

OARL (DOARL, TOARL, QOARL, ROARL101, OARL101-SC2, MT-OARL-IP65)

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
IR850 (or IRN)	Infrared / 850nm
IR880 (or IRL)	Infrared / 880nm
IR940	Infrared / 940nm
UV365 (or UVS)	Ultraviolet Short / 365nm
UV395 (or UVL)	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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MODEL NUMBER KEY						
MODEL	COLOR (Wavelength)	STANDARD OPTION	VOLTAGE	M12 OPTION	CUSTOM OPTION	
XOARLXXX	XXX	XXX	XXX	X	XXX	
_OARL050 _OARL111 _OARL201 _OARL301 _OARL401 _OARL501 ROARL101 _OARL101-SC2 MT-OARL-IP65 DOARL101 DOARL201 DOARL1675 TOARL201 QOARL201 Choose one	W (White 6000K, Nominal) R (Red 630nm) G (Green 530nm) B (Blue 470nm) IR850 (or IRN) (Infrared 850nm) IR880 (or IRL) (Infrared 880nm) IR940 (Infrared 940nm) UV365 (or UVS) (UV Short 365nm) UV395 (or UVL) (UV Long 395nm) Choose one	PS (Power Supply) BC (Barrel Conn.) Choose one or leave blank	24 (+24VDC) KEY (Keyence Controller) U (ULC-2 Controller) ILD (In Line Dimmer) ILS (In Line Strobe) Choose one	T (M12 Conn.) Choose "T" or leave blank	XXX Customizable per order (ie. Customer's initials) XXM Custom cable length (ie. 12M for 12 meters) Z (Intensity Ctrl) Choose all that apply	

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.

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Sample Model Number: **OARL401-W-24-Z**

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

3.00 [76.20] 3.00 [76.20]

.25 [6.35] 11.00 [279.40] 5.50 REF [139.70] .56 [14.22]

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			
QUANTITY: 1 per assy.	TOLERANCE/FINISH UNLESS OTHERWISE SPECIFIED	THIS DOCUMENT IS THE PROPERTY OF METAPHASE TECHNOLOGIES, INC. WHOM MAY LOAN IT. SUBJECT TO RETURN UPON DEMAND. IT INCLUDES CONFIDENTIAL & PROPRIETARY INFORMATION WHICH MAY NOT BE DISCLOSED TO ANY THIRD PARTY, AND OR USED FOR ANY PURPOSE CONTRARY TO ITS INTENDED USE, WITHOUT THE EXPRESSED PRIOR WRITTEN CONSENT OF METAPHASE TECHNOLOGIES, INC.	
MATERIAL: See BOM	INCHES (MM)		
FINISH: Black Anodize	X .X .XX .XXX	125V RINGS (N/A)	TITLE RING LIGHT, OFF AXIS 8" (203.2)
TREATMENT: N/A	±.030 [±.76] ±.010 [±.25] ±.005	ANGLES \pm 1°	USED ON Per Customer
Approval Signature	Date		SIZE B DRAWING NUMBER OARL401 REV C SCALE 1:2 SHEET 1 OF 2

COMPLIANCE



CONTACT US

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