

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P644350

Luminaire Tested: CRQ4DIP-SR4F0-50D150U940-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



Test Information

Test Method: LM-79-2019
Report Number: P644350
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2203-563-26, G2-2206-689-14)
Test Lab: INNOVATION CENTER
Issue Date: 2/20/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: CRQ4DIP-SR4F0-50D150U940-FLLOOB-1DUDD-WW
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE
DOWNLIGHT - CURVED FROSTED LENS - 500 LUMENS PER FOOT
UPLIGHT - BATWING OPTIC - 1500 LUMENS PER FOOT
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

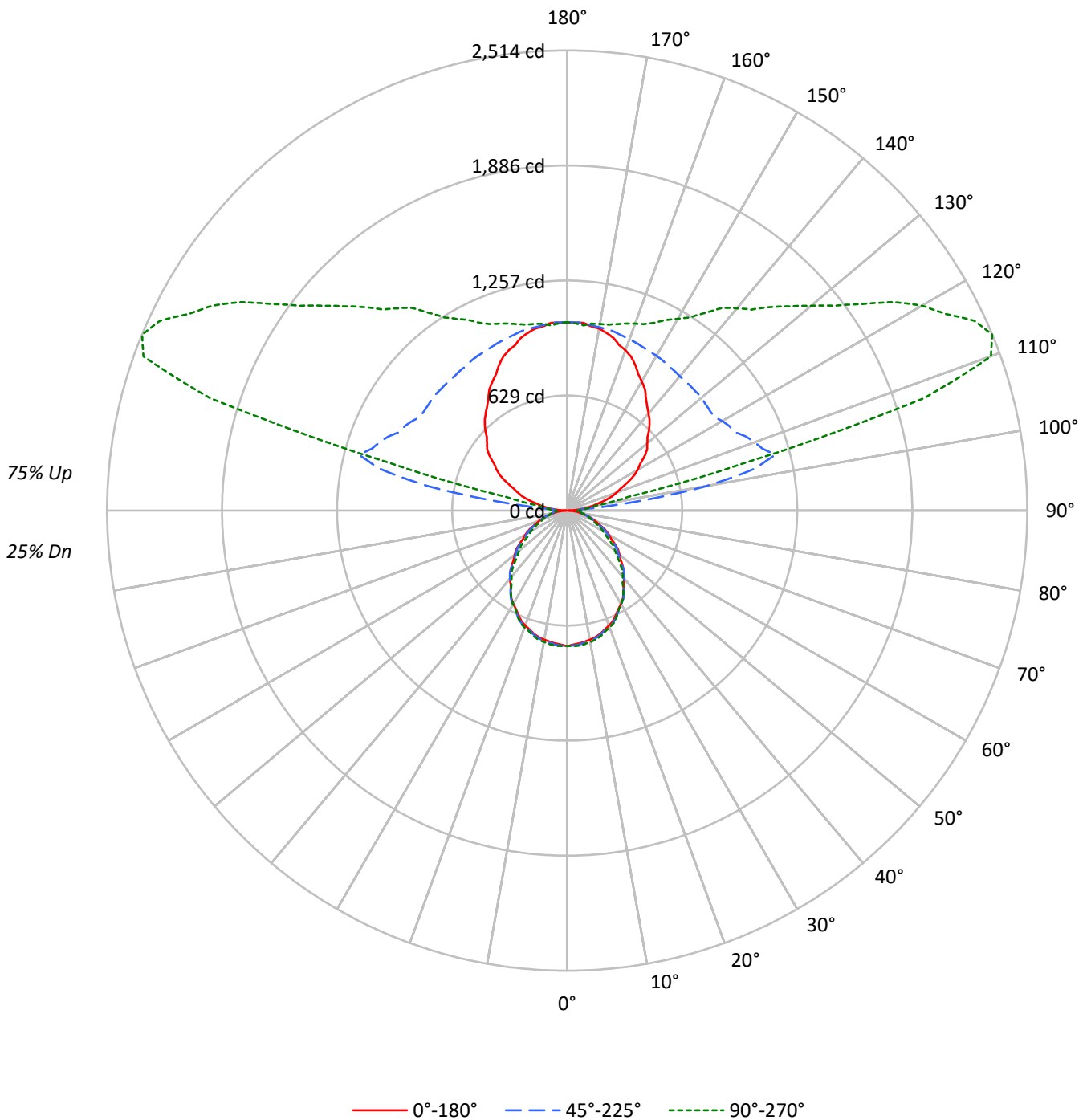
Lumens per Lamp: N/A
Luminaire Lumens: 7437.1 lumens
Efficiency: N/A
Efficacy: 118.2 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')
CIE Type: Semi-Indirect

