Inspection, Code Recognition



Short WD

**Technical Specification:**

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable: 500mm

**Customize Lighting:**

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)		Color	Voltage / Watt	Current	RGB Color	Voltage / Watt	Current	Weight (g)
	A	B							
LBRX-00-040-3-X	52.0	40.0	● ● ●	24V / 0.79W	33mA	● ● ●	24V / 1.80W	75mA	50
			● ● ●	24V / 1.01W	42mA	● ● ●	24V / 1.80W	75mA	
			● ● ●	24V / 1.08W	45mA	● ● ●	24V / 1.80W	75mA	
LBRX-00-080-3-X	92.0	80.0	● ● ●	24V / 1.58W	66mA	● ● ●	24V / 3.60W	150mA	70
			● ● ●	24V / 2.02W	84mA	● ● ●	24V / 3.60W	150mA	
			● ● ●	24V / 2.16W	90mA	● ● ●	24V / 3.60W	150mA	
LBRX-00-120-3-X	132.0	120.0	● ● ●	24V / 2.38W	99mA	● ● ●	24V / 5.40W	225mA	95
			● ● ●	24V / 3.02W	126mA	● ● ●	24V / 5.40W	225mA	
			● ● ●	24V / 3.24W	135mA	● ● ●	24V / 5.40W	225mA	
LBRX-00-160-3-X	172.0	160.0	● ● ●	24V / 3.17W	132mA	● ● ●	24V / 7.20W	300mA	115
			● ● ●	24V / 4.03W	168mA	● ● ●	24V / 7.20W	300mA	
			● ● ●	24V / 4.32W	180mA	● ● ●	24V / 7.20W	300mA	
LBRX-00-200-3-X	212.0	200.0	● ● ●	24V / 3.96W	165mA	● ● ●	24V / 9.00W	375mA	140
			● ● ●	24V / 5.04W	210mA	● ● ●	24V / 9.00W	375mA	
			● ● ●	24V / 5.40W	225mA	● ● ●	24V / 9.00W	375mA	

Remarks: LBRX 3 rows series can be cascaded (single colour / RGB) up to maximum length of 960mm

# Direct Illumination

## LBRX 3 ROWS SERIES – Available Accessories

### Optional Diffuser

Diffusers can be added to LBRX 3 rows series for uniform light distribution. Adding a diffuser helps to reduce glare from glossy applications and produce lighting that is softer, more beautiful and more shadow-free. The thickness of a diffuser is 2mm.



### Optional Polarizer

Polarizers can be added to LBRX 3 rows Series in instances in which polarized light is required to acquire ideal results. Adding a polarizer ensures the maximum elimination of unwanted glare and helps to absorb harsh reflection to provide better performance. The thickness of a polarizer is 0.8mm.

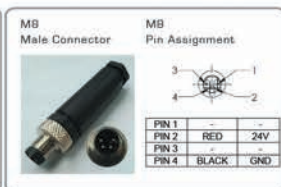
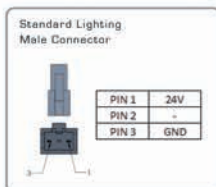


### Optional Flexible Mounting Bracket

Mounting bracket is designed with flexible mounting purposes either by inward mounting or outward mounting.



### Optional Connector



Product Part Numbering System :  
LBRX-00-040-3-X-24V-M8

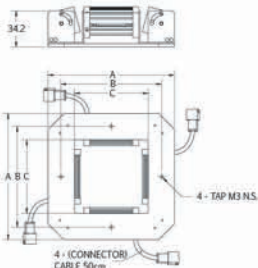
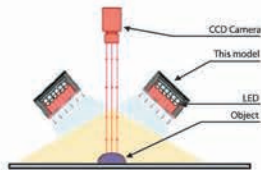
Product Part Numbering System :  
LBRX-00-040-3-X-24V-M12

## LBRQ 3 ROWS SERIES – Direct, Multiple Rectangular Illumination

(for short working distance)

LBRQ 3 rows series consists of a combination of 4 LBRX LED arrays. Each array's angle can be adjusted for different height applications.

Applications: Lead Inspection, Character Inspection, Code Recognition



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)			Color	Voltage / Watt	Current	RGB Color	Voltage / Watt	Current	Weight (g)
	A	B	C							
LBRQ-00-040-3-X	120.0	95.8	70.0	● ● ● ● ● ● ○ ● ● IR 850	24V / 3.17W	132mA	● ● ● ● ● ● ● ● ●	24V / 7.20W	300mA	385
					24V / 4.03W	168mA		24V / 7.20W	300mA	
					24V / 4.32W	180mA		24V / 7.20W	300mA	
LBRQ-00-080-3-X	160.0	135.8	110.0	● ● ● ● ● ● ○ ● ● IR 850	24V / 6.34W	264mA	● ● ● ● ● ● ● ● ●	24V / 14.40W	600mA	510
					24V / 8.06W	336mA		24V / 14.40W	600mA	
					24V / 8.64W	360mA		24V / 14.40W	600mA	
LBRQ-00-120-3-X	200.0	175.8	150.0	● ● ● ● ● ● ○ ● ● IR 850	24V / 9.50W	396mA	● ● ● ● ● ● ● ● ●	24V / 21.60W	900mA	595
					24V / 12.10W	504mA		24V / 21.60W	900mA	
					24V / 12.96W	540mA		24V / 21.60W	900mA	
LBRQ-00-160-3-X	240.0	215.8	190.0	● ● ● ● ● ● ○ ● ● IR 850	24V / 12.67W	528mA	● ● ● ● ● ● ● ● ●	24V / 28.80W	1200mA	740
					24V / 16.13W	672mA		24V / 28.80W	1200mA	
					24V / 17.28W	720mA		24V / 28.80W	1200mA	
LBRQ-00-200-3-X	280.0	255.8	230.0	● ● ● ● ● ● ○ ● ● IR 850	24V / 15.84W	660mA	● ● ● ● ● ● ● ● ●	24V / 36.00W	1500mA	900
					24V / 20.16W	840mA		24V / 36.00W	1500mA	
					24V / 21.60W	900mA		24V / 36.00W	1500mA	

Remarks: LBRQ 3 rows series can be cascaded (single colour / RGB) up to maximum length of 480mm.



# 2019 Direct Illumination

## LBRQ 3 ROWS SERIES – Available Accessories

### Optional Diffuser

Diffusers can be added to LBRQ 3 rows series for uniform light distribution. Adding a diffuser helps to reduce glare from glossy applications and produce lighting that is softer, more beautiful and more shadow-free. The thickness of a diffuser is 2mm.



### Optional Polarizer

There are two models of polarizers available – vertical (V) and horizontal (H). Adding a polarizer ensures the maximum elimination of unwanted glare and helps to absorb harsh reflection to provide better performance. The thickness of a polarizer is 0.8mm.



### Optional Connector

Standard Lighting  
Male Connector

PIN 1	24V
PIN 2	-
PIN 3	GND

M8  
Male Connector:

M8  
Pin Assignment

PIN 1	-	-
PIN 2	RED	24V
PIN 3	-	-
PIN 4	BLACK	GND

M12  
Male Connector

M12  
Pin Assignment

PIN 1	BROWN	24V
PIN 2	WHITE	-
PIN 3	BLUE	GND
PIN 4	BLACK	-
PIN 5	GRAY	-

Product Part Numbering System  
LBRQ-00-040-3-X-24V-M8

Product Part Numbering System  
LBRQ-00-040-3-X-24V-M12

## LBRX 6 ROWS SERIES – Direct, Rectangular Illumination

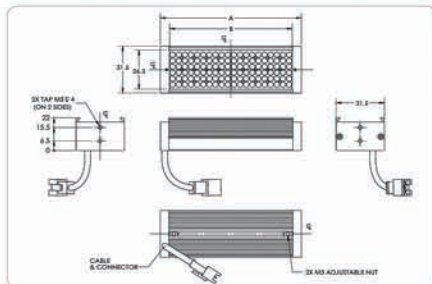
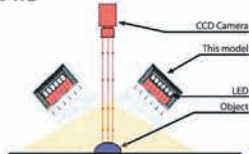
(for short working distance)

6 rows of SMD LEDs with lens arrays are arranged in a rectangular array to provide rectangular illumination, which can be mounted with different angle to provide differences in illumination reflection for image processing.

Applications: General Illumination, Label Inspection, Character Inspection, Code Recognition



Short WD

**Technical Specification:**

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

**Customize Lighting:**

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions [MM]		Color	Voltage / Watt		Current	RGB Color	Voltage / Watt		Current	Weight [g]
	A	B									
LBRX-00-040-6-X	52.0	40.0	● ● ●	24V / 1.97W	78mA	● ● ●	● ● ●	24V / 2.40W	100mA	70	
			IR 850	24V / 1.73W	72mA			24V / 1.92W	80mA		
			● ● ●	24V / 1.73W	72mA			24V / 2.16W	90mA		
LBRX-00-080-6-X	92.0	80.0	● ● ●	24V / 3.74W	156mA	● ● ●	● ● ●	24V / 4.80W	200mA	100	
			IR 850	24V / 3.46W	144mA			24V / 3.84W	160mA		
			● ● ●	24V / 3.46W	144mA			24V / 4.32W	180mA		
LBRX-00-120-6-X	132.0	120.0	● ● ●	24V / 5.62W	234mA	● ● ●	● ● ●	24V / 7.20W	300mA	130	
			IR 850	24V / 5.18W	216mA			24V / 5.76W	240mA		
			● ● ●	24V / 5.18W	216mA			24V / 6.48W	270mA		
LBRX-00-160-6-X	172.0	160.0	● ● ●	24V / 7.49W	312mA	● ● ●	● ● ●	24V / 9.60W	400mA	170	
			IR 850	24V / 6.91W	288mA			24V / 7.68W	320mA		
			● ● ●	24V / 6.91W	288mA			24V / 8.64W	360mA		
LBRX-00-200-6-X	212.0	200.0	● ● ●	24V / 9.36W	390mA	● ● ●	● ● ●	24V / 12.0W	500mA	210	
			IR 850	24V / 8.64W	360mA			24V / 9.60W	400mA		
			● ● ●	24V / 8.64W	360mA			24V / 10.8W	450mA		

Remarks: LBRX 6 rows series can be cascaded (single colour / RGB) up to maximum length of 760mm.

# 2019 Direct Illumination

## LBRX 6 ROWS SERIES – Available Accessories

### Optional Diffuser

Diffusers can be added to LBRX 6 rows series for uniform light distribution. Adding a diffuser helps to reduce glare from glossy applications and produce lighting that is softer, more beautiful and more shadow-free. The thickness of a diffuser is 2mm.



### Optional Polarizer

There are two models of polarizers available – vertical (V) and horizontal (H). Adding a polarizer ensures the maximum elimination of unwanted glare and helps to absorb harsh reflection to provide better performance. The thickness of a polarizer is 0.8mm.



### Optional Flexible Mounting Bracket

Mounting bracket is designed with flexible mounting purposes either by inward mounting or outward mounting.



### Optional Connector

Standard Lighting Male Connector	MB Male Connector	MB Pin Assignment	M12 Male Connector	M12 Pin Assignment																																	
<table border="1"> <tr><td>PIN 1</td><td>24V</td></tr> <tr><td>PIN 2</td><td>-</td></tr> <tr><td>PIN 3</td><td>GND</td></tr> </table>	PIN 1	24V	PIN 2	-	PIN 3	GND	<table border="1"> <tr><td>PIN 1</td><td>-</td><td>-</td></tr> <tr><td>PIN 2</td><td>RED</td><td>24V</td></tr> <tr><td>PIN 3</td><td>-</td><td>-</td></tr> <tr><td>PIN 4</td><td>BLACK</td><td>GND</td></tr> </table>	PIN 1	-	-	PIN 2	RED	24V	PIN 3	-	-	PIN 4	BLACK	GND		<table border="1"> <tr><td>PIN 1</td><td>BROWN</td><td>24V</td></tr> <tr><td>PIN 2</td><td>WHITE</td><td>-</td></tr> <tr><td>PIN 3</td><td>BLUE</td><td>GND</td></tr> <tr><td>PIN 4</td><td>BLACK</td><td>-</td></tr> <tr><td>PIN 5</td><td>GRAY</td><td>-</td></tr> </table>	PIN 1	BROWN	24V	PIN 2	WHITE	-	PIN 3	BLUE	GND	PIN 4	BLACK	-	PIN 5	GRAY	-	
PIN 1	24V																																				
PIN 2	-																																				
PIN 3	GND																																				
PIN 1	-	-																																			
PIN 2	RED	24V																																			
PIN 3	-	-																																			
PIN 4	BLACK	GND																																			
PIN 1	BROWN	24V																																			
PIN 2	WHITE	-																																			
PIN 3	BLUE	GND																																			
PIN 4	BLACK	-																																			
PIN 5	GRAY	-																																			
	Product Part Numbering System : LBRX-00-040-6-X-24V-M8		Product Part Numbering System : LBRX-00-040-6-X-24V-M12																																		

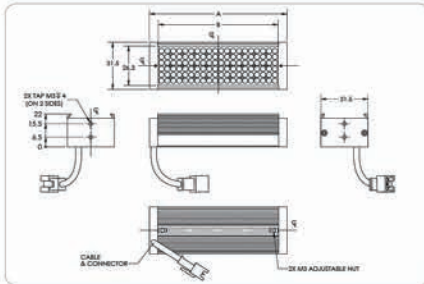
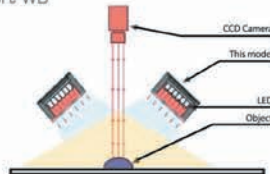
## LBRQ 6 ROWS SERIES – Direct, High Intensity, Multiple Rectangular Illumination (for short working distance)

LBRQ 6 rows series consists of a combination of 4 LBRX LED arrays fit into a rectangular structure. Each array's angle can be adjusted for different height application.

Applications: Lead Inspection, Character Inspection, Code Recognition



Short WD



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)			Color	Voltage / Watt	Current	RGB Color	Voltage / Watt	Current	Weight (g)
	A	B	C							
LBRQ-00-040-6-X	1200	95.8	70.0	●●●	24V / 7.49W	312mA	●●●	24V / 9.60W	400mA	355
				●●●	24V / 6.91W	288mA	●●●	24V / 7.65W	320mA	
				●●●	24V / 6.91W	288mA	●●●	24V / 8.64W	350mA	
LBRQ-00-080-6-X	1600	135.8	110.0	●●●	24V / 14.98W	624mA	●●●	24V / 19.20W	800mA	500
				●●●	24V / 13.82W	576mA	●●●	24V / 15.36W	640mA	
				●●●	24V / 13.82W	576mA	●●●	24V / 17.28W	720mA	
LBRQ-00-120-6-X	2000	175.8	150.0	●●●	24V / 22.46W	936mA	●●●	24V / 28.80W	1200mA	600
				●●●	24V / 20.74W	864mA	●●●	24V / 23.04W	960mA	
				●●●	24V / 20.74W	864mA	●●●	24V / 25.92W	1080mA	
LBRQ-00-160-6-X	2400	215.8	190.0	●●●	24V / 29.95W	1248mA	●●●	24V / 38.40W	1600mA	800
				●●●	24V / 27.65W	1152mA	●●●	24V / 30.72W	1280mA	
				●●●	24V / 27.65W	1152mA	●●●	24V / 34.56W	1440mA	
LBRQ-00-200-6-X	2800	255.8	230.0	●●●	24V / 37.44W	1560mA	●●●	24V / 48.00W	2000mA	900
				●●●	24V / 34.56W	1440mA	●●●	24V / 38.40W	1600mA	
				●●●	24V / 34.56W	1440mA	●●●	24V / 43.20W	1800mA	

Remarks: LBRQ 6 rows series can be cascaded (single colour / RGB) up to maximum length of 480mm.

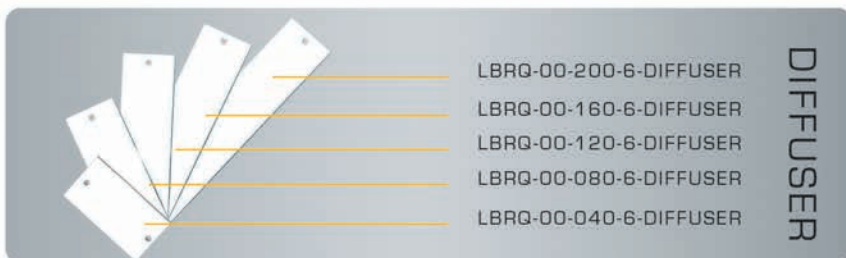


# 2019 Direct Illumination

## LBRQ 6 ROWS SERIES – Available Accessories

### Optional Diffuser

Diffusers can be added to LBRQ 6 rows series for uniform light distribution. Adding a diffuser helps to reduce glare from glossy applications and produce lighting that is softer, more beautiful and more shadow-free. The thickness of a diffuser is 2mm.



### Optional Polarizer

There are two models of polarizers available – vertical (V) and horizontal (H). Adding a polarizer ensures the maximum elimination of unwanted glare and helps to absorb harsh reflection to provide better performance. The thickness of a polarizer is 0.8mm.



### Optional Connector

Standard Lighting Male Connector

PIN 1	24V
PIN 2	-
PIN 3	GND

MB Male Connector

MB Pin Assignment:

PIN 1	-	-
PIN 2	RED	24V
PIN 3	-	-
PIN 4	BLACK	GND

M12 Male Connector

M12 Pin Assignment:

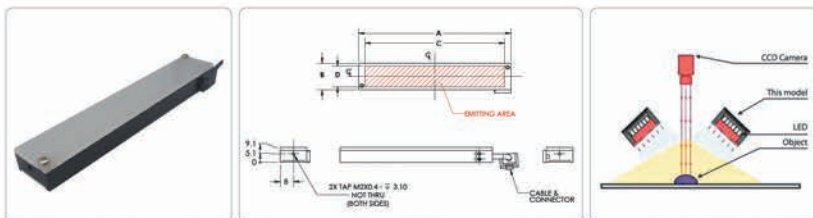
PIN 1	BROWN	24V
PIN 2	WHITE	-
PIN 3	BLUE	GND
PIN 4	BLACK	-
PIN 5	GRAY	-

Product Part Numbering System :  
LBRQ-00-040-6-X-24V-M8

Product Part Numbering System :  
LBRQ-00-040-6-X-24V-M12

## LBM SERIES – Compact Rectangular Illumination

LBM Series is a compact rectangular illumination which is suitable for small or narrow inspection.

