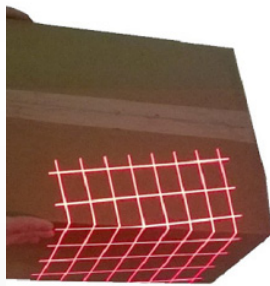


# Pattern Blazer™ LED Pattern Projector



The Pattern Blazer™ is a high power LED Fixed-Pattern Projector for structured lighting in 3D machine vision. It can be used to determine the shape of an object in machine vision applications, it can also help recognize and locate an object in an environment. The Pattern Blazer™ is also useful for contour mapping of parts, surface defect detection, depth measurements, guidelines, edge detection, and alignment.

The Pattern Blazer can be equipped with any LED wavelength from the UVA to the NIR. Broadband white, narrowband blue and red LED wavelengths are the three standard options. Pattern Blazer with white LEDs can produce an illuminance of 1500 lux at a working distance of 10 meters. Intense illuminance allows the Pattern Blazer to operate at long working distance even if there is a daylight background.



### Typical Applications:

- Vision guided robotics; object ID, pick & place
- 3D metrology; precision shape and volume measurement
- Road pavement inspection; structure and roughness
- Biometrics; gesture and facial recognition
- Logistics; box filling, palletizing

### Reticles/Patterns:

The Pattern Blazer employs precision reticles patterned by photolithography which produce thinner lines, sharper edges and more homogeneous illumination. Projected patterns include lines, grids, circles and random point clouds. Custom patterns can be fabricated upon request.

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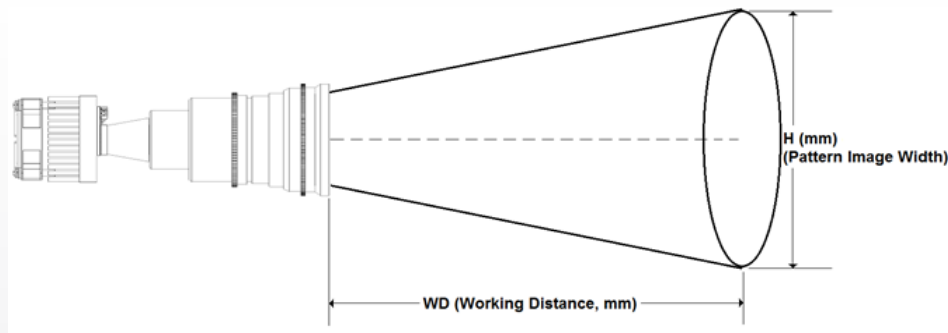
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# PATTERN BLAZER - LED PATTERN PROJECTOR

## LENS OPTIONS

The lenses utilized by the Pattern Blazer are a high performance design used for digital SLR cameras with larger four-thirds format image sensors. The four-thirds DSLR lens standard requires telecentricity in image sensor space. The Pattern Blazer LED Pattern Projector applies a four-thirds lens in reverse for object space so that the telecentricity provides exceptional illumination uniformity over the projected pattern in the far-field.

Focal Length (mm)	f/#	Min WD (mm)
12	2.0	200
16	2.0	200
24	1.4	250
35	1.4	300
50	1.4	450
85	1.4	1000



H (mm) Pattern Image Width		WD (Working Distance, mm)									
		200	300	500	750	1000	2000	4000	6000	8000	10000
Lens Focal Length (mm)	12	185	280	470	700	940	1870				
	16	140	210	350	530	700	1410				
	24		140	235	350	470	940	1870	2810		
	35		95	160	240	320	640	1290	1930	2570	
	50			110	170	225	450	900	1350	1800	2250
	85						130	265	530	800	1060

Pattern Illuminance (klx) White LED/20A Drive Current		WD (Working Distance, mm)									
		200	300	500	750	1000	2000	4000	6000	8000	10000
Lens Focal Length (mm)	12	107	46.8	16.6	7.5	4.2	1.0				
	16	187	83.2	30.0	13.1	7.5	1.9				
	24		383	136	61.2	34.0	8.5	2.2	1.0		
	35		831	292	130	73.2	18.3	4.5	2.0	0.8	
	50			619	259	148	37.0	9.2	4.2	2.3	1.4
	85						444	107	26.6	11.7	6.6

PATTERN BLAZER - LED PATTERN PROJECTOR  
**SPECIFICATIONS AND CHARTS**

**OPERATING SPECIFICATIONS**

Parameter	Specification	Comment
LED Wavelengths	Blue	Peak wavelength 445nm (typical)
	White	CCT 5700K +/- 400K
	Red	Peak wavelength 630nm (typical)
Drive current	Continuous: 30A Max	Pulsed operation is possible
Forward voltage	Limit: 5.0V	Requires constant current operation
Total drive power	150 watts max	At max drive current
PCB Thermal impedance	0.45°C/W	BG-RD2018
Electrical connector	1 row, 8 pin	Surface mount, high current
Cooling Fan	12VDC 190mA	21 cfm
Thermistor B <sub>25/85</sub>	3574 to 3646	For 10 kΩ
Thermistor impedance	10 kΩ	At 25°C
Operating temperature	-40 °C to 85 °C	Depending on drive conditions
Lifetime (hours)	-	Depends on drive conditions and temperature

