

OARL (DOARL, TOARL, QOARL, ROARL101, OARL101-SC2)

Off-Axis Ring Lights provide a low angle plane of light which is useful for highlighting surface defects, illuminating specular surfaces, and side-lighting prominent target features.

Dark field illumination provides high contrast lighting for detecting stress, defects, fingerprints, edges, dust etc. When the dark field light is placed above an object, intense light will appear at the edges and imperfections will be accentuated in a high-contrast manner.



FEATURES

- High Intensity, low angle of light
- Thermal management affords cost effective design
- Very high intensity with ±5% uniformity
- High Density Precision Chip Technology (HDPCT)
- Custom sizes and configurations available
- Optional Constant Current Driver with 0 – 10VDC intensity control, compatible with DDC-3 and ILD-35-24-L
- Flicker free performance and instant start up with Metaphase analog driver technology

WAVELENGTHS	
Order ID	Description / nanometers
W	White (6000K), Nominal
R	Red / 630nm
G	Green / 530nm
B	Blue / 470nm
IR880	Infrared / 880nm
UV365	Ultraviolet Short / 365nm
UV395	Ultraviolet Long / 395nm

GENERAL SPECIFICATIONS

- Power Source:** 24VDC ±5%
- Cable (Standard):** 10-foot cable with flying leads
- Housing:** Black Anodized Aluminum
- Ambient Temp:** -20°C to 40°C
- Lifetime Expectancy:** 75,000 hours (except UV)

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Off-Axis Ring Lights (Single Ring)									
MODEL	Outside Dimensions Inches (cm)	Height Inches (cm)	Active Area, Inside Diameter Inches (cm)	Weight lbs (kg)	Standard Cable(s)			Maximum Current (Amps)	
					Quantity	Length	AWG/ Conductors	Visible	IR, UVS, UVL
OARL050	3.0 x 3.0 (1.76 x 1.76)	.56 (1.42)	1.0 (2.54)	0.3 (.135)	1	10ft	24/4	.13	.21
OARL111	5.0 x 5.0 (12.7 x 12.7)	.56 (1.42)	2.0 (5.08)	0.7 (.318)				.15	.28
OARL201	7.0 x 7.0 (17.8 x 17.8)	.56 (1.42)	4.0 (10.2)	1.1 (.500)				.25	.47
OARL301	9.0 x 9.0 (22.9 x 22.9)	.56 (1.42)	6.0 (15.2)	1.6 (.726)				.33	.61
OARL401	11.0 x 11.0 (27.9 x 27.9)	.56 (1.42)	8.0 (20.3)	2.0 (.907)				.44	.81
OARL501	13.0 x 13.0 (33.0 x 33.0)	.56 (1.42)	10.0 (25.4)	2.5 (1.13)				.50	.96
Unique Single Ring Configurations									
ROARL101 (Round)	∅3.80 (9.65)	.67 (1.69)	2.0 (5.08)	0.6 (.270)	1	10ft	24/4	.13	.24
OARL101-SC2 (Half-Circle)	2.5 x 5.0 (6.4 X 12.7)	.64 (1.64)	2.0 [1/2] (5.08)	0.4 (.181)				.12	.22
MT-OARL-IP65 (Stainless-Steel)	11.5 x 11.5 (29.2 x 29.2)	.70 (1.79)	8.0 (20.3)	8.0 (3.63)				.45	.87
Off-Axis Ring Lights (Dual Ring)									
DOARL101	5.0 x 5.0 (12.7 x 12.7)	1.44 (3.66)	2.0 (5.08)	1.4 (.635)	2	10ft	24/4	.30	.55
DOARL201	7.0 x 7.0 (17.8 x 17.8)	1.44 (3.66)	4.0 (10.2)	2.3 (1.04)				.55	1.0
DOARL1675	20 x 20 (50.7 x 50.7)	1.44 (3.66)	16.75 (42.54)	7.0 (3.8)			18/4	3.0	5.8
Off-Axis Ring Lights (Triple Ring)									
TOARL201	7.0 x 7.0 (17.8 x 17.8)	2.50 (6.34)	4.0 (10.2)	3.8 (1.72)	3	10ft	24/4	.80	1.5
Off-Axis Ring Lights (Quad Ring)									
QOARL201	7.0 x 7.0 (17.8 x 17.8)	3.15 (8.01)	4.0 (10.2)	~5.2 (~2.36)	4	10ft	24/4	1.3	2.5

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Wiring (4 conductors, flying leads)**	
Wire Color	Function
RED	+24VDC
WHITE	0-10VDC INTENSITY CONTROL
BLACK	GROUND (24V RTN)
GREEN	SIGNAL GROUND