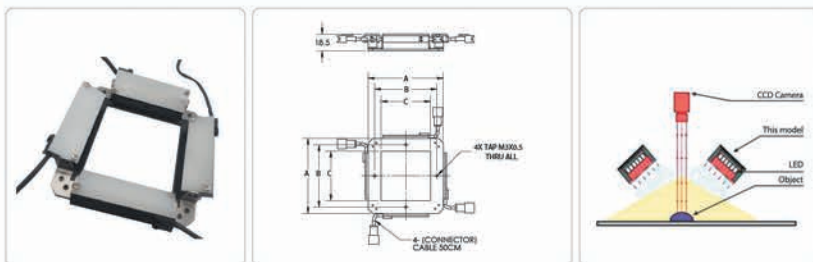


Model	Dimensions (MM)				Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D				
LBM-00-040-1-X-24V	50	9	42	5.6	●○	24V / 0.31W 24V / 0.62W	13mA 26mA	19
LBM-00-080-1-X-24V	92	9	84	5.6	●○	24V / 0.62W 24V / 1.25W	26mA 52mA	24
LBM-00-040-2-X-24V	50	13	42	9.6	●○	24V / 0.72W 24V / 1.44W	30mA 60mA	21
LBM-00-080-2-X-24V	92	13	84	9.6	●○	24V / 1.25W 24V / 2.50W	52mA 104mA	27
LBM-00-040-3-X-24V	50	16	42	12.6	●○	24V / 1.08W 24V / 2.16W	45mA 90mA	22
LBM-00-080-3-X-24V	92	16	84	12.6	●○	24V / 1.87W 24V / 3.74W	78mA 156mA	29

## LBMQ SERIES – Compact Rectangular Illumination

LBMQ Series are combination of 4 LBM LED arrays.

Each array angle can be adjusted for different height application.



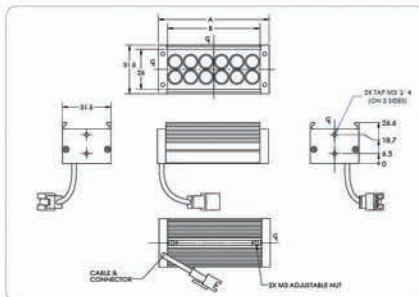
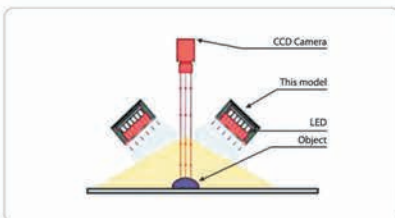
Model	Dimensions (MM)			Color	Voltage / Watt	Current	Weight (g)
	A	B	C				
LBMQ-00-040-1-X-24V	82	88	54	●○	24V / 1.25W 24V / 2.49W	52mA 104mA	102
LBMQ-00-040-2-X-24V	86	88	54	●○	24V / 2.88W 24V / 4.99W	120mA 208mA	116
LBMQ-00-040-3-X-24V	89	88	54	●○	24V / 3.74W 24V / 8.64W	156mA 360mA	120

# Direct Illumination

## MLBX2 SERIES – Direct, High Intensity, Rectangular Illumination (for middle working distance)

2 rows of mid-power SMD LEDs with lens arrays are arranged in a rectangular array to provide rectangular illumination, which can be mounted with different angles to provide differences in illumination reflection for image processing.

Applications: General Illumination, Label Inspection, Character Inspection, Code Recognition



### Technical Specification:

- Color Red, Green, Blue, White and RGB
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

### LED Wavelength [OSRAM LED Light Technology]

- Red Led is 620nm
- Blue Led is 450nm
- Green Led is 540nm

Model	Dimensions (MM)		Color	Voltage / Watt		Current	Weight (g)
	A	B					
MLBX2-00-060-2-X	72.0	60.0	● ● ● ○	24V / 2.304W	96mA	75	
MLBX2-00-090-2-X	102.0	90.0	● ● ● ○	24V / 3.46W	144mA	96	
MLBX2-00-120-2-X	132.0	120.0	● ● ● ○	24V / 4.61W	192mA	118	
MLBX2-00-150-2-X	162.0	150.0	● ● ● ○	24V / 5.76W	240mA	139	

Model	Dimensions (MM)		Color	Voltage / Watt		Current	Weight (g)
	A	B					
MLBX2-00-060-2-RGB	72.0	60.0	● ● ●	24V / 1.20W	50mA	90	
MLBX2-00-090-2-RGB	102.0	90.0	● ● ●	24V / 0.96W	40mA	120	
				24V / 0.96W	40mA		
				24V / 1.80W	75mA		
MLBX2-00-120-2-RGB	132.0	120.0	● ● ●	24V / 1.44W	60mA	140	
				24V / 1.44W	60mA		
				24V / 2.40W	100mA		
MLBX2-00-150-2-RGB	162.0	150.0	● ● ●	24V / 1.92W	80mA	170	
				24V / 1.92W	80mA		
				24V / 3.00W	125mA		
				24V / 2.40W	100mA		
				24V / 2.40W	100mA		

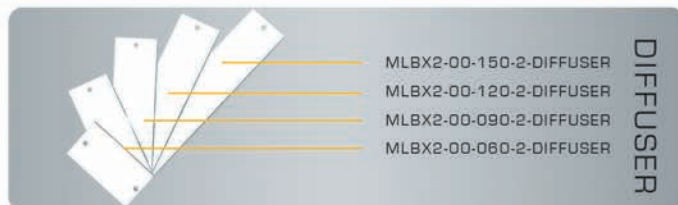
Remarks: MLBX part numbers are changed to MLBX2  
MLBX2 series can cascade (Single colour / RGB) able to customize to maximum length 1170mm.

# Direct Illumination

## MLBX2 SERIES – Available Accessories

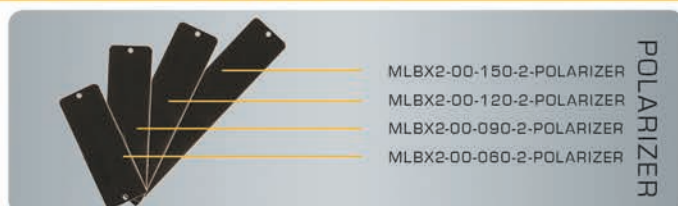
### Optional Diffuser

Diffusers can be added to MLBX2 series for uniform light distribution. Adding a diffuser helps to reduce glare from glossy applications and produce lighting that is softer, more beautiful and more shadow-free. The thickness of a diffuser is 2mm.



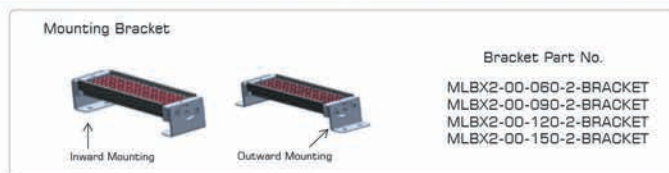
### Optional Polarizer

Polarizers can be added to MLBX2 series in the case in which polarised light is required to acquire ideal results. Adding a polarizer ensures the maximum elimination of unwanted glare and helps to absorb harsh reflection to provide better performance. The thickness of a polarizer is 0.8mm.



### Optional Flexible Mounting Bracket

Optional mounting bracket is designed with flexible mounting purpose, either by inward mounting or outward mounting.



### Optional Connector

#### Standard Lighting Male Connector



PIN 1	24V
PIN 2	-
PIN 3	GND

#### MB Male Connector



#### MB Pin Assignment

PIN 1	-	-
PIN 2	RED	24V
PIN 3	-	-
PIN 4	BLACK	GND

Product Part Numbering System :  
MLBX2-00-060-2-X-24V-MB

#### M12 Male Connector



#### M12 Pin Assignment

PIN 1	BROWN	24V
PIN 2	WHITE	-
PIN 3	BLUE	GND
PIN 4	BLACK	-
PIN 5	GRAY	-

Product Part Numbering System :  
MLBX2-00-060-2-X-24V-M12



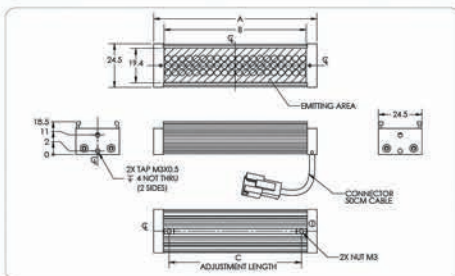
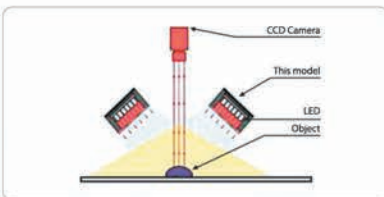
2019

# Direct Illumination

## HLBRX SERIES – Direct, High Intensity, Rectangular Illumination (for middle working distance)

3 rows of SMD LEDs are arranged in a rectangular array to provide rectangular illumination that can be mounted with different angles to provide differences in illumination reflection for image processing.

Applications: General Illumination, Label Inspection, Character Inspection, Code Recognition



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

### LED Wavelength (OSRAM LED Light Technology)

- Red Led is 620nm
- Blue Led is 460nm
- Green Led is 640nm

Model	Dimensions (MM)			Color	Voltage / Watt	Current	Weight (g)
	A	B	C				
HLBRX-00-040-3-X	52	40	34.6	●●○	24V / 2.99W 24V / 3.36W	120mA 140mA	46
HLBRX-00-080-3-X	92	80	74.6	●●○	24V / 5.76W 24V / 6.72W	240mA 280mA	66

## Optional Connector

**Standard Lighting Male Connector**

PIN 1	24V
PIN 2	-
PIN 3	GND

**M8 Male Connector**

**M8 Pin Assignment**

PIN 1	-	-
PIN 2	RED	24V
PIN 3	-	-
PIN 4	BLACK	GND

**M12 Male Connector**

**M12 Pin Assignment**

PIN 1	BROWN	24V
PIN 2	WHITE	-
PIN 3	BLUE	GND
PIN 4	BLACK	-
PIN 5	GRAY	-

Product Part Numbering System:  
HLBRX-00-040-3-X M8

Product Part Numbering System:  
HLBRX-00-040-3-X M12

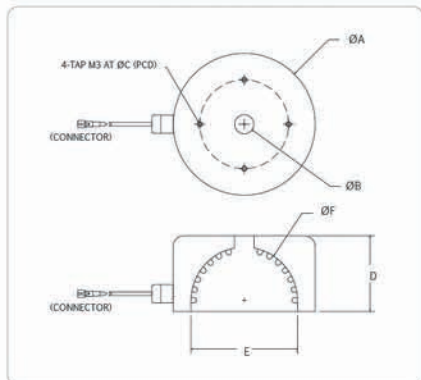
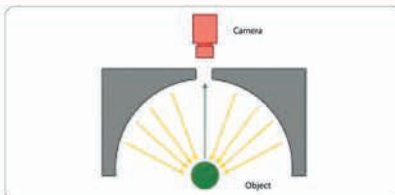
2019

# Direct Illumination

## IDD SERIES – Direct Dome Illumination

Multiple rows of LEDs are mounted inside a dome densely, allowing strong irradiation to be made by shining extreme bright light at whole angles.

Applications: SMD LED and Resistor Inspection, Crack and Chip Inspection



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions [MM]						Color	Voltage / Watt	Current	Weight [g]
	ØA	ØB	ØC	D	E	ØF				
IDD-00-045-4-X	55.0	12.0	40.0	23.5	40.0	40.0	● 24V / 2.88W ● 24V / 3.60W	120mA 150mA	80	
IDD-00-075-7-X	80.0	11.0	50.0	42.5	60.0	60.0	● 24V / 7.92W ● 24V / 10.08W	330mA 420mA	195	

Remark: 2 types of white are available- W: Cool White WW: Yellowish White

## Optional Connector

Standard Lighting Male Connector

PIN 1	24V
PIN 2	-
PIN 3	GND

M8 Male Connector

M8 Pin Assignment

PIN 1	-	-
PIN 2	RED	24V
PIN 3	-	-
PIN 4	BLACK	GND

M12 Male Connector

M12 Pin Assignment

PIN 1	BROWN	24V
PIN 2	WHITE	-
PIN 3	BLUE	GND
PIN 4	BLACK	-
PIN 5	GRAY	-

Product Part Numbering System :  
IDD-00-045-4-X-24V-M8

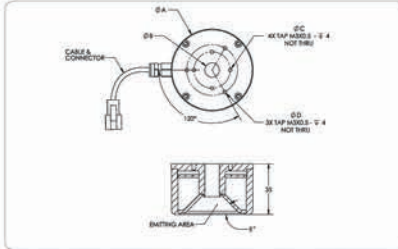
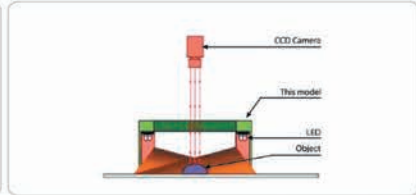
Product Part Numbering System :  
IDD-00-045-4-X-24V-M12

# 2019 Diffused Illumination

## DLR3 SERIES – Diffused, Angular Ring Illumination

DLR3 series provides diffused uniform illumination covering a wide surface, which reduces glare for reflective surface inspections.

Applications: Character Recognition on Shining Surface, Lead Inspection



**Technical Specification:**

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

**Customize Lighting:**

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

**LED Wavelength (OSRAM LED Light Technology)**

- Red Led is 620nm
- Blue Led is 450nm
- Green Led is 540nm

Model	Dimensions (MM)					Color	Voltage / Watt	Current	Weight (g)
	ØA	ØB	ØC	ØD	E <sup>0</sup>				
DLR3-45-050-1-X	56.4	10	25	35	45		24V / 2.90W	120 mA	110
DLR3-45-080-1-X	81	30.5	54	56	45		24V / 4.30W	180 mA	145
DLR3-45-100-1-X	105.2	45.6	80	95	45		24V / 6.50W	270 mA	225
DLR3-45-130-1-X	131.5	74	95	106	45		24V / 8.60W	360 mA	280
DLR3-60-050-1-X	56.4	10	25	35	60		24V / 2.90W	120 mA	100
DLR3-60-080-1-X	81	36.2	54	56	60		24V / 4.30W	180 mA	145
DLR3-60-100-1-X	105.2	57	80	95	60		24V / 6.50W	270 mA	205
DLR3-60-130-1-X	131.5	84	95	106	60		24V / 8.60W	360 mA	285

Remarks: DLR2 part numbers are changed to DLR3

### Optional Connector

**Standard Lighting Male Connector**

PIN 1	24V
PIN 2	-
PIN 3	GND

**M8 Male Connector**

**M8 Pin Assignment**

PIN 1	-	-
PIN 2	RED	24V
PIN 3	-	-
PIN 4	BLACK	GND

**M12 Male Connector**

**M12 Pin Assignment**

PIN 1	BROWN	24V
PIN 2	WHITE	-
PIN 3	BLUE	GND
PIN 4	BLACK	-
PIN 5	GRAY	-

Product Part Numbering System :  
DLR3-45-050-1-X-24V-M8

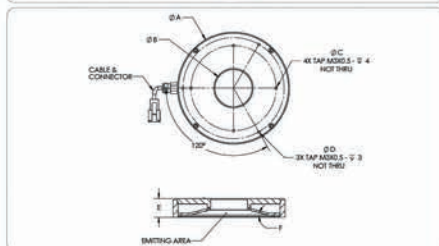
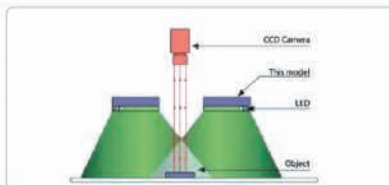
Product Part Numbering System :  
DLR3-45-050-1-X-24V-M12

# 2019 Diffused Illumination

## DFR4 SERIES – Diffused, Angular Ring Illumination

DFR4 series provides diffused uniform illumination over a conical surface, which makes it possible to illuminate a work piece from almost any angle.

Applications: Printed Character on IC Chips, PCB Components Inspection, Printing on Caps and Wafer OCR Inspection



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

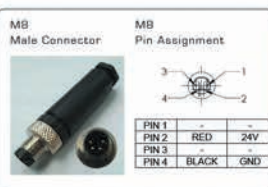
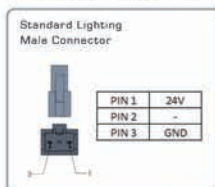
### LED Wavelength (OSRAM LED Light Technology)

- Red Led is 620nm
- Blue Led is 450nm
- Green Led is 540nm

Model	Dimensions [MM]						Color	Voltage / Watt	Current	Weight (g)
	ØA	ØB	Ø	D	E	F <sup>Ø</sup>				
DFR4-00-050-1-X	56	8	25	35	18	0	● ● ● ○	24V / 2.6W 24V / 2.6W	108 mA 108 mA	60
DFR4-00-080-1-X	81	21	54	56	18	0	● ● ● ○	24V / 4.70W 24V / 4.70W	196 mA 196 mA	110
DFR4-00-100-1-X	105.2	30	80	95	18	0	● ● ● ○	24V / 5.40W 24V / 5.40W	225 mA 225 mA	160
DFR4-00-130-1-X	131.5	45	95	106	18	0	● ● ● ○	24V / 7.20W 24V / 7.20W	300 mA 300 mA	230
DFR4-15-080-1-X	81	19	54	56	17.5	15	● ● ● ○	24V / 4.70W 24V / 4.70W	196 mA 196 mA	115
DFR4-15-100-1-X	105.2	35	80	95	17.5	15	● ● ● ○	24V / 5.40W 24V / 5.40W	225 mA 225 mA	170
DFR4-15-130-1-X	131.5	45.6	95	106	17.5	15	● ● ● ○	24V / 7.20W 24V / 7.20W	300 mA 300 mA	210
DFR4-30-050-1-X	56	12	25	35	17.5	30	● ● ● ○	24V / 2.6W 24V / 2.6W	108 mA 108 mA	80
DFR4-30-080-1-X	81	25	54	56	17.5	30	● ● ● ○	24V / 4.70W 24V / 4.70W	196 mA 196 mA	145
DFR4-30-100-1-X	105.2	44	80	95	17.5	30	● ● ● ○	24V / 5.40W 24V / 5.40W	225 mA 225 mA	230
DFR4-30-130-1-X	131.5	66	95	106	17.5	30	● ● ● ○	24V / 7.18W 24V / 7.18W	299 mA 299 mA	355

### Optional Connector

Remarks: DFR3 part numbers are changed to DFR4



Product Part Numbering System :  
DFR4-00-050-1-X-24V-M8

Product Part Numbering System :  
DFR4-00-050-1-X-24V-M12




# 2019 Indirect Illumination

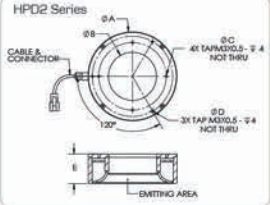
## HPD & HPD2 SERIES – Diffused Ring Illumination

Mid-power LEDs are arranged uniformly in a ring structure with a moulded diffuser to achieve uniform area illumination with higher flexibility.