**BRIGHTNESS AND SPECTRA CHARTS**

Figure 1

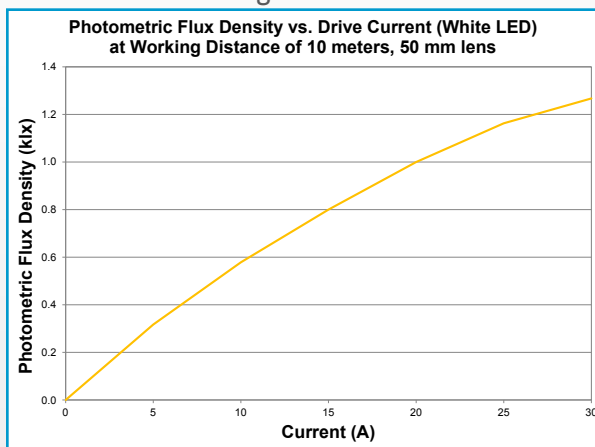


Figure 2

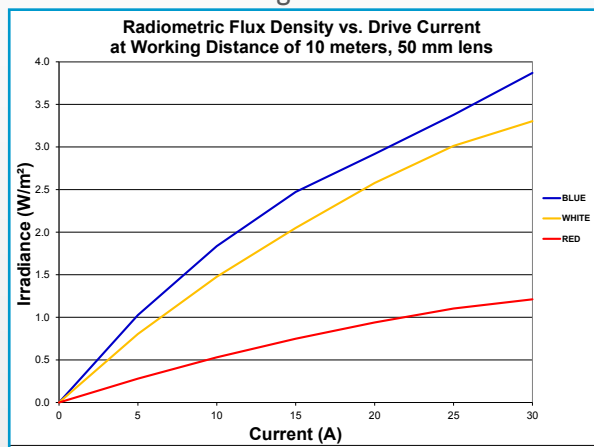
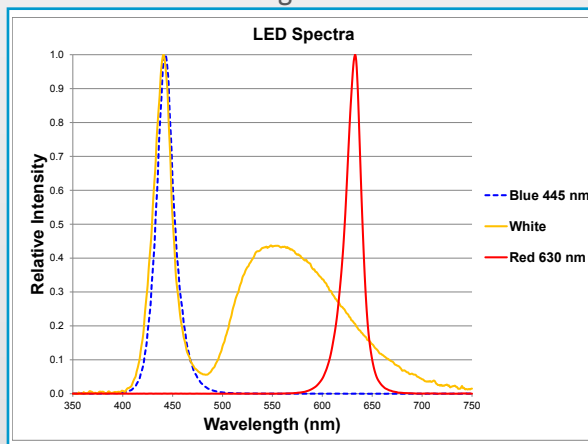