Wiring (4 conductors, without Intensity Control)	
Wire Color	Function
RED	+24VDC
WHITE	+24VDC
BLACK	GROUND (24V RTN)
GREEN	GROUND (24V RTN)

M12 (5 position male)**	
Pin #	Function
1	+24VDC
2	0-10VDC Intensity Control
3	GROUND (24V RTN)
4	SIGNAL GROUND
5	No Connection

The M12 connector option is not recommended for lights rated more than 4 amps

Wiring with ULC-2	
Wire Color	Function
RED, WHITE (+)	LED INPUT
BLACK, GREEN (-)	

Terminated within a 2 position ULC-2 output connector
(Phoenix Contact P/N: BCP-508-2)

**Note: The 0-10VDC Intensity Control input can accept voltages from 0-24VDC where the light will operate at full intensity in the 10-24VDC range. The light is proportionally dimmer for any Intensity Control voltage less than 10VDC and the light is OFF at approximately 0V or not connected (floating).

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PART NUMBER KEY													
MODEL	SIZE	-	WAVELENGTH	-	DRIVER* (most common)	-	DIFFUSER	-	CONTROL ZONES	-	CABLE LENGTH	-	CONN.** (most Common)
OARL	XXXX	-	XXXXX	-	XXXX-XXXXXX	-	XX	-	XXXXX	-	XXX	-	XXXX
OARL	050		W (White 6000K, Nominal)		24CV		ND (No Diffuser)		ZONE2		5M		M12D ^{1 2}
OARL	101		R (Red 630nm)		24Z		D1 (Lenticular)		ZONE4		10M		BC ^{1 3}
OARL	111		G (Green 530nm)		24Z-TRG		D6 (1x30)						
OARL	201		B (Blue 470nm)		24-ILSXXX								
OARL	211		IR880 (Infrared 880nm)		24-ILD								
OARL	301		UV365 (UV Short 365nm)		U ¹								
OARL	401		UV395 (UV Long 395nm)										
OARL	501												
ROARL	101 (round)												
OARL	101-SC2 (half)										Length can be customized: ex.7M=7meters		
DOARL	101 (Dual)												
DOARL	201 (Dual)												
DOARL	1675 (Dual)								Select or leave blank for one control zone				Select or leave blank for flying leads
TOARL	201 (Triple)										Select or leave blank for 3 meters		
QOARL	201 (Quad)												
Example 1: OARL211-R-24CV-ND							¹ Not available in lights exceeding 4A input current						
Example 2: OARL401-G-24Z-D1-ZONE2							² Default cable length for an M12D connector is 19 inches						
							³ Default cable length for a Barrel Connector is 10 feet						

Contact Metaphase Technologies or your local representative for options such as custom diffusers, lenses, polarizers, IP-rated enclosures for harsh environments, higher intensity, custom wavelengths, higher uniformity, etc. Not all options are available for all lights.

*(Link to Driver Options Key)

***(Link to Connector Key)

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Sample Model Number: **OARL401-UV395-24CV-ND**

2X MOUNTING HOLES #8-32 ∇ 23 BOTH SIDES

3.00 [76.20] 3.00 [76.20]

.25 [6.35] 11.00 [279.40] .56 [14.22]

5.50 REF [139.70] 5.50 REF [139.70]

11.00 [279.40]

ϕ 8.00 ∇ THRU [203.20]

ϕ 8.50 [215.90] LENS OD

POWER CABLE

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	9/5/2015	
B	BOM REVISION	12/27/2016	
C	CABLE SIZE UPDATED	9/19/2017	

Metaphase Technologies, Inc. 211 Sinclair Road, Suite 100, Bristol, PA. 19007 215-639-8699 Fax 215-639-0977													
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MATERIAL: See BOM	<table border="1"> <tr> <td>INCHES</td> <td>MM</td> <td>125V RINGS</td> <td>ANGLES \pm</td> </tr> <tr> <td>X</td> <td>.XX</td> <td>[.03/.015]</td> <td></td> </tr> <tr> <td>[.175]</td> <td>[.25]</td> <td>[.13]</td> <td></td> </tr> </table>			INCHES	MM	125V RINGS	ANGLES \pm	X	.XX	[.03/.015]		[.175]	[.25]
INCHES	MM	125V RINGS	ANGLES \pm										
X	.XX	[.03/.015]											
[.175]	[.25]	[.13]											
FINISH: Black Anodize	TREATMENT: N/A	TITLE: RING LIGHT, OFF AXIS 8" (203.2) USED ON: Per Customer SIZE: B DRAWING NUMBER: OARL401 REV: C SCALE: 1:2 SHEET 1 OF 2											
Approval Signature	Date												

COMPLIANCE



CONTACT US

Contact Metaphase Technologies at **215-639-8699** or your local representative for additional details, options and customizations.