Applications: Shining Surface and Food Packaging Inspection



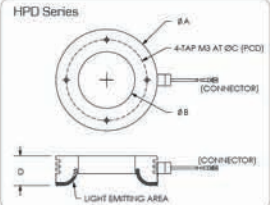
HPD2 Series



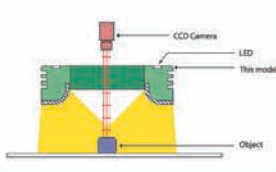
HPD2 Series



HPD Series



HPD Series



Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

LED Wavelength [OSRAM LED Light Technology]

- Red Led is 620nm
- Blue Led is 450nm
- Green Led is 540nm

Model	Dimensions (MM)					Color	Voltage / Watt	Current	Weight (g)
	ØA	ØB	ØC	Ø	E				
HPD2-00-050-1-X	56	15.5	25	35	35	●●●○	24V / 2.88W	120 mA	100
HPD2-00-080-1-X	81	34.2	54	56	35	●●●○	24V / 4.32W	180 mA	155
HPD2-00-100-1-X	105.2	57	80	95	35	●●●○	24V / 6.48W	270 mA	210
HPD2-00-130-1-X	131.5	84	106	95	35	●●●○	24V / 8.64W	360 mA	275


Model	Dimensions (MM)				Color	Voltage / Watt	Current	Weight (g)
	ØA	ØB	ØC	Ø				
HPD-00-170-1-X	176.6	111.0	150	29.6	●●●○	24V / 18.00W	750mA	535
HPD-00-240-1-X	245.0	158.5	200	38.0	●●●○	24V / 25.20W 24V / 26.88W	1050mA 1120mA	1180

Model	Dimensions (MM)				Color	Voltage / Watt	Current	Weight (g)
	ØA	ØB	ØC	Ø				
HPD-00-240-3-RGB	245.0	158.5	200	38.0	●●●	24V / 21.84W 24V / 15.12W 24V / 16.80W	910mA 630mA 700mA	1180




### Optional Connector

Standard Lighting Male Connector



PIN 1	24V
PIN 2	-
PIN 3	GND

M8 Male Connector Pin Assignment



PIN 1	-	-
PIN 2	RED	24V
PIN 3	-	-
PIN 4	BLACK	GND

M12 Male Connector Pin Assignment



PIN 1	BROWN	24V
PIN 2	WHITE	-
PIN 3	BLUE	GND
PIN 4	BLACK	-
PIN 5	GRAY	-

Product Part Numbering System :  
HPD-00-070-1-X-24V-M8

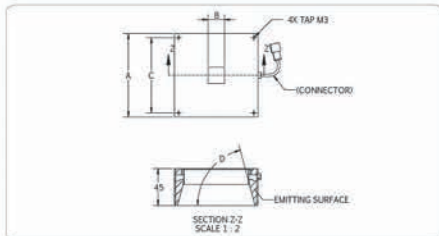
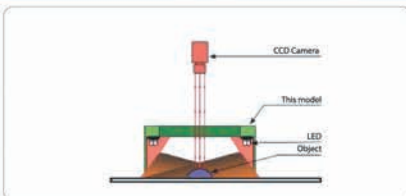
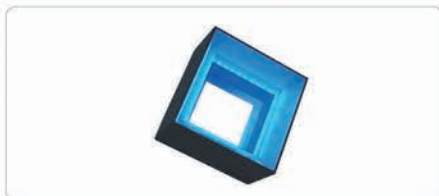
Product Part Numbering System :  
HPD-00-070-1-X-24V-M12

# Diffused Illumination

## DLS2 & DLW2 SERIES – Diffused Square Illumination

DLS2 & DLW2 series provide diffused uniform illumination over a square surface, which prevents glare during reflective surface inspection. This illumination product is suitable for inspection of square or rectangular workpiece.

Applications: Character Recognition on Shining Surface, Lead Inspection



### Technical Specification:

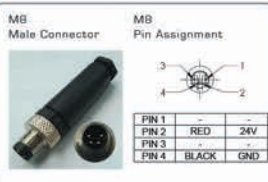
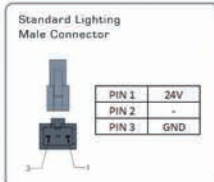
- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)				Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D <sup>φ</sup>				
DLS2-60-050-1-X	50.8	16.0	40.0	60	● ● ● ○	24V / 2.88W 24V / 1.92W	120mA 80mA	120
DLS2-60-070-1-X	76.2	20.0	66.0	60	● ● ● ○	24V / 2.88W 24V / 4.32W	120mA 180mA	220
DLS2-60-100-1-X	101.6	20.0	91.5	60	● ● ● ○	24V / 4.32W 24V / 5.76W	180mA 240mA	300
DLW2-60-070-1-X	76.2	40.0	66.0	60	● ● ● ○	24V / 2.88W 24V / 4.32W	120mA 180mA	190
DLW2-60-100-1-X	101.6	66.0	91.5	60	● ● ● ○	24V / 4.32W 24V / 5.76W	180mA 240mA	280

### Optional Connector



Product Part Numbering System :  
DLS2-60-050-1-X-24V-M8

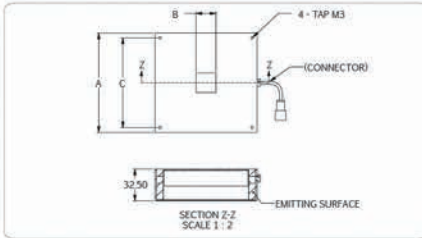
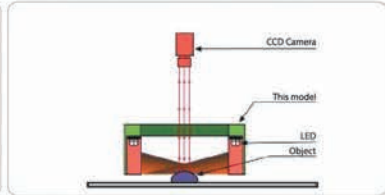
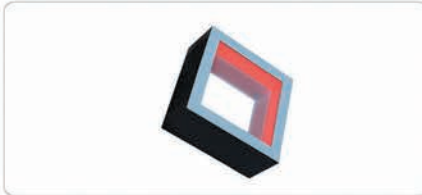
Product Part Numbering System :  
DLS2-60-050-1-X-24V-M12

# 2019 Diffused Illumination

## DLQ2 & DLF2 SERIES - Diffused Square Illumination

DLQ2 & DLF2 series is a low angle diffused uniform illumination from 4 sides, highlighting the edges of the inspection object while not producing any unwanted shadows. These 2 illumination products are suitable for the inspection of square or rectangular workpiece.

Applications: SDA Ball Inspection, QFP Lead Inspection



### Technical Specification:

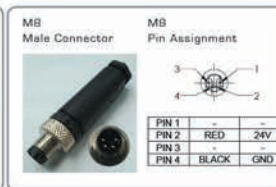
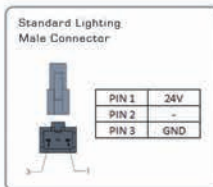
- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)			Color	Voltage / Watt	Current	Weight (g)
	A	B	C				
DLQ2-90-030-1-X	31.6	10.0	21.0	● ● ● ○	24V / 1.44W 24V / 1.44W	60mA 60mA	50
DLQ2-90-050-1-X	50.8	10.0	40.0	● ● ● ○	24V / 2.88W 24V / 1.92W	120mA 60mA	100
DLQ2-90-070-1-X	76.2	20.0	66.0	● ● ● ○	24V / 2.88W 24V / 4.32W	120mA 180mA	150
DLQ2-90-100-1-X	101.6	20.0	91.5	● ● ● ○	24V / 4.32W 24V / 5.76W	180mA 240mA	220
DLF2-90-050-1-X	50.8	26.0	40.0	● ● ● ○	24V / 2.88W 24V / 1.92W	120mA 60mA	90
DLF2-90-070-1-X	76.2	55.0	66.0	● ● ● ○	24V / 2.88W 24V / 4.32W	120mA 180mA	160
DLF2-90-100-1-X	101.6	80.0	91.5	● ● ● ○	24V / 4.32W 24V / 5.76W	180mA 240mA	220

### Optional Connector



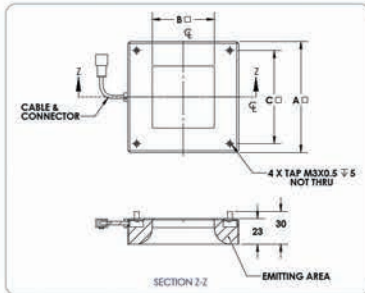
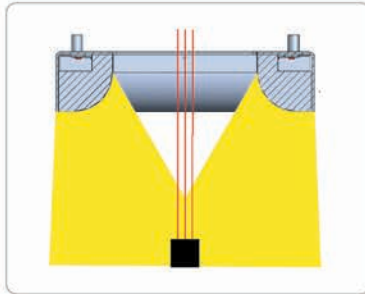
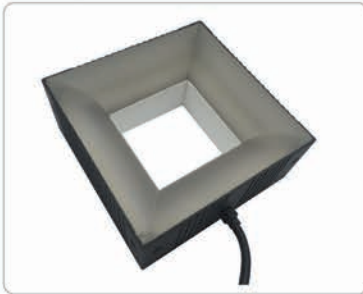
Product Part Numbering System :  
DLQ2-90-030-1-X-24V-M8

Product Part Numbering System :  
DLQ2-90-030-1-X-24V-M12



### DLC SERIES – Diffused Angular Illumination

DLC series is an extension version of diffused illumination and low angle illumination which provides even multi angle illumination.



#### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC input Power

#### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Contact Technical Sales for More Information

Model	Dimensions (MM)			Color	Voltage / Watt	Current	Weight (g)
	A	B	C				
DLC-00-070-1-X-24V	70	26	54		24V / 2.11W	88mA	264
DLC-00-100-1-X-24V	100	56	84		24V / 4.22W	176mA	528
DLC-00-120-1-X-24V	120	76	104		24V / 5.28W	220mA	660

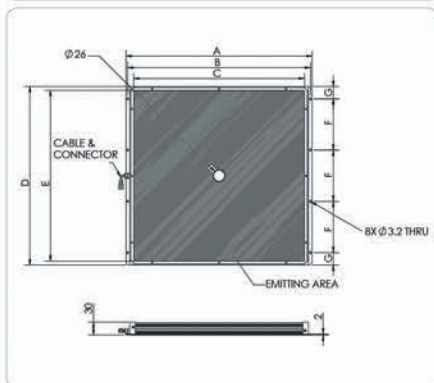
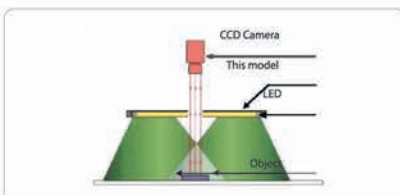
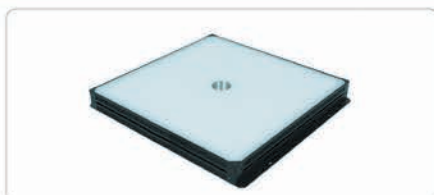


# 2019 Diffused Illumination

## BHLQ SERIES – High Intensity Diffused Front Light

BHLQ series is a square shaped diffused illumination that provides even illumination that reduce glares and shadows.

Applications: Robotic Picking, Identification of Missing Part, Dimensions Measurements, Shape Recognition



### Technical Specification:

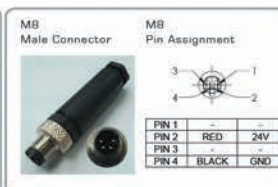
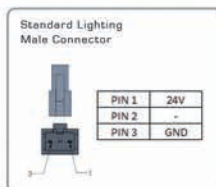
- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions [MM]							Color	Voltage / Watt.	Current	Weight (g)
	A	B	C	D	E	F	G				
BHLQ-00-240X240-X-X	276.0	268.0	240.0	258.0	240.0	140.0	59.0	● ● ● ●	24V / 28.80W 24V / 38.52W	1200mA 1605mA	1500
BHLQ-00-400X400-X-X	436.0	428.0	400.0	418.0	400.0	360.0	29.0	● ● ● ●	24V / 80.64W 24V / 107.64W	3360mA 4485mA	2650

## Optional Connector



Product Part Numbering System :  
BHLQ-00-240X240-X-X-24V-M8

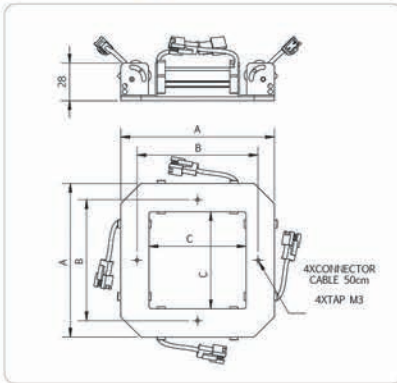
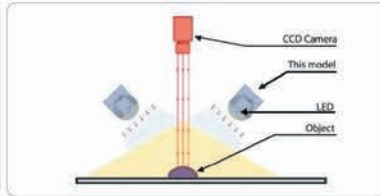
Product Part Numbering System :  
BHLQ-00-240X240-X-X-24V-M12

# Diffused Illumination

## LBDQ SERIES – Diffused Multiple Rectangular Illumination

LBDQ series consists of a combination of 4 light tubes arranged in a rectangular structure to provide uniform lighting. Each light tube's angle can be adjusted for different height applications.

Applications: Label Inspection, Character Inspection, Code Recognition



**Technical Specification:**

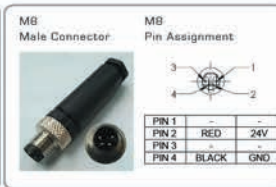
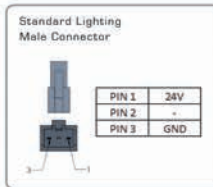
- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

**Customize Lighting:**

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)			Color	Voltage / Watt	Current	Weight (g)
	A	B	C				
LBDQ-00-050-1-X	114.0	90.0	72.0	● ● ● ● ● ● ● ●	24V / 2.88W 24V / 2.88W	120mA 120mA	200
LBDQ-00-100-1-X	164.0	140.0	122.0	● ● ● ● ● ● ● ●	24V / 5.76W 24V / 5.76W	240mA 240mA	320

### Optional Connector



Product Part Numbering System :  
LBDQ-00-050-1-X-24V-M8

Product Part Numbering System :  
LBDQ-00-050-1-X-24V-M12

# 2019 Indirect Illumination

## IDS5 SERIES – Indirect Dome Illumination

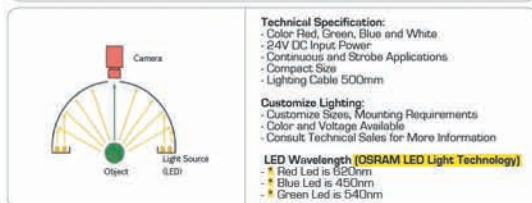
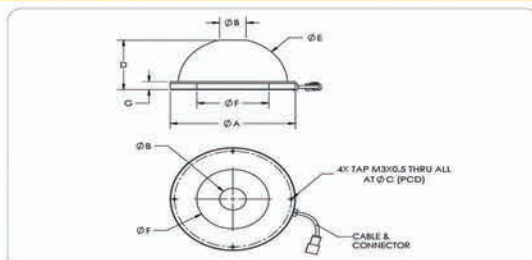
IDS5 series provides indirect illumination from an inner conical surface, which allow a work piece to be illuminated from all angles, resulting in excellent illumination of the inspection object without creating any unwanted glare, hotspots or shadows. This illumination is suitable for applications that involve inspection of reflective surfaces which contents are required to be highlighted and inspected.

Applications: Cracks, Chips, Stains & Marks on Circular or Cylindrical Objects Inspection, Solder and Substrate Inspection



BRACKET PART NO.

IDS5-00-050-X-X-BRACKET  
IDS5-00-070-X-X-BRACKET  
IDS5-00-100-X-X-BRACKET  
IDS5-00-150-X-X-BRACKET  
IDS5-00-200-X-X-BRACKET  
IDS5-00-250-X-X-BRACKET



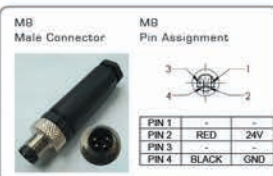
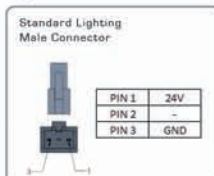
Model	Dimensions [MM]							Color	Voltage / Watt	Current	Weight [g]
	A	B	C	D	E	F	G				
*IDS5-00-050-1-X	68	10	60	33.8	53	37.4	9	●●● ●●○ ●●○	24V / 5.93W 24V / 7.53W 24V / 1.54W	343mA 313mA 64mA	78
*IDS5-00-070-1-X	95	20	85	44.5	78	61	9	●●● ●●○ ●●○	24V / 9.07W 24V / 11.75W 24V / 2.304W	378mA 432mA 96mA	115
*IDS5-00-100-1-X	118	25	110	56.8	103	85.4	9	●●● ●●○ ●●○	24V / 12.95W 24V / 16.8W 24V / 3.84W	540mA 700mA 160mA	152
*IDS5-00-150-1-X	185	40	172	89.8	165	138	12	●●● ●●○ ●●○	24V / 24.0W 24V / 30.3W 24V / 6.48W	1000mA 800mA 800mA	483
*IDS5-00-200-1-X	232	50	222	112.8	212	193	12	●●● ●●○ ●●○	24V / 31.92W 24V / 39.16W 24V / 8.0W	1330mA 1380mA 150mA	520
*IDS5-00-250-1-X	284	50	272	139.4	261.6	240	12	●●● ●●○ ●●○	24V / 38.07W 24V / 38.07W 24V / 38.07W	1500mA 1500mA 1500mA	780
*IDS4-00-360-1-X	381	36.5	369	189	360	300	12	●●● ●●○ ●●○	24V / 37.2W 24V / 37.2W	1550mA 1500mA	1800

Model	Dimensions [MM]							Color	Voltage / Watt	Current	Weight [g]
	A	B	C	D	E	F	G				
IDS4-00-150-1-RGB	185	40	172	89.8	165	113	12	●●●	24V / 7.20W 24V / 6.72W 24V / 6.72W	300mA 280mA 280mA	1000
IDS4-00-200-1-RGB	232	50	222	112.8	212	160	12	●●●	24V / 6.72W 24V / 6.72W 24V / 6.72W	280mA 280mA 280mA	1300



### Optional Connector



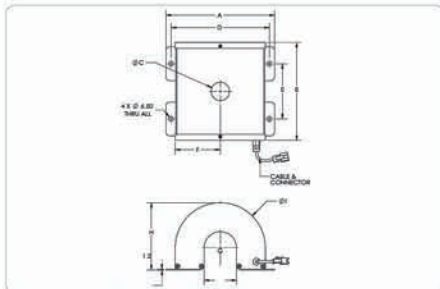
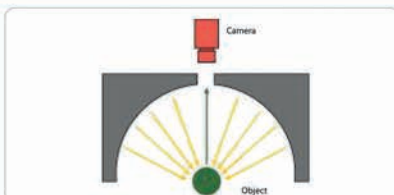
Product Part Numbering System:  
IDS5-00-050-1-X-24V M8

Product Part Numbering System :  
IDS5-000-050-1-X-24V M12

## IDT3 SERIES – Indirect Tunnel Illumination

IDT3 series provides indirect illumination from an inner cylindrical surface providing uniform illumination for a work piece from all angles, resulting in excellent illumination of the inspection object without creating unwanted glare, hotspots or shadows.