Figure 3

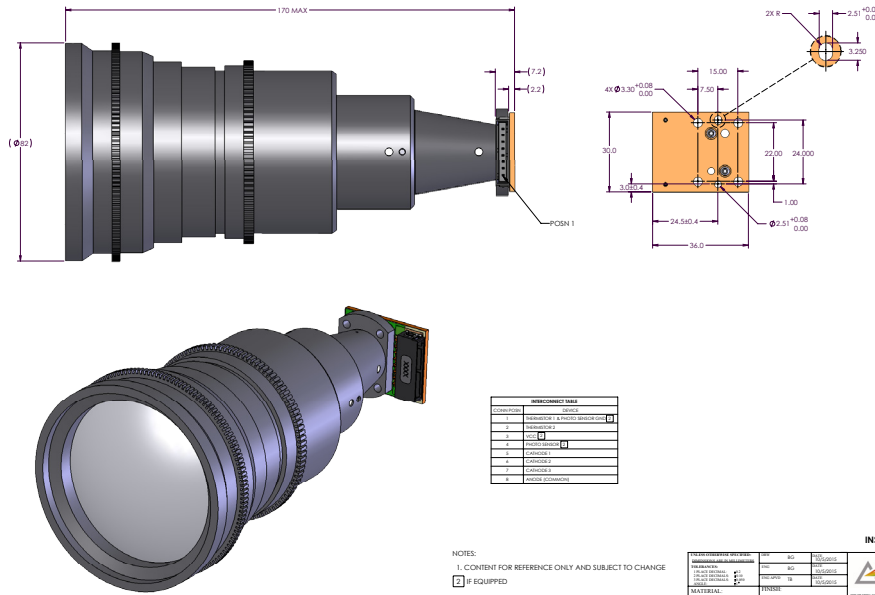


# PATTERN BLAZER - LED PATTERN PROJECTOR

## INSTALLATION CONTROL DRAWING

Note: This ICD shows the 50mm lens

Plot Date: Wednesday, December 16, 2015 1:05:05 PM by: M4590-1



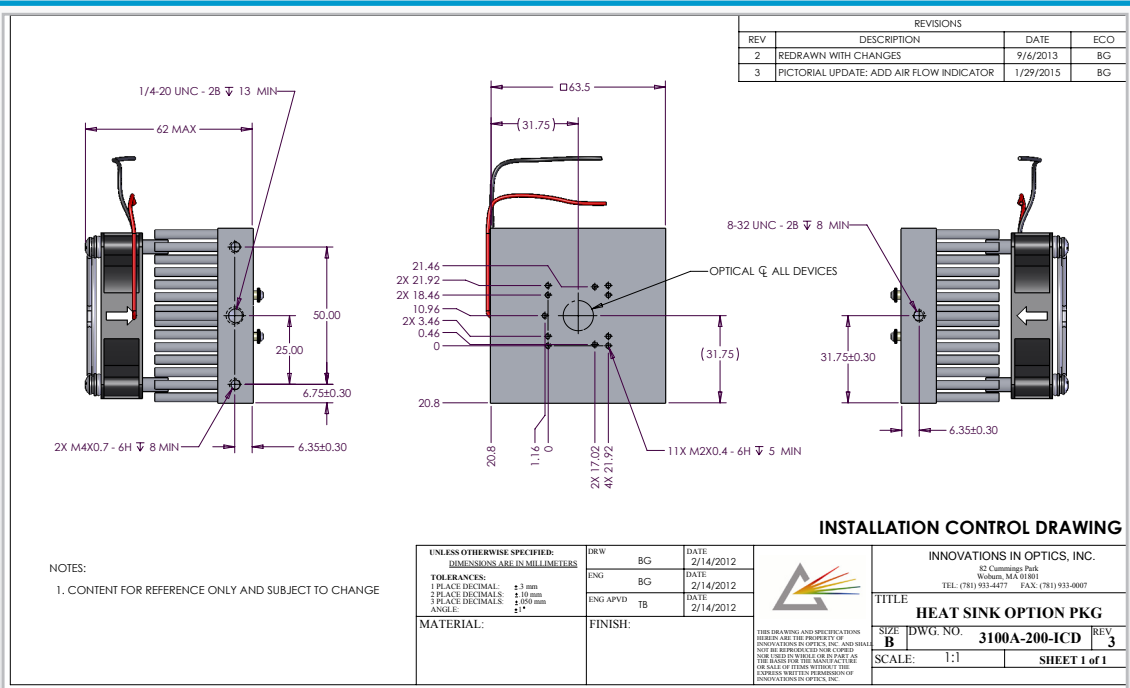
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1. ICD	1
2. ICD	1
3. ICD	1
4. ICD	1
5. ICD	1
6. ICD	1

NOTES:  
1. CONTENT FOR REFERENCE ONLY AND SUBJECT TO CHANGE  
2. IF EQUIPPED

REV	DESCRIPTION	DATE	ECO
1	ISSUED FOR DESIGN	12/15/2015	BG
2	REDRAWN WITH CHANGES	9/6/2013	BG
3	PICTORIAL UPDATE: ADD AIR FLOW INDICATOR	1/29/2015	BG

### INSTALLATION CONTROL DRAWING

INNOVATIONS IN OPTICS, INC. 82 CUMMINGS PARK WOBURN, MA 01801 TEL: (781) 933-4477 FAX: (781) 933-0007	<b>ILLUMINATOR ASSY</b> <b>D</b> 2198B-168-ICD   1 SCALE: 2:1 SHEET 1 of 1
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NOTES:  
1. CONTENT FOR REFERENCE ONLY AND SUBJECT TO CHANGE

UNLESS OTHERWISE SPECIFIED:	DRW	BG	DATE
DIMENSIONS ARE IN MILLIMETERS			2/14/2012
TOLERANCES:	ENG	BG	DATE
1 PLACE DECIMAL: +3 mm			2/14/2012
2 PLACE DECIMALS: ±10 mm	ENG APVD	TB	DATE
3 PLACE DECIMALS: ±100 mm			2/14/2012
ANGLE: ±1°			

### INSTALLATION CONTROL DRAWING

INNOVATIONS IN OPTICS, INC. 82 CUMMINGS PARK WOBURN, MA 01801 TEL: (781) 933-4477 FAX: (781) 933-0007	
TITLE	<b>HEAT SINK OPTION PKG</b>
SIZE	DWG. NO. <b>3100A-200-ICD</b> REV <b>3</b>
SCALE: 1:1	SHEET 1 of 1

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