Input Watts (W): 62.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	101	101	101	101	90	90	90	90	70	70	70	51	51	51	33	33	33	25
1	92	88	84	81	82	78	75	72	61	59	57	44	43	42	29	29	28	21
2	84	77	71	66	74	69	64	59	53	50	47	39	37	35	26	25	24	18
3	76	67	60	55	68	60	54	50	47	43	39	34	32	30	23	21	20	15
4	70	60	52	46	62	53	47	42	42	37	33	31	28	25	20	19	17	13
5	64	53	45	39	57	47	41	36	37	32	29	27	24	22	18	17	15	11
6	59	47	40	34	52	42	36	31	33	29	25	25	22	19	17	15	13	10
7	54	43	35	30	48	38	32	27	30	25	22	22	19	17	15	13	12	9
8	50	39	31	26	45	35	28	24	27	23	19	20	17	15	14	12	11	8
9	47	35	28	23	42	32	25	21	25	20	17	19	16	13	13	11	9	7
10	44	32	25	20	39	29	23	19	23	18	15	17	14	12	12	10	9	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11956	11956	11956
5°	11730	10555	10228
10°	11575	9391	8836
15°	11406	8411	7728
20°	11145	7545	6760
25°	10797	6738	5890
30°	10456	5953	5113
35°	9992	5236	4388
40°	9560	4584	3720
45°	9059	3940	3105
50°	8532	3336	2546
55°	7972	2808	2053
60°	7438	2301	1641
65°	6781	1835	1299
70°	6146	1438	1026
75°	5377	1104	809
80°	4489	821	631
85°	3273	597	479