Applications: Inspection of Cracks, Chips, Stains and Marks on Cylindrical Surfaces. Shafts Inspection

**Technical Specification:**

- Color Red, Green, Blue, White & RGB
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

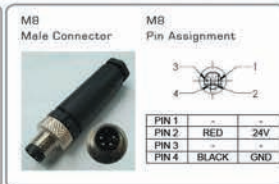
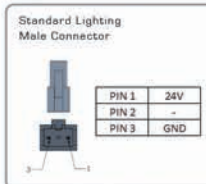
**Customize Lighting:**

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions [MM]								Color	Voltage / Watt	Current	Weight [g]	
	A	B	ØC	D	E	F	G	H					ØI
IDT3-00-120-1-X	148.0	133.0	25.0	133.6	75.0	61.3	44.0	91.5	122.5	● ● ● ● ● ●	24V / 8.64W 24V / 7.68W	360mA 320mA	710
IDT3-00-150-1-X	177.8	163.0	25.0	163.8	103.9	76.3	74.0	106.5	152.5	● ● ● ● ● ●	24V / 10.80W 24V / 9.60W	450mA 400mA	530
IDT3-00-200-1-X	227.2	163.0	25.0	213.2	105.0	101.3	124.0	131.5	202.5	● ● ● ● ● ●	24V / 10.80W 24V / 9.60W	450mA 400mA	750

Model	Dimensions [MM]								Color	Voltage / Watt	Current	Weight [g]	
	A	B	ØC	D	E	F	G	H					ØI
IDT3-00-120-1-RGB	148.0	133.0	25.0	133.6	75.0	61.3	44.0	91.5	122.5	● ● ● ● ● ●	24V / 4.80W 24V / 3.84W 24V / 3.84W	200mA 160mA 160mA	710
IDT3-00-150-1-RGB	177.8	163.0	25.0	163.8	103.9	76.3	74.0	106.5	152.5	● ● ● ● ● ●	24V / 6.00W 24V / 4.80W 24V / 4.80W	250mA 200mA 200mA	530
IDT3-00-200-1-RGB	227.2	163.0	25.0	213.2	105.0	101.3	124.0	131.5	202.5	● ● ● ● ● ●	24V / 6.00W 24V / 4.80W 24V / 4.80W	250mA 200mA 200mA	750

## Optional Connector



Product Part Numbering System :  
IDT3-00-120-1-X-24V-M8

Product Part Numbering System :  
IDT3-00-120-1-X-24V-M12

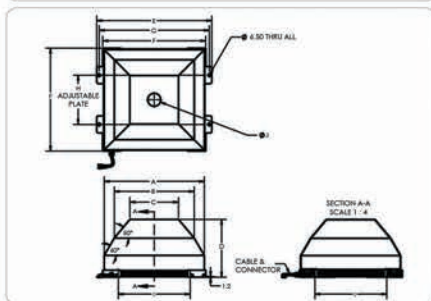
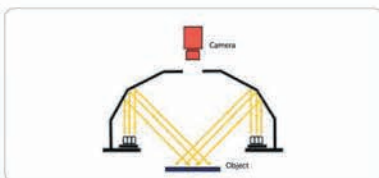


# 2019 Indirect Illumination

## IDQ3 SERIES – Indirect Square Illumination

IDQ3 Series provides indirect illumination from an inner square surface providing uniform illumination for a work piece from all angles which is suitable for the inspection of square or rectangular objects that may have reflective surfaces.

Applications: Cracks, Chips, Stains and Marks on Square or Rectangular Objects



### Technical Specification:

- Color Red, Green, Blue, White & RGB
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size- Lighting Cable 500mm

### Customize Lighting:

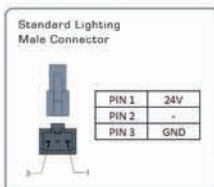
- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)										Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F	G	H	I	J				
IDQ3-00-120-X-X	210.0	189.6	110.9	126.2	24.0	218.0	226	74.0	138.2	35.0	●●○	24V / 17.28W	720mA	1420
IDQ3-00-190-X-X	270.0	215.7	131.1	156.0	30.0	278.0	286.2	134	198.0	35.0	●●●○	24V / 25.92W	1080mA	1980
IDQ3-00-300-X-X	390.0	335.5	251.3	156.0	419.4	398.0	405.4	254.0	318.2	35.0	●●●○	24V / 43.20W	1800mA	3000

Model	Dimensions (MM)										Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F	G	H	I	J				
IDQ3-00-120-X-RGB	210.0	189.6	110.9	126.2	24.0	218.0	226	74.0	138.2	35.0	●●●	24V / 9.60W	400mA	1420
IDQ3-00-190-X-RGB	270.0	215.7	131.1	156.0	30.0	278.0	286.2	134	198.0	35.0	●●●	24V / 7.86W	320mA	1980
IDQ3-00-300-X-RGB	390.0	335.5	251.3	156.0	419.4	398.0	405.4	254.0	318.2	35.0	●●●	24V / 14.40W	600mA	3000



## Optional Connector



Product Part Numbering System :  
IDQ3-00-120-X-X-24V-M8

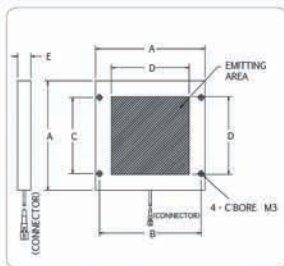
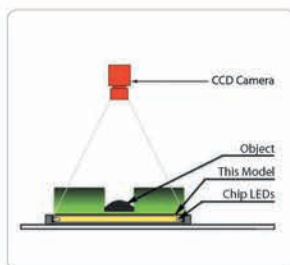
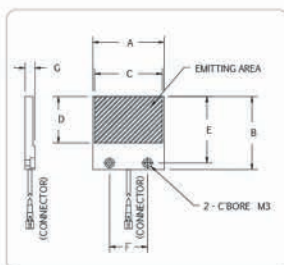
Product Part Numbering System :  
IDQ3-00-120-X-X-24V-M12

# Backlight Illumination

## BHDS & BHD SERIES – Side Backlight Illumination

BHDS & BHD series consist of a 4-sided lighting fit into a diffuser block where light shines from the flat surface of the block.

Applications: Lead Frame Inspection, Shape Recognition, Size Measurement



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

### LED Wavelength (OSRAM LED Light Technology)

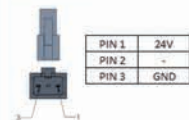
- Red Led is 620nm
- Blue Led is 460nm
- Green Led is 540nm

Model	Dimensions (MM)							Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F	G				
BHDS-00-25X36-1-X	38.5	43.5	35.0	25	40.0	18.5	5.3	●●●	24V / 0.38W	15mA	27
BHDS-00-31X58-1-X	60.2	43.5	56.3	31	40.0	40.0	5.4	●●●	24V / 0.48W	20mA	38
BHDS-00-070-1-X	98.5	84.5	68.5	70.0	81.0	60.0	5.3	●●●	24V / 0.72W	30mA	80
BHDS-00-30X150-1-X	154.2	49.3	150.2	30	45.8	40	8.0	●●●	24V / 2.16W	90mA	105

Model	Dimensions (MM)					Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E				
BHD-00-070-1-X	98.5	91.5	68.5	70	5.3	●●●	24V / 2.88W	120mA	95
BHD-00-100-1-X	128.5	121.5	100.0	100.0	5.3	●●●	24V / 2.88W	120mA	145
BHD-00-100X80-1-X	113	105	80	100	9	●●●	24V / 4.32W	180mA	215

### Optional Connector

#### Standard Lighting Male Connector



#### M8 Male Connector

#### M8 Pin Assignment



#### M12 Male Connector

#### M12 Pin Assignment



Product Part Numbering System :  
BHDS-00-25X36-1-X-24V-M8

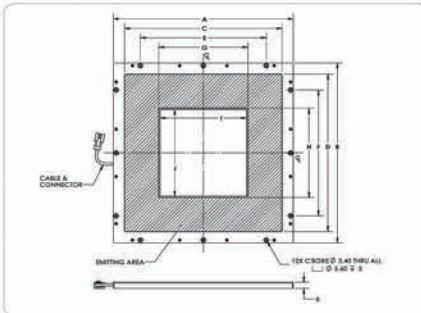
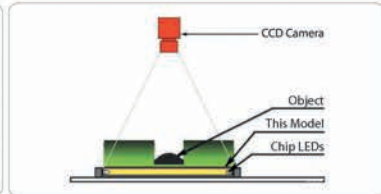
Product Part Numbering System :  
BHDS-00-25X36-1-X-24V-M12

# 2019 BHDQ Series

## BHDQ SERIES – Side Backlight Illumination

BHDQ series is a four-sided backlight with a diffuser that produces highly uniform light distribution. It is used in applications where the side or the corner of an object is inspected.

Applications: Lead Frame Inspection, Shape Recognition, Size Measurement



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

### LED Wavelength [OSRAM LED Light Technology]

- Red Led is 620nm
- Blue Led is 460nm
- Green Led is 540nm

Model	Dimensions (MM)									Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F	G	H	I				
BHDQ-00-200-1-X	228.5	228.5	200	200	160	160	113.6	110	110	<span style="color: red;">●</span> <span style="color: blue;">●</span> <span style="color: green;">●</span>	24V / 14.4W 24V / 14.4W	800mA 800mA	409

## Optional Connector

Standard Lighting Male Connector:

PIN 1	24V
PIN 2	-
PIN 3	GND

M8 Male Connector

M8 Pin Assignment

PIN 1	-	-
PIN 2	RED	24V
PIN 3	-	-
PIN 4	BLACK	GND

M12 Male Connector

M12 Pin Assignment

PIN 1	BROWN	24V
PIN 2	WHITE	-
PIN 3	BLUE	GND
PIN 4	BLACK	-
PIN 5	GRAY	-

Product Part Numbering System :  
BHDQ-00-200-1-X-24V M8

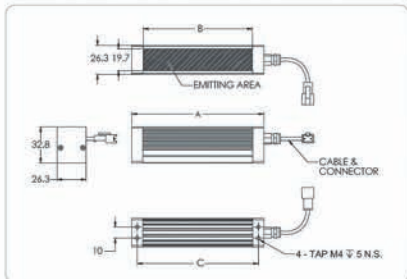
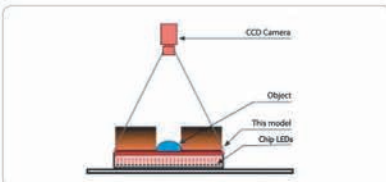
Product Part Numbering System :  
BHDQ-00-200-1-X-24V M12

# Backlight Illumination

## LBL3 SERIES – Backlight Line Illumination

LBL3 series is a bar-shaped backlight which LEDs are arranged in a dense array and shine into a diffuser.

Applications: Lead Frame Inspection, Shape Recognition, Size Measurement



### Technical Specification:

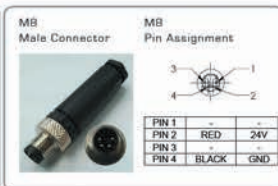
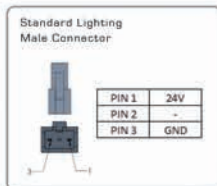
- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)			Color	Voltage / Watt	Current	Weight (g)
	A	B	C				
LBL3-00-100-X-X	120.0	99.0	110.0	●●○	24V / 2.16W	90mA	150
LBL3-00-200-X-X	220.0	200.0	210.0	●●○	24V / 3.60W	150mA	150
LBL3-00-300-X-X	300.0	300.0	310.0	●●○	24V / 4.32W	180mA	240
LBL3-00-300-X-X	300.0	300.0	310.0	●●○	24V / 7.20W	300mA	240
LBL3-00-400-X-X	420.0	400.0	410.0	●●○	24V / 6.48W	270mA	340
LBL3-00-400-X-X	420.0	400.0	410.0	●●○	24V / 10.80W	450mA	340
LBL3-00-500-X-X	520.0	499.0	510.0	●●○	24V / 8.64W	360mA	450
LBL3-00-500-X-X	520.0	499.0	510.0	●●○	24V / 14.40W	600mA	450
LBL3-00-600-X-X	620.0	599.0	610.0	●●○	24V / 10.80W	450mA	530
LBL3-00-600-X-X	620.0	599.0	610.0	●●○	24V / 18.00W	750mA	530
LBL3-00-700-X-X	720.0	699.0	710.0	●●○	24V / 12.96W	540mA	780
LBL3-00-700-X-X	720.0	699.0	710.0	●●○	24V / 21.60W	900mA	580
LBL3-00-800-X-X	820.0	799.0	810.0	●●○	24V / 15.12W	630mA	720
LBL3-00-800-X-X	820.0	799.0	810.0	●●○	24V / 25.20W	1050mA	720
LBL3-00-900-X-X	920.0	899.0	910.0	●●○	24V / 17.28W	720mA	810
LBL3-00-900-X-X	920.0	899.0	910.0	●●○	24V / 28.80W	1200mA	810
LBL3-00-1000-X-X	1020.0	999.0	1010.0	●●○	24V / 19.44W	810mA	930
LBL3-00-1000-X-X	1020.0	999.0	1010.0	●●○	24V / 32.40W	1350mA	930
LBL3-00-1000-X-X	1020.0	999.0	1010.0	●●○	24V / 21.60W	900mA	930
LBL3-00-1000-X-X	1020.0	999.0	1010.0	●●○	24V / 36.00W	1500mA	930

### Optional Connector



Product Part Numbering System :  
LBL3-00-100-X-X-24V-M8

Product Part Numbering System :  
LBL3-00-100-X-X-24V-M12

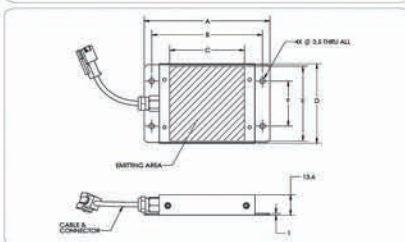
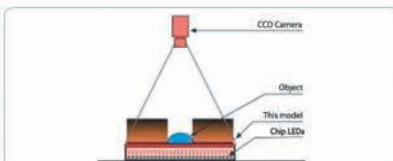


# 2019 Backlight Illumination

## BHS4 SERIES –Backlight Illumination

BHS4 series' LEDs are arranged in a dense array and shine into a diffuser. The uniform light emitted provides area illumination creating a silhouette that highlights a work piece's shape and outline. The PCBs are in modular form and can be increased in size according to the requirement.

Applications: Lead Frame Inspection, Shape Recognition, Size Measurement, edge detection



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

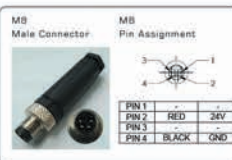
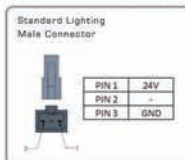
### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)						Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F				
BHS4-00-025-X-X	59.0	49.0	25.0	28.0	25.0	17.0	● 24V / 1.44W ● 24V / 0.576W ● 24V / 0.432W ● 24V / 3.12W	60mA 24mA 18mA 130mA	30	
BHS4-00-050-X-X	84.0	74.0	50.0	53.0	50.0	30.0	● 24V / 2.304W ● 24V / 1.728W ● 24V / 2.304W	96mA 72mA 96mA	80	
BHS4-00-075-X-X	109.0	99.0	75.0	78.0	75.0	38.5	● 24V / 5.184W ● 24V / 3.888W ● 24V / 5.184W	216mA 162mA 216mA	100	
BHS4-00-100-X-X	134.0	124.0	100.0	103.0	100.0	60.0	● 24V / 9.216W ● 24V / 6.912W ● 24V / 9.216W	384mA 288mA 384mA	220	
Model	Dimensions (MM)						Color	Voltage / Watt	Current	Weight (g)
A	B	C	D	E	F					
BHS4-00-030-X-X	64.0	54.0	30.0	33.0	30.0	22	● 24V / 1.44W ● 24V / 0.576W ● 24V / 0.432W ● 24V / 3.12W	60mA 24mA 18mA 130mA	50	
BHS4-00-060-X-X	94.0	84.0	60.0	63.0	60.0	40	● 24V / 2.304W ● 24V / 1.728W ● 24V / 2.304W	96mA 72mA 96mA	115	
BHS4-00-090-X-X	124.0	114.0	90.0	93.0	90.0	70	● 24V / 5.184W ● 24V / 3.888W ● 24V / 5.184W	216mA 162mA 216mA	200	
BHS4-00-120-X-X	154.0	144	120.0	123.0	120.0	100	● 24V / 9.216W ● 24V / 6.912W ● 24V / 9.216W	384mA 288mA 384mA	325	

Remark: BHS3 series are replaced by BHS4-25X25 series  
BHL3 series are replaced by BHS4-30X30 series

### Optional Connector



Product Part Numbering System  
BHS4-00-025-X-X-24V-M8

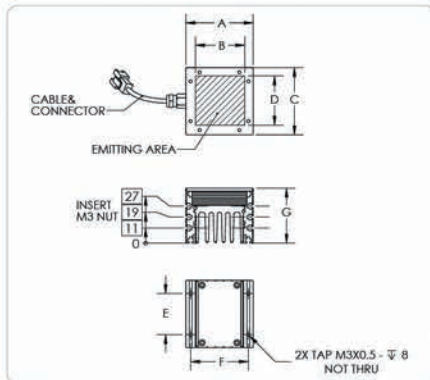
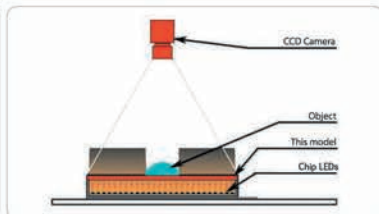
Product Part Numbering System  
BHS4-00-025-X-X-24V-M12

# Backlight Illumination

## BHH SERIES – High Power Backlight Illumination

BHH series is a high power backlight which LEDs are arranged in a dense array and shine into a diffuser. This product is suitable to be used in high speed applications.

