

# Indoor Photometric Report

## IES Header Data

<b>ISSUEDATE</b>	Tuesday, October 4, 2022
<b>MANUFAC</b>	Cerno LLC
<b>TEST</b>	1
<b>TESTLAB</b>	Photopia for SOLIDWORKS 2022.0.8.11443 see: www.ltioptics.com/ies
<b>TESTDATE</b>	Tuesday, October 4, 2022 11:39:58 AM
<b>LUMINAIRE</b>	Rima Outdoor, 03-310-S-27P1
<b>LAMP</b>	(2) LED, 6.58W/LED, 2700K
<b>LAMPCAT</b>	COB Series

## Input

<b>Number of Lamps</b>	2
<b>Luminous flux per Lamp</b>	640 lm
<b>Total Input Luminous flux</b>	1280 lm
<b>Input Watts</b>	15.13 W

## Output

<b>Total Output Luminous flux</b>	844.61 lm
<b>Efficiency</b>	65.99 %
<b>Efficacy</b>	55.84 lm/W

## Luminous Dimensions

<b>0° - 180° Size</b>	1.15 ft
<b>90° - 270° Size</b>	0.45 ft
<b>Height</b>	0.3 ft

**Photometry Information**

Distribution	Direct-Indirect
Photometry Type	C

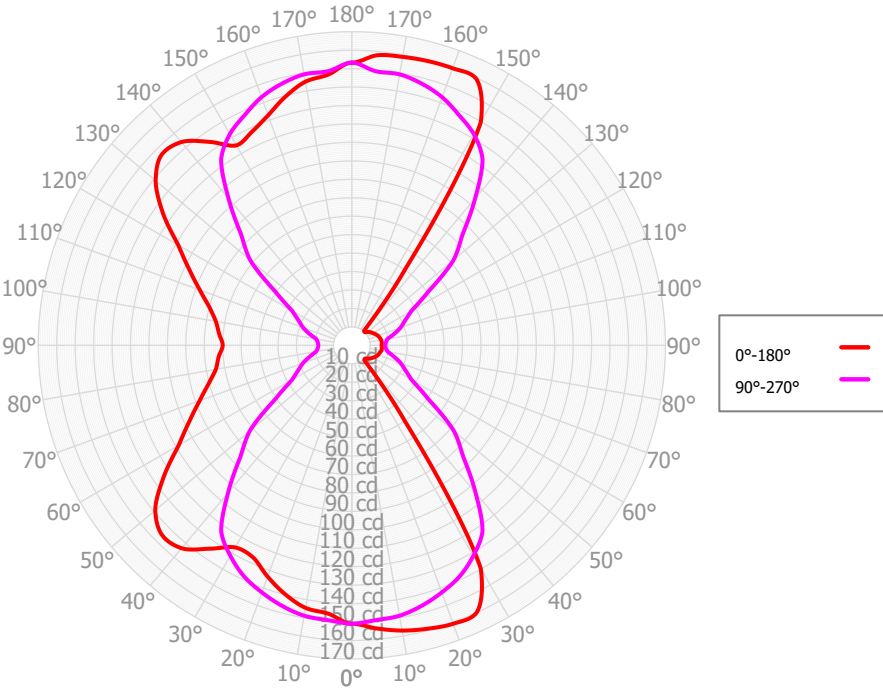
**Spacing Criterion**

Two luminaires, plane 0°	1.2
Two luminaires, plane 90°	1.29
Four luminaires	1.23

**Full Beam Angle**

0° - 180°	108.36°
90° - 270°	93.87°

**Candela Polar Plot**



**Candela Distribution**

	0.00°	90.00°	180.00°
0.00°	150.96	150.96	150.96
5.00°	154.11	149.60	146.10
10.00°	157.05	148.88	144.56
15.00°	159.09	146.23	139.73
20.00°	160.66	142.58	133.46
25.00°	160.01	138.26	126.84
30.00°	139.89	131.77	126.54
35.00°	49.88	123.45	134.64
40.00°	10.55	104.39	143.62
45.00°	10.17	85.43	145.51
50.00°	11.19	72.25	139.17
55.00°	12.34	50.38	124.60
60.00°	13.32	37.45	108.42
65.00°	14.35	32.08	97.09
70.00°	15.16	28.17	87.81
75.00°	15.63	23.59	80.38
80.00°	16.27	19.77	74.89
85.00°	16.35	18.55	72.51
90.00°	16.18	18.19	70.03
95.00°	16.33	18.56	72.25
100.00°	16.15	19.59	74.88
105.00°	15.69	23.67	79.95
110.00°	15.09	28.11	87.70
115.00°	14.23	31.84	97.24
120.00°	13.24	37.35	108.69
125.00°	12.38	50.45	125.09
130.00°	11.28	72.00	138.87
135.00°	10.09	84.85	145.97
140.00°	10.32	104.02	143.87
145.00°	50.80	123.51	134.69
150.00°	139.92	132.27	125.22
155.00°	159.53	137.67	127.88
160.00°	159.88	143.18	132.73
165.00°	159.56	146.84	139.50
170.00°	158.82	149.19	145.14
175.00°	157.90	149.18	147.35
180.00°	153.28	153.28	153.28

## Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 10°	15.19	1.80%
10° - 20°	41.68	4.93%
20° - 30°	64.36	7.62%
30° - 40°	68.05	8.06%
40° - 50°	63.10	7.47%
50° - 60°	53.83	6.37%
60° - 70°	43.73	5.18%
70° - 80°	38.03	4.50%
80° - 90°	34.41	4.07%
90° - 100°	34.34	4.07%
100° - 110°	37.95	4.49%
110° - 120°	43.66	5.17%
120° - 130°	53.86	6.38%
130° - 140°	62.96	7.45%
140° - 150°	68.10	8.06%
150° - 160°	64.30	7.61%
160° - 170°	41.76	4.94%
170° - 180°	15.29	1.81%
0° - 90°	422.39	50.01%
90° - 180°	422.22	49.99%
0° - 180°	844.61	100.00%

## Indoor CU Table

Values are lumens delivered to the workplane from a single luminaire

	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	<b>0</b>	905	905	905	905	835	835	835	835	704	704	704	584	584	584	474	474	474	422
	<b>1</b>	815	773	736	703	749	713	681	652	600	576	555	497	479	464	401	389	378	345
	<b>2</b>	740	673	617	570	679	621	572	531	523	487	456	434	407	383	350	331	315	293
	<b>3</b>	675	591	526	474	619	546	489	443	461	418	382	383	351	324	310	287	267	254
	<b>4</b>	618	523	454	401	566	484	423	376	410	363	326	342	307	278	278	252	231	224
<b>RCR</b>	<b>5</b>	567	467	396	345	520	433	370	323	368	319	282	308	271	241	252	224	202	199
	<b>6</b>	523	419	349	299	480	389	327	281	332	283	247	279	241	212	229	201	179	179
	<b>7</b>	484	379	310	262	445	352	291	247	302	253	218	254	216	188	210	181	159	162
	<b>8</b>	450	344	278	232	414	320	261	219	275	228	194	233	196	168	193	165	143	148
	<b>9</b>	419	314	250	207	386	293	235	196	253	206	174	215	178	152	179	151	130	136
	<b>10</b>	392	289	227	186	361	270	214	176	233	188	157	199	163	137	167	139	118	125

## Cone of Light

Mtg Height	Light Level	Beam Diameter
6.0 ft	4.2 fc	26.4 ft
8.0 ft	2.4 fc	35.2 ft
10.0 ft	1.5 fc	44.0 ft
12.0 ft	1.0 fc	52.8 ft
14.0 ft	0.8 fc	61.6 ft
16.0 ft	0.6 fc	70.4 ft

## UGR CIE 190:2010

Ceiling reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Plane reflectance		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
2H	2H	0.2	1.1	1.2	2.1	3.4	8.7	9.6	9.7	10.6	11.8
	3H	2.7	3.5	3.6	4.4	5.7	10.3	11.1	11.3	12.1	13.4
	4H	3.9	4.7	4.9	5.7	7.0	11.0	11.8	12.0	12.8	14.1
	6H	5.3	6.0	6.3	7.0	8.3	11.7	12.4	12.7	13.4	14.7
	8H	5.9	6.6	6.9	7.6	8.9	12.0	12.7	13.0	13.7	15.0
	12H	6.6	7.2	7.6	8.2	9.6	12.4	13.0	13.4	14.0	15.4
4H	2H	1.6	2.4	2.6	3.4	4.7	9.7	10.4	10.6	11.4	12.7
	3H	4.2	4.8	5.2	5.9	7.2	11.6	12.2	12.6	13.2	14.5
	4H	5.5	6.1	6.5	7.1	8.5	12.5	13.1	13.5	14.1	15.4
	6H	6.9	7.5	7.9	8.5	9.8	13.3	13.8	14.3	14.8	16.2
	8H	7.6	8.1	8.7	9.2	10.5	13.7	14.2	14.7	15.2	16.6
	12H	8.4	8.8	9.4	9.8	11.2	14.1	14.6	15.2	15.6	17.0
8H	4H	6.3	6.8	7.3	7.8	9.2	13.2	13.7	14.2	14.7	16.0
	6H	7.9	8.3	8.9	9.4	10.7	14.3	14.7	15.3	15.8	17.1
	8H	8.8	9.1	9.8	10.2	11.5	14.9	15.2	15.9	16.3	17.6
	12H	9.6	10.0	10.7	11.0	12.4	15.4	15.8	16.5	16.8	18.2
12H	4H	6.5	6.9	7.5	8.0	9.3	13.4	13.8	14.4	14.8	16.2
	6H	8.2	8.5	9.2	9.6	11.0	14.6	15.0	15.6	16.0	17.4
	8H	9.1	9.4	10.1	10.5	11.9	15.3	15.6	16.3	16.6	18.0

Corrected UGR values based on total output energy  
SHR = 1.0

## Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	3163	3163	3163
45.00°	239	852	1513
55.00°	328	589	939
65.00°	455	476	651
75.00°	638	458	544
85.00°	980	490	513