Applications: Lead Frame Inspection, Shape Recognition, Size Measurement, edge detection



### Technical Specification:

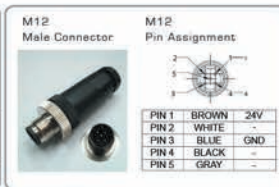
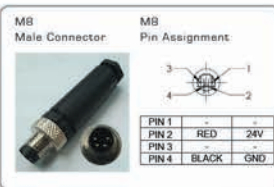
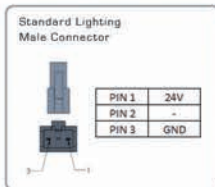
- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions [MM]							Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F	G				
BHH-00-035-X-X	49.0	35.0	49.0	35.0	30.0	42.0	40	●●●	24V / 3.60W	150mA	135
BHH-00-070-X-X	84.0	70.0	84.0	70.0	65.0	77.0	40	●●●	24V / 14.40W	600mA	380
								●●●	24V / 14.40W	600mA	380

### Optional Connector



Product Part Numbering System :  
BHH-00-035-X-X-24V-M8

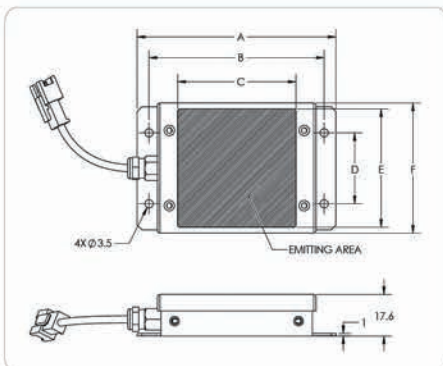
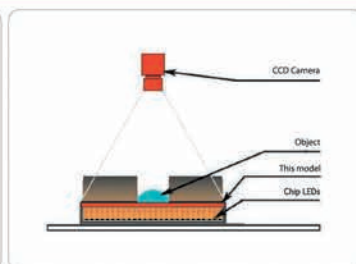
Product Part Numbering System :  
BHH-00-035-X-X-24V-M12

# 2019 Backlight Illumination

## BHC2 SERIES – High Intensity Collimated Backlight Illumination

BHC2 is a high intensity, uniform and collimated backlight that create a silhouette that highlights a work piece's shape and outline distinctly compare to the standard backlight.

Applications: Lead Frame Inspection, Shape Recognition, Size Measurement



### Technical Specification:

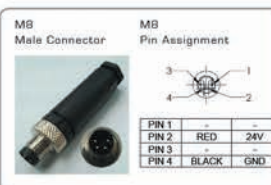
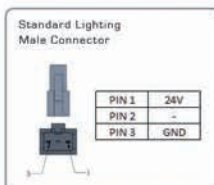
- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)						Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F				
BHC2-00-025-X-X	59	49	25	17	25	30	● 24V / 1.44W ○ 24V / 0.576W	80mA 24mA	48	
BHC2-00-050-X-X	84	74	50	30	50	55	● 24V / 0.432W ● 24V / 1.728W	18mA 72mA	93	
BHC2-00-075-X-X	109	99	75	38.5	75	80	● 24V / 5.184W ● 24V / 3.888W	216mA 162mA	121	
BHC2-00-100-X-X	134	124	100	60	100	105	● 24V / 9.216W ● 24V / 6.912W	384mA 288mA	264	

### Optional Connector



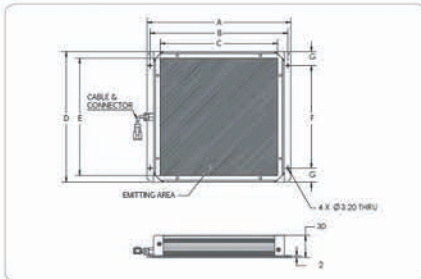
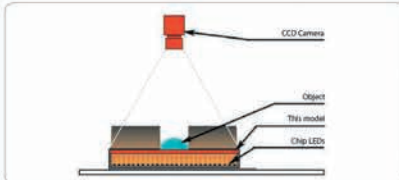
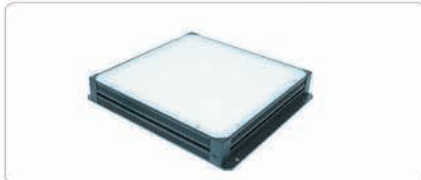
Product Part Numbering System :  
BHC2-00-050-X-X-24V M8

Product Part Numbering System :  
BHC2-00-050-X-X-24V M12

# 2019 Backlight Illumination

## BHLX3 SERIES – Backlight Illumination

BHLX3 series is bigger and thicker size of backlight which provides diffused backlighting over a wide area. This product is a cascade able PCB (80mm x 80mm). Maximum quantity of this product that could be cascaded is 28 pieces.



**Technical Specification:**

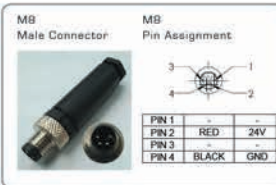
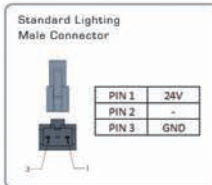
- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

**Customize Lighting:**

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)							Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F	G				
BHLX3-00-160X160-X-X	196	188	160	178	160	140	19	●●●○ IR850	24V / 12.96W 24V / 17.28W	540mA 720mA	665
BHLX3-00-160X240-X-X	276	268	240	178	160	140	19	●●●○ IR850	24V / 12.48W 24V / 25.92W	810mA 1080mA	860
BHLX3-00-160X320-X-X	356	348	320	178	160	140	19	●●●○ IR850	24V / 16.72W 24V / 25.92W	780mA 1080mA	1060
BHLX3-00-160X400-X-X	436	428	400	178	160	140	19	●●●○ IR850	24V / 24.96W 24V / 43.20W	1040mA 1800mA	1265
BHLX3-00-240X240-X-X	276	268	240	258	240	140	59	●●●○ IR850	24V / 31.2W 24V / 29.16W	1300mA 1215mA	1170
BHLX3-00-240X320-X-X	356	348	320	258	240	140	59	●●●○ IR850	24V / 38.88W 24V / 51.84W	1620mA 2160mA	1410
BHLX3-00-240X400-X-X	436	428	400	258	240	140	59	●●●○ IR850	24V / 37.44W 24V / 48.60W	1560mA 2025mA	1665
BHLX3-00-320X320-X-X	356	348	320	338	320	300	19	●●●○ IR850	24V / 64.80W 24V / 46.8W	2700mA 1950mA	1900
BHLX3-00-320X400-X-X	436	428	400	338	320	300	19	●●●○ IR850	24V / 51.84W 24V / 49.92W	2160mA 2080mA	2120
BHLX3-00-400X400-X-X	436	428	400	418	400	360	29	●●●○ IR850	24V / 64.80W 24V / 62.4W	2700mA 2600mA	2800
								●●●○ IR850	24V / 81.00W 24V / 78.0W	3375mA 3250mA	

### Optional Connector



Product Part Numbering System :  
BHLX3-00-160X160-X-X-24V-MB

Product Part Numbering System :  
BHLX3-00-160X160-X-X-24V-M12




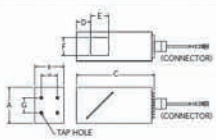
# 2019 Coaxial Illumination

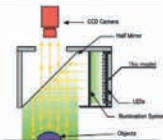
## CAS2 SERIES – Uniform Mid Power Coaxial Illumination

CAS2 series is a mid power coaxial illumination. The light projected from the light source is reflected by 45° half mirror to the object and provide light parallel with the camera. CAS2 are suitable to be used in applications that involve the inspection of objects with transparent, translucent and reflective surfaces, as only the desired specular reflected light from the object is captured by the camera, thus producing a clear and bright image without reflection or glare.

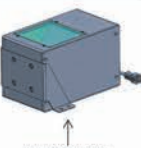
Applications: Surface Inspection and Alignment, Wafer and Metal Surface inspection, Film, LCD & Glass, Pattern on PCB Inspection



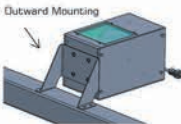




**Flexible Mounting Bracket, apply to  
\* CAS2-00-040-X-X-24V only.**



Inward Mounting



Outward Mounting

**BRACKET PART NO. - CAS2-00-040-X-X-BRACKET**

**Technical Specification:**

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

**Customize Lighting:**

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information


Model	Dimensions (MM)								TAP HOLE	Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F	G	H					
CAS2-00-010-X-X	36.0	29.0	77.4	14.0	18.0	18.0	15.0	16.0	M3	●●● 24V / 1.80W ●●○ 24V / 3.12W	75mA 130mA	120	
CAS2-00-020-X-X	46.0	39.0	87.3	15.5	25.0	24.0	20.0	20.0	M4	●●● 24V / 1.80W ●●○ 24V / 3.60W	80mA 150mA	200	
CAS2-00-025-X-X	33.0	33.0	54.0	8.0	25.0	25.6	16.0	15.0	M3	●●● 24V / 3.64W ●●○ 24V / 4.2W	160mA 175mA	80	
* CAS2-00-040-X-X	66.0	60.0	107.5	14.0	48.0	48.0	25.0	25.0	M5	●●● 24V / 8.40W ●●○ 24V / 12.60W	350mA 525mA	360	
CAS2-00-070-X-X	95.0	89.0	139.6	21.2	70.0	70.0	50.0	50.0	M5	●●● 24V / 13.44W ●●○ 24V / 10.80W	560mA 450mA	740	
CAS2-00-080-X-X	81.0	104.0	125.5	12.2	65.0	84.0	45.0	50.0	M5	●●● 24V / 10.80W ●●○ 24V / 10.94W	450mA 450mA	690	
CAS2-00-100-X-X	123.8	120.0	168.7	18.2	100.0	100.0	50.0	50.0	M5	●●● 24V / 10.80W ●●○ 24V / 18.74W	450mA 781mA	1310	

Model	Dimensions (MM)								TAP HOLE	Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F	G	H					
CAS2-00-025-X-RGB	33.0	33.0	54.0	8.0	25.0	25.6	16.0	15.0	M3	●●● 24V / 1.30W ●●○ 24V / 1.30W	54mA 54mA	90	
* CAS2-00-040-X-RGB	66.0	60.0	107.5	14.0	48.0	48.0	25.0	25.0	M5	●●● 24V / 3.00W ●●○ 24V / 2.40W	125mA 100mA	400	
CAS2-00-070-X-RGB	95.0	89.0	139.6	21.5	70.0	70.0	50.0	50.0	M5	●●● 24V / 8.40W ●●○ 24V / 4.37W	350mA 185mA	730	
CAS2-00-100-X-RGB	123.8	120.0	166.5	18.2	100.0	100.0	50.0	50.0	M5	●●● 24V / 8.68W ●●○ 24V / 7.68W	380mA 320mA	1310	



### Optional Connector


**Standard Lighting Male Connector**



PIN 1	24V
PIN 2	-
PIN 3	GND

**M8 Male Connector**


**M8 Pin Assignment**



PIN 1	-	-
PIN 2	RED	24V
PIN 3	-	-
PIN 4	BLACK	GND

**M12 Male Connector**

**M12 Pin Assignment**



PIN 1	BROWN	24V
PIN 2	WHITE	-
PIN 3	BLUE	GND
PIN 4	BLACK	-
PIN 5	GRAY	-

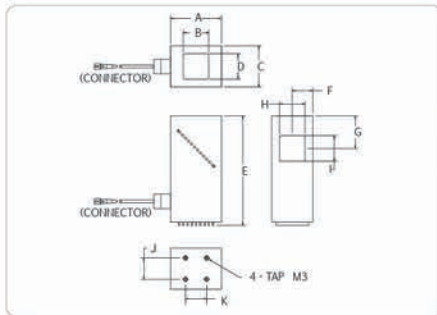
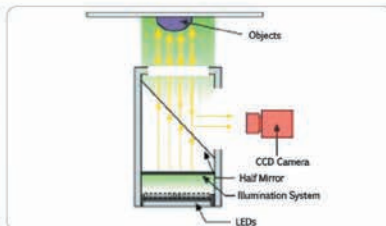
Product Part Numbering System :  
CAS2-00-010-X-X-24V-M8

Product Part Numbering System :  
CAS2-00-010-X-X-24V-M12

# Coaxial Illumination

## CAS2 SERIES – Uniform Mid Power Coaxial Illumination

CAS2 series is an extended version of coaxial light illumination which allow camera to be mounted at side of the object which object image is reflected to the camera. This illumination is suitable for limited camera mounting distances or bottom inspection. Compact in size.



### Technical Specification:

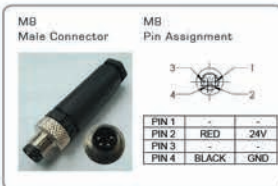
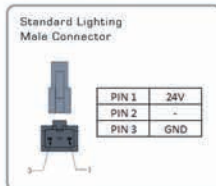
- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions [MM]											Color	Voltage / Watt	Current	Weight [g]
	A	B	C	D	E	F	G	H	I	J	K				
CAS2-45-010-X-X	36.0	18.0	29.0	18.0	77.5	14.5	23.0	18.0	18.0	15.0	15.0	●●●○	24V / 1.80W	75mA	120
CAS2-45-020-X-X	46.0	25.0	39.0	24.0	87.3	19.5	28.0	24.0	25.0	20.0	20.0	●●●○	24V / 1.92W	80mA	200
CAS2-45-040-X-X	66.0	48.0	60.0	48.0	107.5	30.0	38.0	48.0	48.0	36.0	36.0	●●●○	24V / 3.60W	150mA	350
												●●○●	24V / 4.2W	175mA	
												●●○●	24V / 8.40W	350mA	

### Optional Connector



Product Pat. Numbering System :  
CAS2-45-010-X-X-24V-M8

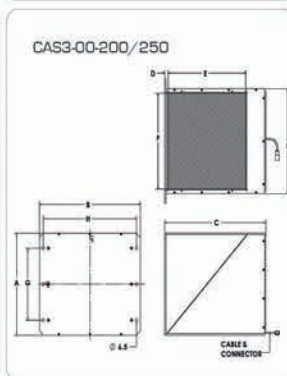
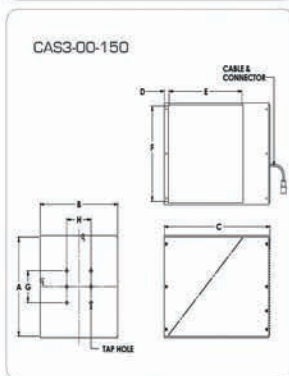
Product Pat. Numbering System :  
CAS2-45-010-X-X-24V-M12

# 2019 Coaxial Illumination

## CAS3 SERIES – Uniform High Power Coaxial Illumination

CAS3 series is a high power coaxial illumination. The light projected from the light source is reflected by 45° half mirror to the object and provide light parallel with the camera. CAS3 is bigger size compare to CAS2.

Applications: Surface Inspection and Alignment, Wafer and Metal Surface Inspection, Film, LCD and Glass, Pattern on PCB Inspection



- Technical Specification:**
- Color Red, Green, Blue and White
  - 24V DC Input Power
  - Continuous and Strobe Applications
  - Compact Size
  - Lighting Cable 500mm

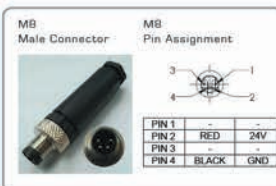
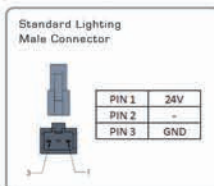
- Customize Lighting:**
- Customize Sizes, Mounting Requirements
  - Color and Voltage Available
  - Consult Technical Sales for More Information

- LED wavelength (OSRAM LED Light Technology)**
- Red Led is 620nm
  - Blue Led is 450nm
  - Green Led is 540nm

Model	Dimensions (MM)									TAP HOLE	Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F	G	H	I					
CAS3-00-150-X-X	160.4	160	217.5	10	150	150	50	50	-	M6	●●●	24V / 25.34 W	1056 mA	2000
CAS3-00-200-X-X	213	200	260.5	9	200	200	150	240	219	-	●●●	24V / 32.40 W	1350 mA	3200
CAS3-00-250-X-X	260.6	310	309.5	9	250	250	210	290	269	-	●●●	24V / 48.66 W	1944 mA	5000

Remarks: CAS2 part numbers are changed to CAS3

### Optional Connector



Product Part Numbering System :  
CAS3-00-150-X-X-24V-M8

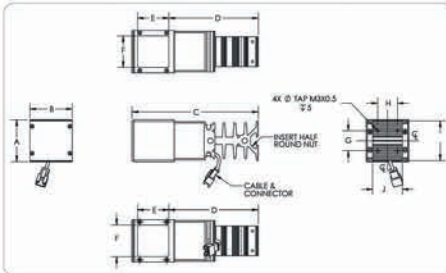
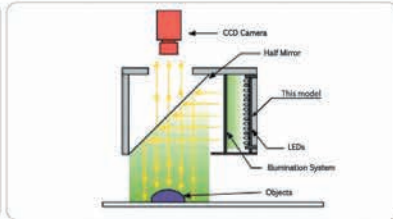
Product Part Numbering System :  
CAS3-00-150-X-X-24V-M12

# Coaxial Illumination

## HCAS2 SERIES – Uniform High Power Coaxial Illumination

HCAS2 series is a high power coaxial illumination with heat sink. The light projected from the light source is reflected by 45° half mirror to the object and provide light parallel with the camera.

Applications: Surface Inspection and Alignment, Wafer and Metal Surface inspection, Film, LCD & Glass, Pattern on PCB Inspection



**Technical Specification:**

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

**Customize Lighting:**

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

**LED Wavelength (OSRAM LED Light Technology)**

- Red Led is 620nm
- Blue Led is 460nm
- Green Led is 540nm

Model	Dimensions (MM)										Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F	G	H	I	J				
HCAS2-00-035-X-X	46.6	47	140	99	35	35	22	22	44	33	●●●○	24V / 7.68W	320mA	286
HCAS2-00-070-X-X	76.5	77.5	170	99	65	65	52	22	74	63.5	●●●○	24V / 18.24W	320mA	296
											●●●○	24V / 18.0W	750mA	796

### Optional Connector

**Standard Lighting Male Connector**

PIN 1	24V
PIN 2	-
PIN 3	GND

**M8 Male Connector**

**M8 Pin Assignment**

PIN 1	-	
PIN 2	RED	24V
PIN 3	-	
PIN 4	BLACK	GND

**M12 Male Connector**

**M12 Pin Assignment**

PIN 1	BROWN	24V
PIN 2	WHITE	-
PIN 3	BLUE	GND
PIN 4	BLACK	-
PIN 5	GRAY	-

Product Part Numbering System :  
HCAS2-00-035-X-X M8

Product Part Numbering System :  
HCAS2-00-035-X-X M12

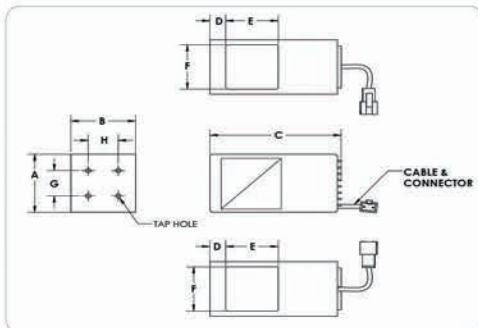
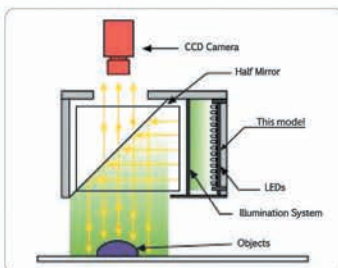


# 2019 Coaxial Illumination

## CASC SERIES – Uniform Coaxial Illumination

CASC series provides coaxial illumination mostly for high magnification telecentric lenses. The light projected from the light source is reflected by a prism cube beam splitter to provide light parallel with the camera.

Applications: Surface Inspection and Alignment, Wafer and Metal Surface Inspection, Film, LCD and Glass, Pattern on PCB Inspection



### Technical Specification:

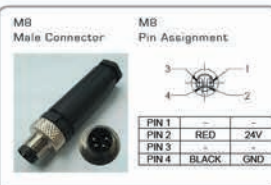
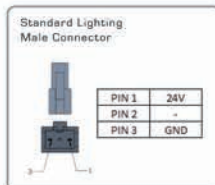
- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)								TAP HOLE	Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F	G	H					
CASC-00-015-X-X	24	30	49.5	6.1	19	19	13	13	M3	●●● 24V / 1.68W ●●○ 24V / 2.16W	70mA 90mA	100	
CASC-00-025-X-X	33.0	33.0	54.0	8.0	25.0	25.6	15.0	16.0	M3	●●● 24V / 5.52W ●●○ 24V / 5.76W	230mA 240mA	117	
CASC-00-035-X-X	45.8	43	87.3	10.5	35	35	20	20	M4	●●● 24V / 6.62W ●●○ 24V / 6.91W	276mA 268mA	318	

### Optional Connector



Product Part Numbering System :  
CASC-00-015-X-X M8

Product Part Numbering System :  
CASC-00-015-X-X M12

2019

## 4 Section LED Illumination Series



### 4 SECTION LED ILLUMINATION



HPD-00-170-1-X-24V-CH4  
HPD-00-240-1-X-24V-CH4



IDS5-00-050-1-X-24V-CH4  
IDS5-00-070-1-X-24V-CH4  
IDS5-00-100-1-X-24V-CH4  
IDS5-00-150-1-X-24V-CH4  
IDS5-00-200-1-X-24V-CH4  
IDS5-00-250-1-X-24V-CH4  
IDS4-00-360-1-X-24V-CH4  
IDSL-00-150-1-X-24V-4CH



LBRG-00-080-3-X-24V



LLA-75-130-3-X-24V-CH4



MLLA-90-200-1-X-24V-CH4



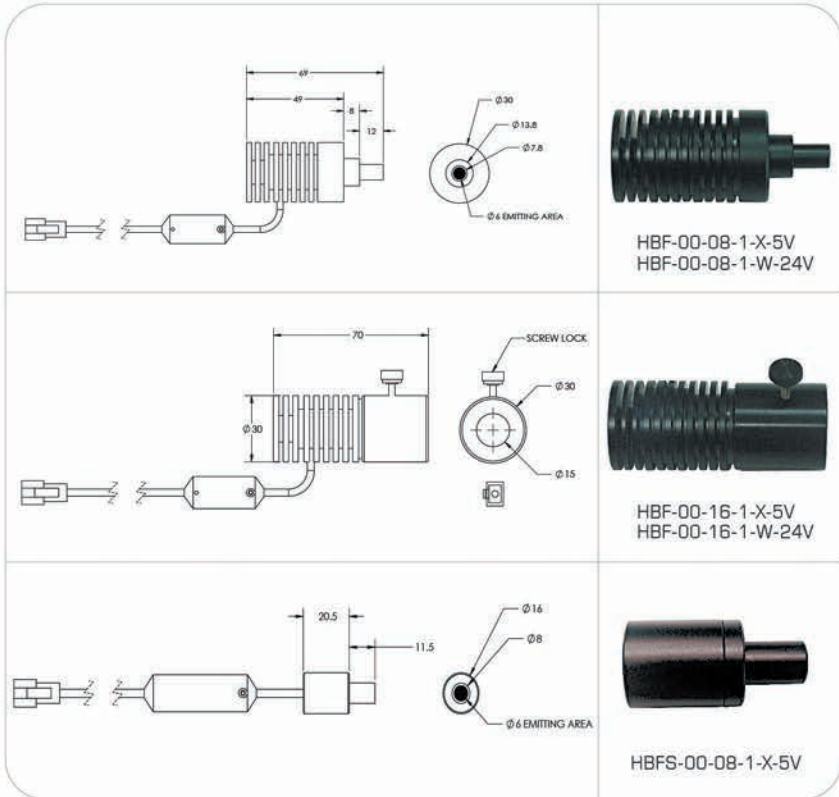
# 2019 Spot Light Illumination

## HBF & HBFS SERIES – High Luminosity Spot Light

HBF series is designed to replace halogen light source which is low in power consumption but high in luminosity and has a longer life span

HBFS series is a compact version of HBF.

Applications: Macro Lenses Inspection

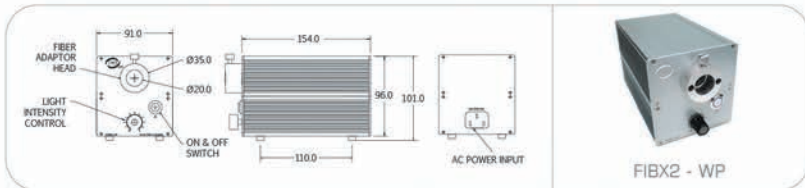


Model	Color	Power Consumption	Current	Weight (g)
HBF-00-08-1-X		5V / 3.0W	600mA	100
HBF-00-08-1-W		24V / 2.4W	100mA	100
HBF-00-16-1-X		5V / 3.0W	600mA	120
HBF-00-16-1-W		24V / 2.4W	100mA	120
HBFS-00-08-1-X		5V / 0.55W	110mA	45

# 2019 Spot Light Illumination

## FIB2 SERIES – LED Fibre Light Module

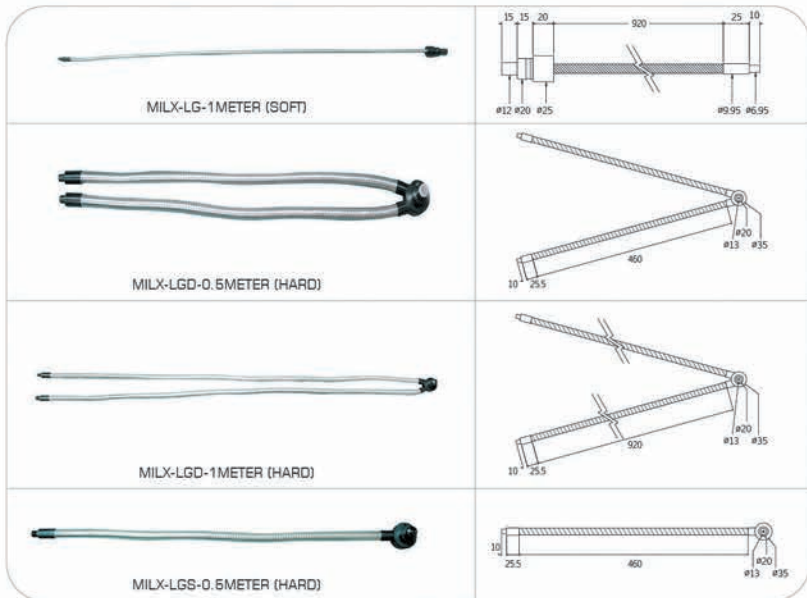
FIB2 series is an integration of the HBF series illumination and a controller. This integrated form provides easy installation and is suitable for fibre optic illumination.



Model	Power Consumption	Input Voltage	Color	Weight (g)
FIB2-WP	7WATT	110 ~ 240VAC	o	1100

### LIGHT GUIDE

Light guide is fiber optic for LED Fiber light module (FIB2).



Model	Length[M]	Flexibility
MILX-LG-X	1.0	SOFT
MILX-LGD-X	0.5	HARD
MILX-LGD-X	1.0	HARD
MILX-LGS-X	0.5	HARD

Remark: Add new model MILX (LIGHT GUIDE).



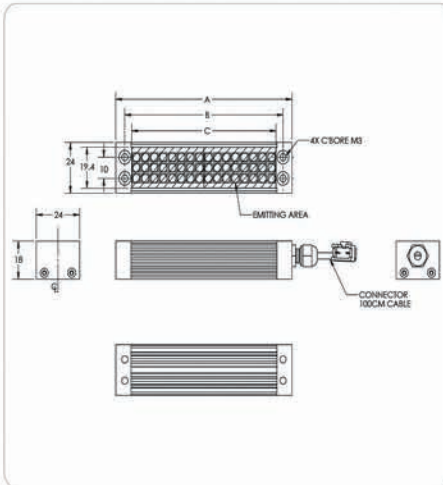
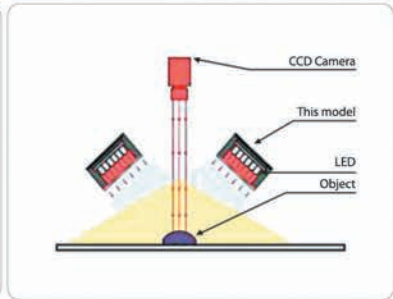
2019

# Ingress Protection Illumination (IP65)

## LBRP SERIES – Large Uniform Bar Illumination

LBRP series is a 3 rows of SMD LEDs with lens arrays are arranged in a rectangular array to provide rectangular illumination, which can be mounted with different angle to provide differences in illumination reflection for image processing. This illumination is dust tight and protected from low pressure water jets from any direction.

Applications: General Illumination, Label inspection, character Inspection, Code Recognition



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 1000mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

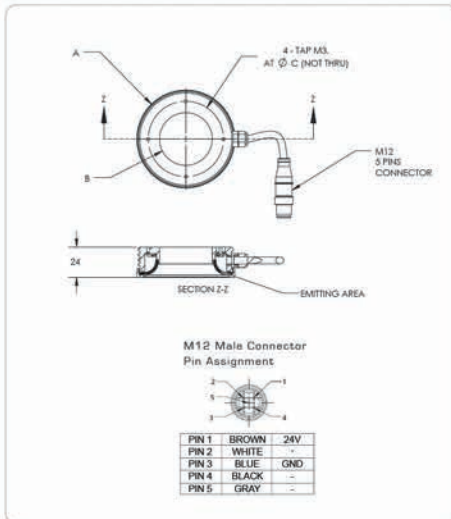
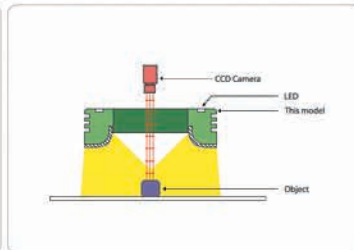
Model	Dimensions (MM)			Color	Voltage / Watt	Current	Weight (g)
	A	B	C				
LBRP-00-040-3-X	57.8	47.8	40	●●○	24V / 1.44W	60mA	61
LBRP-00-080-3-X	97.8	87.8	80	●●○	24V / 1.92W	80mA	81
				●●○	24V / 2.88W	120mA	
				●●○	24V / 3.84W	150mA	80

# Ingress Protection Illumination (IP65)

## HPDP SERIES – Large Uniform Ring Illumination

HPDP series consists of mid-power LEDs arranged in a circular structure with molded diffuser on the surface, which allows the emission of uniform, direct, diffused illumination with high flexibility and stability. This illumination is dust tight and protected from low pressure water jets from any direction.

Applications: Shining Surface & Food Packaging Inspection



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)			Color	Voltage / Watt	Current	Weight (g)
	A	B	C				
HPDP-00-070-1-X	78.0	42	60.0	●●○	24V / 1.80W	75mA	130
HPDP-00-110-2-X	116.4	68	90.0	●●○	24V / 2.16W	90mA	200
				●●○	24V / 3.96W	165mA	
				●●○	24V / 4.37W	182mA	

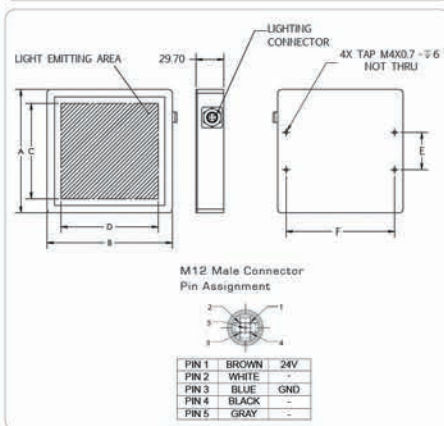
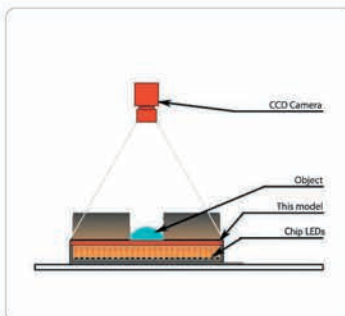
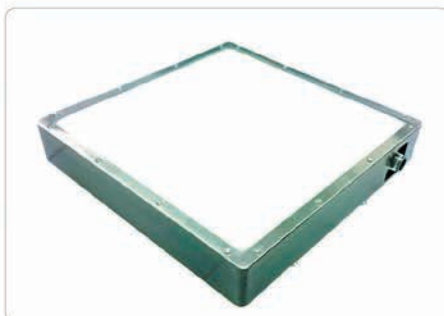
# Ingress Protection Illumination (IP65)

## BHP SERIES – Ingress Protection, High Intensity Backlight Illumination

BHP series is an ingress protected illuminator which LEDs are arranged in a dense array and shine into a diffuser. The uniform light emitted provides even area illumination.

This illumination is dust tight and protected from low pressure water jets from any direction.

Applications: Lead Frame Inspection, Shape Recognition, Dimensions Measurement



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult: Technical Sales for More Information

Model	Dimensions (MM)						Color	Voltage / Watt	Current	Weight (g)
	A	B	C	D	E	F				
BHP1010-X-X	132.0	134.0	102.0	104.0	40.0	116.0	●●○	24V / 9.12W	380mA	650
BHP1515-X-X	180.0	180.0	150.0	150.0	75.0	163.0	●●○	24V / 6.84W	285mA	1000
BHP1520-X-X	180.0	230.0	150.0	200.0	75.0	213.0	●●○	24V / 18.48W	770mA	1000
							●●○	24V / 20.16W	840mA	1200
							●●○	24V / 23.04W	960mA	1200
							●●○	24V / 20.16W	840mA	1200

# Line Scan Illumination

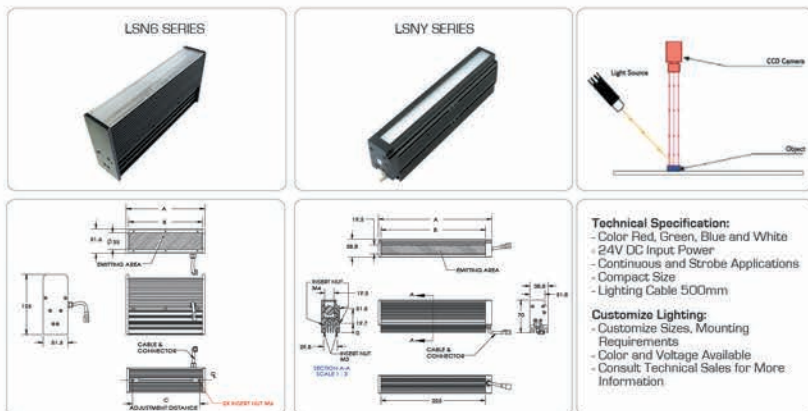
## LSN6 SERIES – Line Scan Illumination

LSN6 series is a compact and low cost line scan illumination which consists of a lens that converges the light into an intense illumination. This product is 35mm in diameter and has higher intensity than LSNY series.

## LSNY SERIES – Line Scan Illumination

LSNY series consists of a 20mm diameter rod lens that converges the light to be used in 5cm line scan applications (short working distance).

Application: Web and Print Applications, Packaging Inspection, Flat-panel Display Inspection, Electronics Components Inspection



### Technical Specification:

- Color Red, Green, Blue and White
- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customize Lighting:

- Customize Sizes, Mounting Requirements
- Color and Voltage Available
- Consult Technical Sales for More Information

Model	Dimensions (MM)			Color	Voltage / Watt	Current	Weight (g)
	A	B	C				
LSN6-00-075-1-X	89	79	65	●●●○	24V / 11.76W	490mA	560
LSN6-00-150-1-X	164	154	140	●●●○	24V / 23.52W	480mA	977
LSN6-00-225-1-X	239	229	215	●●●○	24V / 35.28W	1470mA	1362
LSN6-00-300-1-X	314	304	290	●●●○	24V / 47.04W	1960mA	1754

Model	Dimensions (MM)		Color	Voltage / Watt	Current	Weight (g)
	A	B				
LSNY-00-075-X-X-24V	93	75	●●●○	24V / 6.48W	270mA	383
LSNY-00-150-X-X-24V	168	150	●●●○	24V / 12.96W	540mA	642
LSNY-00-225-X-X-24V	243	225	●●●○	24V / 19.44W	810mA	911
LSNY-00-300-X-X-24V	318	300	●●●○	24V / 25.92W	1080mA	1184

### Optional Connector

#### Standard Lighting Male Connector



PIN 1	24V
PIN 2	-
PIN 3	GND

#### MB Male Connector



#### MB Pin Assignment

PIN 1	-	24V
PIN 2	RED	24V
PIN 3	-	-
PIN 4	BLACK	GND

#### M12 Male Connector



#### M12 Pin Assignment

PIN 1	BROWN	24V
PIN 2	WHITE	-
PIN 3	BLUE	GND
PIN 4	BLACK	-
PIN 5	GRAY	-

Product Part Numbering System :  
LSN6-00-075-1-X-24V MB

Product Part Numbering System :  
LSN6-00-075-1-X-24V M12



# 2019 12V ILLUMINATION

## 12V ILLUMINATION & 12V EXTENSION CABLE



Model	Color	Voltage / Watt	Current	Weight (g)	Model	Color	Voltage / Watt	Current	Weight (g)
LSW-00-050-2-X	• • •	12V / 1.98W 12V / 2.16W	165mA 180mA	60	IDS5-00-070-1-X	• • •	12V / 3.36W 12V / 4.20W	280mA 350mA	160
LSW-15-050-2-X	• • •	12V / 1.98W 12V / 2.16W	165mA 180mA	40	IDS5-00-100-1-X	• • •	12V / 5.28W 12V / 5.88W	440mA 490mA	220
LSW-15-070-3-X	• • •	12V / 4.14W 12V / 4.44W	345mA 370mA	100	LBRX-00-040-3-X	• • •	12V / 0.72W 12V / 1.20W	60mA 100mA	50
LSW-15-090-4-X	• • •	12V / 4.80W 12V / 5.54W	400mA 482mA	180	LBRX-00-080-3-X	• • •	12V / 1.44W 12V / 2.40W	120mA 200mA	70
LSW-30-050-2-X	• • •	12V / 1.98W 12V / 2.16W	165mA 180mA	60	LBRX-00-120-3-X	• • •	12V / 2.16W 12V / 3.60W	180mA 300mA	95
LSW-30-070-3-X	• • •	12V / 3.78W 12V / 4.20W	315mA 360mA	120	LBRX-00-160-3-X	• • •	12V / 2.88W 12V / 4.80W	240mA 400mA	115
LSW-30-090-4-X	• • •	12V / 4.92W 12V / 5.63W	410mA 469mA	200	LBRX-00-200-3-X	• • •	12V / 3.60W 12V / 6.00W	300mA 500mA	140
LSW-45-050-2-X	• • •	12V / 1.98W 12V / 2.28W	165mA 190mA	70	LBRX-00-040-6-X	• • •	12V / 1.44W 12V / 1.44W	120mA 120mA	70
LSW-45-070-3-X	• • •	12V / 2.88W 12V / 3.11W	240mA 259mA	120	LBRX-00-080-6-X	• • •	12V / 2.88W 12V / 2.88W	240mA 240mA	100
LLA-60-070-2-X	• • •	12V / 3.24W 12V / 5.40W	270mA 450mA	90	LBRX-00-120-6-X	• • •	12V / 4.32W 12V / 4.32W	360mA 360mA	130
LLA-60-090-2-X	• • •	12V / 3.96W 12V / 4.44W	330mA 370mA	114	LBRX-00-160-6-X	• • •	12V / 5.76W 12V / 5.76W	480mA 480mA	170
CAS2-00-020-X-X	• • •	12V / 3.24W 12V / 3.36W	270mA 280mA	200	LBRX-00-200-6-X	• • •	12V / 7.20W 12V / 7.20W	600mA 600mA	210
CAS2-00-040-X-X	• • •	12V / 6.48W 12V / 7.20W	540mA 600mA	380					

# 2019 IR ILLUMINATION

## INFRARED ILLUMINATION

Infrared Illumination (IR) is invisible to the human eye and has longer wavelengths than the visible light with the range from 750nm to 1000nm. Infrared Illumination can be used to look through colored prints and penetrate within the inspection object for more in-depth imaging.

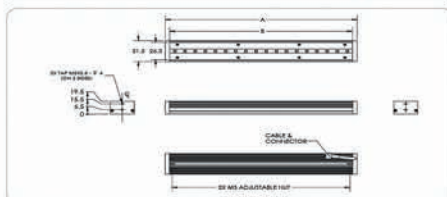
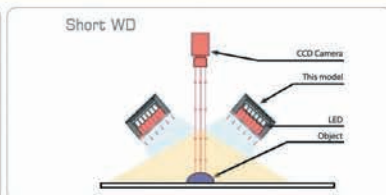


Model	Color	Voltage / Watt	Current	Dimension Refer To Page	Model	Color	Voltage / Watt	Current	Dimension Refer To Page
LLA-60-090-2-X	IR850	24V / 2.88W	120mA	8	LBRX-00-040-6-X	IR850	24V / 2.16W	90mA	16
LLA-60-090-2-X	IR940	24V / 2.88W	120mA	8	LBRX-00-080-6-X	IR850	24V / 3.46W	144mA	16
LSW-15-070-3-X	IR850	24V / 2.88W	120mA	10	LBRX-00-120-6-X	IR850	24V / 5.16W	216mA	16
LSW-15-070-3-X	IR940	24V / 2.88W	120mA	10	LBRX-00-160-6-X	IR850	24V / 6.91W	288mA	16
LBRX-00-040-3-X	IR850	24V / 1.06W	45mA	12	LBRX-00-200-6-X	IR850	24V / 8.64W	360mA	16
LBRX-00-080-3-X	IR850	24V / 2.16W	90mA	12					
LBRX-00-120-3-X	IR850	24V / 3.24W	135mA	12	LBRQ-00-040-6-X	IR850	24V / 6.91W	288mA	18
LBRX-00-160-3-X	IR850	24V / 4.32W	180mA	12	LBRQ-00-080-6-X	IR850	24V / 13.82W	576mA	18
LBRX-00-200-3-X	IR850	24V / 5.40W	225mA	12	LBRQ-00-120-6-X	IR850	24V / 20.74W	864mA	18
					LBRQ-00-160-6-X	IR850	24V / 27.65W	1152mA	18
LBRQ-00-040-3-X	IR850	24V / 4.32W	180mA	14	LBRQ-00-200-6-X	IR850	24V / 34.56W	1440mA	18
LBRQ-00-080-3-X	IR850	24V / 8.64W	360mA	14					
LBRQ-00-120-3-X	IR850	24V / 12.96W	540mA	14	IDS5-00-050-X-X	IR850	24V / 1.54W	64mA	29
LBRQ-00-160-3-X	IR850	24V / 17.28W	720mA	14	IDS5-00-070-X-X	IR850	24V / 2.304W	96mA	29
LBRQ-00-200-3-X	IR850	24V / 21.60W	900mA	14	IDS5-00-100-X-X	IR850	24V / 3.94W	160mA	29
					IDS5-00-150-X-X	IR850	24V / 24.0W	1000mA	29
CAS2-00-025-X-X	IR850	24V / 3.94W	160mA	39	IDS5-00-200-X-X	IR850	24V / 30.0W	1250mA	29
CAS2-00-040-X-X	IR850	24V / 8.40W	350mA	39	IDS5-00-250-X-X	IR850	24V / 36.0W	1500mA	29
BHS4-00-025-X-X	IR850	24V / 3.12W	130mA	35	BHLX3-00-160X160-X-X	IR850	24V / 12.48W	520mA	38
BHS4-00-050-X-X	IR850	24V / 2.304W	96mA	35	BHLX3-00-160X240-X-X	IR850	24V / 19.72W	780mA	38
BHS4-00-075-X-X	IR850	24V / 5.184W	216mA	35	BHLX3-00-160X320-X-X	IR850	24V / 24.96W	1040mA	38
BHS4-00-100-X-X	IR850	24V / 9.216W	384mA	35	BHLX3-00-160X400-X-X	IR850	24V / 31.2W	1300mA	38
					BHLX3-00-240X240-X-X	IR850	24V / 28.08W	1170mA	38
BHS4-00-030-X-X	IR850	24V / 3.12W	130mA	35	BHLX3-00-240X320-X-X	IR850	24V / 37.44W	1560mA	38
BHS4-00-060-X-X	IR850	24V / 2.30W	96mA	35	BHLX3-00-240X400-X-X	IR850	24V / 46.8W	1950mA	38
BHS4-00-090-X-X	IR850	24V / 5.194W	216mA	35	BHLX3-00-320X320-X-X	IR850	24V / 49.92W	2080mA	38
BHS4-00-120-X-X	IR850	24V / 9.216W	384mA	35	BHLX3-00-320X400-X-X	IR850	24V / 62.4W	2600mA	38
					BHLX3-00-400X400-X-X	IR850	24V / 79.0W	3250mA	38

# 2019 UV Illumination

## UV ILLUMINATION

UV Illumination has shorter wavelengths compared to the visible illumination. Ultraviolet illumination with wavelengths shorter than the visible light, has electromagnetic radiation in the range between 300nm and 450nm, which allows chemicals that has UV lighting interaction to be visible under the blue light.



### Technical Specification:

- UV360- 24V DC Input Power
- Continuous and Strobe Applications
- Compact Size
- Lighting Cable 500mm

### Customizing Lighting:

- Customize Sizes, Mounting Requirements
- Consult Technical Sales for More Information

Model	Dimensions (MM)		Color	Voltage / Watt	Current	Weight (g)
	A	B				
LBRX-00-080-1-X	92	80	UV365	24V /2.4W	100mA	95
LBRX-00-160-1-X	175	160	UV365	24V /4.8W	200mA	155
LBRX-00-240-1-X	252	240	UV365	24V /7.2W	300mA	230



Model	Color	Voltage / Watt	Current	Weight (g)	Dimension Refer To Page
LSW-15-070-2-X	UV375	24V /4.32W	180mA	103	7
LSW-15-090-3-X	UV375	24V /7.20W	300mA	160	7
LSW-30-040-1-X	UV375	24V /1.08W	45mA	45	7
LLA-60-090-2-X	UV375	24V /7.68W	320mA	109	10
LLA-60-150-2-X	UV375	24V /11.52W	480mA	272	10
LLA-75-170-2-X	UV375	24V /8.40W	350mA	342	10
CAS2-00-025-X-X	UV365	24V /0.72W	30mA	83	43
CAS2-00-040-X-X	UV365	24V /1.44W	60mA	324	43

2019

# Microscope Illumination

## MILX SERIES – Microscope Illumination

Applications: LED Illumination on Stereo Microscope System



MILX-30-070-WP (PURE WHITE)



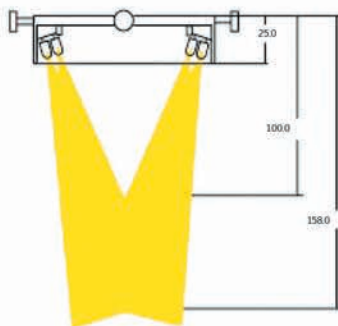
MILX-30-070-WD (WARM WHITE)



MILX-30-070-WE (WARM WHITE)



MILX-30-070-WF (WARM WHITE)



### Features/Technical Specification:

- Electrical Input
  - 100VAC-240VAC
- Power Consumption
  - 2.4W max
- Life rating
  - 50,000 hours
- Housing
  - Aluminum with Powder Coat
- Intensity Control
- Weight (g)
  - 105



2019

## Customize LED Illumination

### CUSTOMIZE ILLUMINATION



MULTI ANGLE RGB  
TUNNEL LIGHT



HUGE SIZE DOME ILLUMINATION  
(800MM DIAMETER)



SHOWER ILLUMINATION  
WITH DIAMETER 200MM



CUSTOM SIZE CO-AXIAL  
200X400MM



IDT2-MULTI ANGLE ILLUMINATION



HIGH POWER LED CO-AXIAL  
COMBINE DUAL ANGLE  
ILLUMINATION

## LENSES &amp; OPTICS

 <p><b>Bi-Telecentric lens</b></p>		<p>TC Series / TC Core Series            TCSM Series (3D Bi-Telecentric)            TCLWD Series            TCCGX Series            TCZR Series            TCBENCH / TCBENCH CORE Series            TC2MHR-TC4MHR / CORE Series</p>
 <p><b>Special Lens &amp; Projectors</b></p>		<p>PC Series (360° Top &amp; lateral view)            PCCD Series (360° Top &amp; lateral view)            PCHI Series (360° inside view)            PCPW Series (Polyview)            PCMP Series (Micro-polyview)            LTPRSMHP3W Series (3D LED Projector)            LTPRXP Series (10W LED Projector)            LTPRUP Series (90W LED Projector)</p>
 <p><b>Telecentric lens &amp; Non Telecentric lens</b></p>		<p>MP Series            HR Series            TV Series            TV-X Series            TV-XE Series            TCL/TCLF Series</p> <p>MDF Series            TN Series            HR/HR-D Series            TV-D/LTV Series</p>
 <p><b>CCTV Lens</b></p>		<p>VMK Series (Up to 1" sensor)            MK-5MP Series (Up to 2/3" sensor)            MK-C Series (Up to 2/3")            MK Series (Up to 2/3")            HF/LM (Up to 2/3")            MK-SWIR (Up to 2/3")</p>
<p><b>Filters</b></p>		<p>Bandpass            Long/short pass            Polarizing            Protective</p>

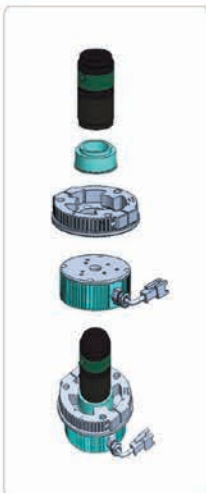
# 2019 Lens Retrofit

## Lens Retrofit

- Allow lens & lighting to be mounted simply into a vision module
- Space efficient
- Cost efficient



### RETROFIT MK SERIES



### LENS MODEL

MK1214

MK1614

MK2514  
MK3520  
MK5028

### CLAMP & PLATE



MK32-M30.5-28070-01



MK32-M30.5-49102-01



MK32-M25.5-28070-01



MK32-M25.5-49102-01



### OPTO ENGINEERING LIGHTING



DLR3 SERIES



DFR4 SERIES



HPD2 SERIES

### RETROFIT MC & MC3-03X SERIES



### LENS MODEL

MC 033X  
MC 050X  
MC 075X  
MC 100X  
MC 150X  
MC 200X  
MC 300X

MC3-03X-  
SPACER

### CLAMP & PLATE



MC-15-28070-01



MC-15-28102-01

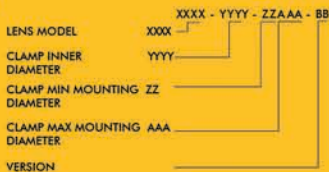


MC3-28-28102-01

# Lens Retrofit

## Lens Retrofit

- Allow lens & lighting to be mounted simply into a vision module
- Space efficient
- Cost efficient



### RETROFIT MP SERIES LENS MODEL

### CLAMP & PLATE

	MP-1.5M-65	MP29-28070-01                  MP29-49102-01                  MP32-28070-01                  MP32-49102-01
	MP-05M-65	
	MP-2M-65	
	MP-07M-65	
	MP-4M-65	MP38-28070-01                  MP38-49102-01                  MP44-28070-01                  MP44-49102-01
	MP-1M-65	
	MP-0.5M-110-2M	
	MP-1.5M-110-2M	
	MP-07M-110-5M	
	MP-05M-110-5M	
MP-1M-110-2M	MP50-28070-01                  MP50-49102-01	
MP-2M-110-2M		
MP-1M-110-5M		

### RETROFIT HR SERIES

	HR-2M-65	HR16-28070-01                  HR16-28102-01
	HR-4M-65	
	HR-6M-65	
	HR-04M-78	HR25-28070-01                  HR25-28102-01
HR-05S2-71		
HR-05M-110		
HR-08M-110	HR26-28070-01                  HR26-28102-01	
HR-08M-65		
HR-1M-65	HR-2M-110	HR18-28070-01                  HR18-28102-01
HR-4M-71	HR-4M-110	
HR-07M-71	HR-6M-71	
HR-1M-71	HR-1M-110	

### LIGHTING

<p>DLR3 SERIES</p>	<p>DFR4 SERIES</p>	<p>HPD2 SERIES</p>
--------------------	--------------------	--------------------



# 2019 LED Light Source

## CONTROLLER SELECTION TABLE

Control	Analogue			
Mode Operation	Constant Mode			
Power Input:	AC Input (100-240V)	DC Input (24V)	DC Input (24V)	DC Input (24V)
External Control	NIL	NIL	NIL	NIL
Specification	Constant: 1A Max Output Voltage Selection (5V & 24V)	Constant: 2A Max Output Voltage 24V	Constant: 1A Max Output Voltage 5V	Constant: 3A Min Constant: 5A Max Output Voltage 24V
No. Of Channel :				
1 Channel	ANG-1000-CH1-XX-A1	SD-1000-D1	SDH-1000-D1	SDX-CH1-1A
2 Channel	ANG-2000-CH2-XX-A1			
4 Channel	ANG-4000-CH4-XX-A1			

Remark: Please refer page 64 for ANG Controller, page 65 for SD & SDH Controller, page 66 for SDX Controller

Control	Analogue	
Mode Operation	Constant & Strobe Mode	
Power Input:	DC Input (24V)	DC Input (24V)
External Control	NIL	NIL
Specification	Constant: 2A Max & Trigger Panel Mount & Din Rail Output Voltage 24V	Constant: 1A Max & Trigger Panel Mount & Din Rail Output Voltage 5V
No. Of Channel :		
1 Channel	ST-1000-D1	STH-1000-D1
2 Channel		
4 Channel		

Remark: Please refer page 67 for ST & STH Controller

Control	Digital	
Mode Operation	Constant & Strobe Mode	
Power Input:	DC Input (24V)	
External Control	TCPIP	
Specification	Constant: 2A Max, Pulse 6A Max (Overdrive) Panel Mount & Din Rail (Option) Output Voltage 24V	Current Sense Temperature Sense High Speed Pulse Width from 1us - 10ms (Step 1us)
No. Of Channel :		
1 Channel	SDA-CH1-X2	
2 Channel		
4 Channel		

Remark: Please refer page 68 for SDA Controller

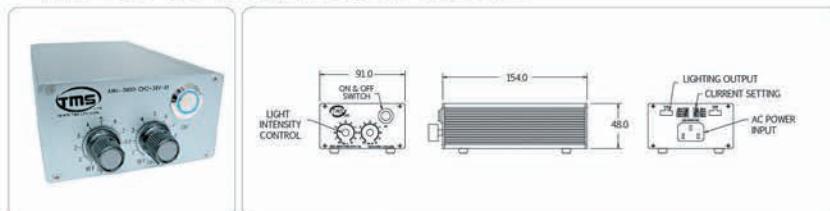
Control	Button	
Mode Operation	Constant & Strobe Mode	
Power Input:	DC Input (24V)	
External Control	NIL	
Specification	Constant: 2A Max, 4A Max (Strobe) Panel Mount & Din Rail	Current Sense High Speed Pulse Width from 1us
No. Of Channel :		
1 Channel	SDP-CH1-A1	
2 Channel		
4 Channel		

Remark: Please refer page 66 for SDP Controller

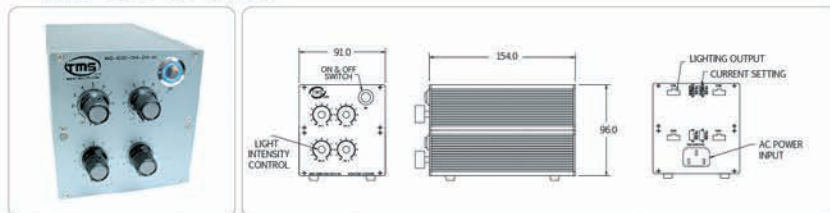
# 2019 LED Light Source

## ANG SERIES - Analog Power Supply

ANG-1000-CH1-XX-A1 / ANG-2000-CH2-XX-A1



ANG-4000-CH4-XX-A1



### FEATURES:

- VR intensity - Input voltage 110 - 240VAC

### POWER CORD:

- UK (240VAC) - EU (220VAC) - US (110VAC)

Model	POWER OUTPUT					DESCRIPTION	Weight (g)
	V	CH1	CH2	CH3	CH4		
ANG-1000-CH1-XX-A1-YY	5	1A / 5W	-	-	-	1 channel LED light source for analog	475
	24	1A / 24W	-	-	-		
ANG-2000-CH2-XX-A1-YY	5	1A / 5W	1A / 5W	-	-	2 channel LED light source for analog	495
	24	1A / 24W	1A / 24W	-	-		
ANG-4000-CH4-XX-A1-YY	5	1A / 5W	1A / 5W	1A / 5W	1A / 5W	4 channel LED light source for analog	945
	24	1A / 24W	1A / 24W	1A / 24W	1A / 24W		

Notes : 1. XX = Voltages Selection 5VDC & 24VDC  
2. YY = UK / EU / US

# 2019 LED Light Source

## SD & SDH SERIES



Model No. SD-1000-D1



Model No. SDH-1000-D1

### Specifications

- Interface**  
VR Analog Controller
- Dimension**  
90 x 24 x 54 MM
- Board Voltage/Input Voltage**  
24VDC
- Number of Channel**  
1 Channel
- Output voltage / current**  
24V / 2A
- Intensity**  
VR Control (Adjustable)
- Mode**  
Constant Mode
- Weight (g)**  
140

### Specifications

- Interface**  
VR Analog Controller
- Dimension**  
90 x 24 x 54 MM
- Board Voltage/Input Voltage**  
24VDC
- Number of Channel**  
1 Channel
- Output voltage / current**  
5V / 1A
- Intensity**  
VR Control (Adjustable)
- Mode**  
Constant Mode
- Weight (g)**  
140

### Features

-The SD & SDH series Controller provides:

#### Single Channel Light Control

-Single Channel has identical features

#### Analog Controller

-It is using the VR adjustable for Control the Lighting intensity

#### Light Output Current Selection (DIP Switch)

-Setting limit current and prolong the lifespan of the lights.



SDP & SDX SERIES CONTROLLER



Model No. SDP-CH1-A1



Model No. SDX-CH1-A1

**Specifications**

**-Dimension**

137 x 52 x 51 MM

**-Board Voltage / Input Voltage**

24VDC

**-Number of Channel**

1 Channel

**-Output voltage / Current**

Max 24V / 2A (Constant)

Max 50V / 4A (Strobe)

**-Mode**

Constant & Strobe Mode

**-Weight (g)**

360

**Features**

**Current Sense**

-Able to sense lighting current during start up

**Overdrive**

-Overdrive lighting to max 3 times (Strobe mode only)

**High Speed Trigger**

-Min trigger pulse width is 1 microseconds suitable for high speed application

**Specifications**

**-Interface**

VR Analog Controller

**-Dimension**

137 x 52 x 51 MM

**-Board Voltage / Input Voltage**

24VDC

**-Number of Channel**

1 Channel

**-Output voltage / Current**

Min 24V / 3A

Max 24V / 5A

**-Mode**

Constant

**-Intensity**

Adjustable

**-Weight (g)**

380

**Features**

Support High Power Application



# 2019 LED Light Source

## ST & STH SERIES – Strobe Controller



Model No. ST-1000-D1



Model No. STH-1000-D1

### Specifications

- Interface**  
VR Analog Controller
- Dimension**  
90 x 41 x 54 MM
- Board Voltage/Input Voltage**  
24VDC
- Number of Channel**  
1 Channel
- Output voltage / current**  
24V / 2A
- Intensity**  
VR Control (Adjustable)
- Mode**  
Constant Mode & Strobe Mode
- Weight (g)**  
190

### Specifications

- Interface**  
VR Analog Controller
- Dimension**  
90 x 41 x 54 MM
- Board Voltage/Input Voltage**  
24VDC
- Number of Channel**  
1 Channel
- Output voltage / current**  
5V / 1A
- Intensity**  
VR Control (Adjustable)
- Mode**  
Constant Mode & Strobe Mode
- Weight (g)**  
190

### Features

-The ST & STH series Controller provides:

#### Single Channel Light Control

-Single Channel has identical features

#### Analog Controller

-It is using the VR adjustable for Control the Lighting intensity

#### Light Output Current Selection (DIP Switch)

-Setting limit current and prolong the lifespan of the lights.

2019

# LED Light Source

## SDA SERIES



Model No. SDA-CH1-X2



Model No. SDA-M (Master)



Model No. SDA-CH1-A2

### Specifications

#### -SDA-CH1-X2

SDA-M (Master)  
SDA-CH1-A2 (Channel Controller)

#### -SDA-CH1-A2

Optional can be purchased separately  
(For user already have SDA-M)

#### -Interface

TCPIP

#### -Board Voltage

24VDC

#### -Lighting Input Voltages

24VDC

#### -External Input Signal & Camera Output Signal

3.3V – 24V Rising Edge / Falling Edge Trigger

#### -Output power for Lighting

Max 24V / 2A (Constant mode)  
Max 50V / 6A (Strobe Mode)

#### -Intensity

0 - 100% (Constant Mode)  
100% - 600% (Pulse Mode)

#### -Minimum Strobe Duration

1 microseconds

#### -Cascade Operation

Able to cascade up to 32 controllers

#### -Protection

Current Sense  
Temperature Sense

#### -Weight (g)

520

### Modes:

-Constant Mode – Offers precise continuous lighting intensity control.

Pulse Mode – Provide high current (6 Times) triggering for high speed application

### Features:

Current Sense – Able to sense lighting current during start up

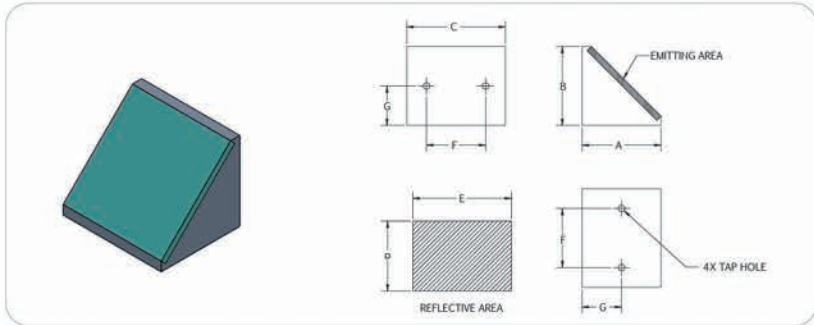
Temperature Sense – Cutoff current when lighting temperature over the specification

Overdrive – Overdrive lighting in 6 times current (Internal push up voltage, no extra power supply require)

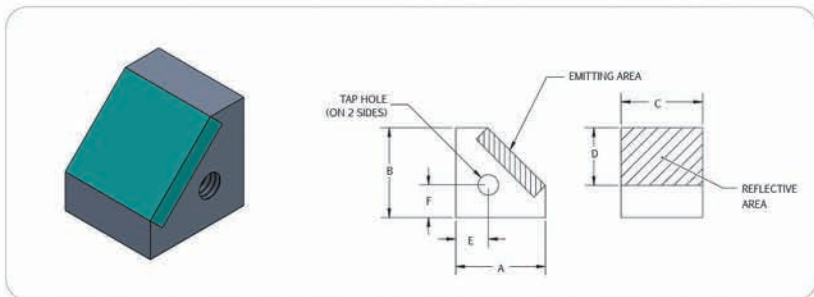
High Speed Trigger – Minimum trigger pulse width is 1 microseconds suitable for high speed application

2019  
Prism Block

PRISM BLOCK SERIES - First Surface Mirror Prism Block



Model	Dimensions (MM)							TAP HOLE	Weight (g)
	A	B	C	D	E	F	G		
PM 14X20	18	18	20	14.1	20	10	9	M3	10
PM 35X50	40	40	50	35.4	50	30	20	M4	50
PM 53X50	58	58	50	53	50	30	29	M4	290



Model	Dimensions (MM)						TAP HOLE	Weight (g)
	A	B	C	D	E	F		
PM 7X10	11.0	11.0	10.0	7.1	4.0	4.0	M3	5

## ILLUMINATOR DEMO KIT

## Illuminator Starter Demo Kit [DK-ST-LIGHTING-V1]



Dimension : L x W x H  
 320 x 230 x 160 (mm)  
 Weight : 3800g

S/N	Content	Description
1	LBRQ-00-040-3-R-24V	Multiple Rectangular Illumination
2	LSW-30-070-3-W-24V	Direct Illumination
3	DLF2-90-070-1-B-24V	Diffused Square Illumination
4	DLS2-60-050-1-W-24V	Diffused Square Illumination
5	DFR4-00-080-1-W-24V	Diffused Angular Illumination
6	BHS4-00-050-X-R-24V	Backlight Illumination 25 X 25 Series
7	EXT-24V-F-3METER	2 Unit of 3 Meter Extension Cables
8	EXT-24V-F-Y4-3METER	3 Meter Branch Cables
9	STARTER DEMO BOX	Suit Case
10	DEMO BOX CONTROLLER 2CH	Analogue Controller SD-1000-D1
11	POWER CORD (UK/US/EU)	24V Power Plug
12	24V POWER ADAPTER	24V Power Adapter

## Illuminator Advance Demo Kit [DK-AD-LIGHTING-V2]



Dimension : L x W x H  
 460 x 330 x 160 (mm)  
 Weight : 6600g

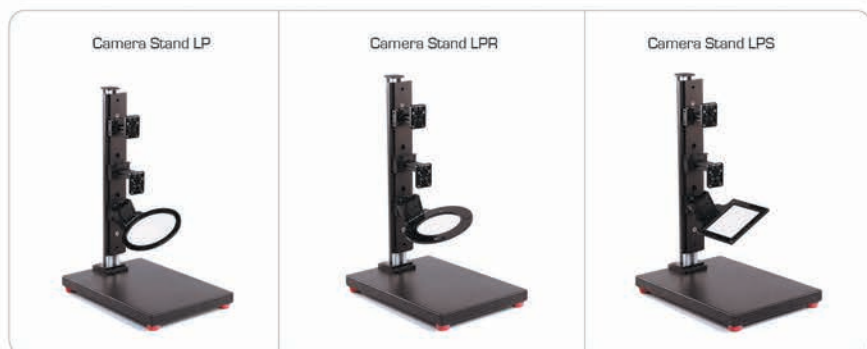
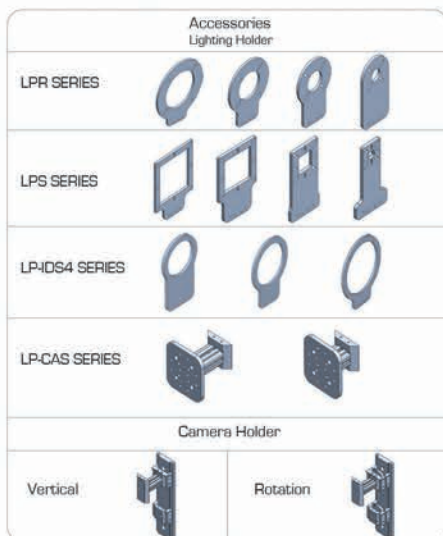
S/N	Content	Description
1	LBRX-00-080-3-R-24V	Rectangular Illumination
2	LBRX-00-080-6-W-24V	Rectangular Illumination
3	LBRQ-00-040-3-W-24V	Multiple Rectangular Illumination
4	LSW-15-090-4-W-24V	Direct Illumination
5	LSW-30-090-4-W-24V	Direct Illumination
6	LLA-90-100-1-B-24V	Direct Low Angle Illumination
7	DFR4-00-100-1-W-24V	Diffused Angular Illumination
8	DLR3-60-100-1-W-24V	Diffused Angular Illumination
9	DLQ2-90-070-1-R-24V	Diffused Square Illumination
10	HPD2-00-100-1-W-24V	Direct Uniform Ring Illumination
11	BHS4-00-090-X-R-24V	Thin Backlight Illumination
12	IDS4-00-100-1-W-24V	Indirect Illumination
13	CAS2-00-040-X-W-24V	Coaxial Illumination
14	SD-2000-D1	Analogue Controller 2CH SD-1000-D1
15	POWER CORD (UK/US/EU)	24V Power Plug
16	24V POWER ADAPTER	24V Power Adaptor
17	EXT-24V-F-3M	Extension Cable 3 Meter
18	EXT-24V-Y4-3M	Extension Cable with 4 output cable

Remarks: Photo for reference only. The color of lighting can be choose based on application.



## CAMERA &amp; ILLUMINATOR MOUNTING SOLUTION KIT

## Camera &amp; Illuminator Mounting Solution Kit

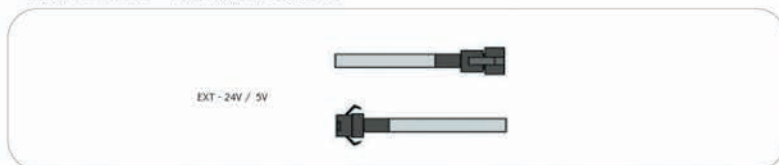


Remarks: Photo for reference only. Illumination be selected.

# 2019 Optional Cable

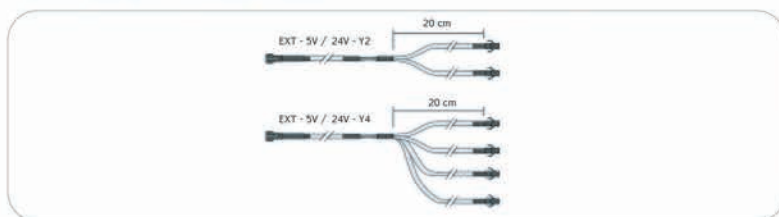
## EXTENSION WIRE

### EXT SERIES - Extension Cables



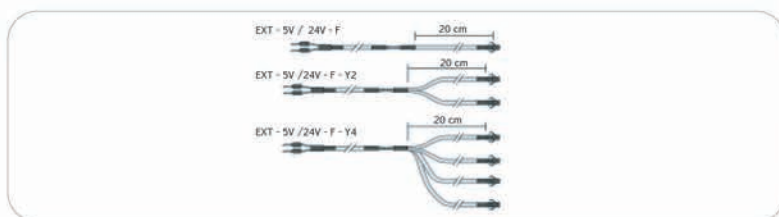
Model	Power	Length	Applications
EXT-24V	24V	3M/5M	- Used to connect a 24V light to ANG Series
EXTX-24V	24V	3M/5M	- Used to connect a 24V light to ANGX Series
EXT-5V	5V	3M/5M	- Used to connect a 5V light to ANG Series

### EXT-Y SERIES - Branch Cables



Model	Branches	Power	Length	Applications
EXT-24V-Y2 EXT-5V-Y2	(2 BRANCHES) Y2	24V 5V	3M/5M	- One channel for power unit and 2 for lightings - Branches ends: 200mm X 2
EXT-24V-Y4 EXT-5V-Y4	(4 BRANCHES) Y4	24V 5V	3M/5M	- One channel for power unit and 4 for lightings - Branches ends: 200mm X 4

### EXT-F SERIES - Ferrule Cables



Model	Power	Length	Applications
EXT-24V-F	24V	3M/5M	- Used to connect a 24V lighting to controller: SD, ST & SDA
EXT-5V-F	5V	3M/5M	- Used to connect a 5V lighting to controller: SDH & STH

2019

## Our Facilities

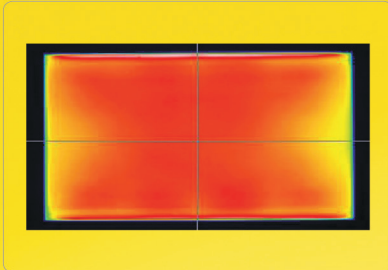
LASER CUT MACHINE



LASER MARKING MACHINE



INTENSITY MEASUREMENT SYSTEM



LED SORTING MACHINE



3D PRINTER



TRAINING CENTRE



TESTING LAB



DEMO SYSTEM





since 2004  
[www.tms-lite.com](http://www.tms-lite.com)

## CONTACT US

---



**TMS LITE SDN BHD (671971-V)**

NO 2A-2, TINGKAT KENARI 5, DESA RIA, SUNGAI ARA,  
11900 PENANG, MALAYSIA

TEL : +604 6468428 | FAX : +604 6463428

*FOR ENQUIRY*  
[enquiry@tms-lite.com](mailto:enquiry@tms-lite.com)

*FOR QUOTATION*  
[sales@tms-lite.com](mailto:sales@tms-lite.com)

*FOR LOAN UNIT*  
[demo@tms-lite.com](mailto:demo@tms-lite.com) | Whatsapp: +6012 5776 850