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 9059 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.9	0.9
10°-20°	198.3	2.7
20°-30°	292.8	3.9
30°-40°	336.6	4.5
40°-50°	326.5	4.4
50°-60°	273.3	3.7
60°-70°	196.9	2.6
70°-80°	120.3	1.6
80°-90°	60.8	0.8
90°-100°	149.6	2.0
100°-110°	909.6	12.2
110°-120°	1226.5	16.5
120°-130°	997.1	13.4
130°-140°	801.1	10.8
140°-150°	631.5	8.5
150°-160°	461.7	6.2
160°-170°	286.8	3.9
170°-180°	97.8	1.3
0°-30°	561.0	7.5
0°-40°	897.6	12.1
0°-60°	1497.4	20.1
0°-90°	1875.5	25.2
90°-120°	2285.8	30.7
90°-150°	4715.4	63.4
90°-180°	5562.0	74.8
0°-180°	7437.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	740	740	740	740	740	
5°	729	742	735	736	742	69
15°	698	708	702	705	710	196
25°	630	640	638	635	639	290
35°	536	545	540	534	534	336
45°	430	434	427	414	408	331
55°	317	321	310	290	281	284
65°	209	210	200	185	180	208
75°	113	113	115	112	110	121
85°	34	42	58	62	62	36
90°	3	27	51	63	64	6
95°	62	106	74	88	102	67
105°	211	312	1176	1505	1001	223
115°	363	435	1011	2100	2454	360
125°	515	583	952	1663	1967	458
135°	634	704	958	1370	1572	488
145°	750	814	964	1193	1320	471
155°	880	912	983	1082	1132	404
165°	977	990	1009	1036	1055	274
175°	1029	1035	1029	1022	1016	97
180°	1029	1029	1029	1029	1029	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	740.5	740.5	740.5	740.5	740.5
2.5°	733.8	744.4	737.9	739.6	740.5
5°	729.0	742.2	735.2	736.4	741.5
7.5°	722.3	734.5	728.3	729.7	735.6
10°	716.4	728.7	721.6	723.8	729.0
12.5°	708.9	720.3	714.9	717.1	722.3
15°	697.6	707.8	701.8	705.0	710.1
17.5°	680.8	691.9	685.4	687.2	692.4
20°	668.3	678.5	674.6	674.7	679.8
22.5°	653.2	664.3	661.2	658.8	664.7
25°	629.6	639.8	638.0	634.9	639.0
27.5°	606.2	613.7	610.1	607.1	610.1
30°	587.8	597.0	590.9	587.8	590.9
32.5°	567.7	576.9	570.8	566.9	568.3
35°	536.5	544.7	539.7	534.4	534.4
37.5°	507.0	512.3	508.9	500.1	497.8
40°	485.3	491.4	486.3	475.8	472.7
42.5°	462.7	468.8	462.9	451.5	446.8
45°	429.8	433.9	426.7	414.0	407.9
47.5°	396.0	400.3	390.3	376.3	369.0
50°	373.4	378.5	366.0	351.2	343.0
52.5°	351.6	355.1	343.5	326.1	318.8
55°	316.9	321.0	309.6	290.5	281.3
57.5°	284.5	288.4	274.8	256.7	249.5
60°	263.6	266.6	253.1	234.1	226.9
62.5°	240.1	243.2	230.5	214.0	206.9
65°	209.2	210.2	199.8	185.0	179.9
67.5°	180.1	180.1	171.3	160.3	156.2
70°	160.0	160.0	153.7	145.3	141.2
72.5°	141.6	140.8	137.0	131.1	127.8
75°	113.0	113.0	115.0	111.9	109.8
77.5°	87.9	86.2	95.2	94.7	93.7
80°	71.1	71.1	82.6	84.7	83.7
82.5°	56.1	57.7	72.6	75.5	74.5
85°	34.5	41.7	57.5	61.7	61.7
87.5°	15.7	29.4	47.8	54.5	54.7
90°	3.1	26.8	50.6	63.4	64.4
92.5°	22.0	37.5	59.4	77.5	84.4
95°	62.2	105.5	73.7	87.8	101.5
97.5°	104.4	190.4	396.3	134.2	120.3
100°	135.5	235.9	776.0	242.5	168.7
102.5°	165.7	271.1	1041.8	607.5	340.5
105°	211.0	312.4	1176.3	1505.4	1001.4
107.5°	256.3	331.4	1120.9	2183.1	2046.2
110°	286.6	357.4	1089.0	2291.9	2463.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	317.6	388.4	1058.0	2225.6	2513.8
115°	363.2	435.0	1011.4	2099.9	2454.1
117.5°	409.8	481.6	999.5	1963.0	2327.4
120°	445.2	512.7	978.0	1859.0	2238.5
122.5°	471.1	542.8	952.1	1770.3	2119.5
125°	515.3	582.8	952.1	1663.2	1966.8
127.5°	551.6	621.6	953.4	1538.9	1838.7
130°	571.4	647.3	958.6	1455.7	1740.4
132.5°	595.6	671.5	957.7	1418.3	1652.4
135°	634.0	703.6	957.5	1369.7	1572.2
137.5°	666.4	741.0	957.5	1316.0	1489.3
140°	692.3	761.9	957.5	1284.6	1442.8
142.5°	718.1	782.7	962.7	1248.1	1396.2
145°	750.5	813.8	964.0	1193.3	1319.8
147.5°	789.3	845.0	971.8	1153.8	1251.3
150°	815.2	865.8	976.9	1127.6	1209.8
152.5°	841.1	886.6	976.9	1106.6	1173.6
155°	879.9	911.5	983.4	1081.6	1132.2
157.5°	910.9	941.3	991.2	1065.8	1102.4
160°	931.6	957.0	996.3	1055.3	1086.9
162.5°	947.2	972.5	1001.5	1049.9	1071.4
165°	976.9	989.6	1009.3	1035.6	1054.6
167.5°	993.8	1005.1	1015.8	1029.0	1040.3
170°	1009.3	1015.6	1015.8	1028.8	1035.2
172.5°	1014.5	1025.8	1020.9	1023.7	1030.0
175°	1028.7	1035.0	1028.7	1022.1	1015.8
177.5°	1028.7	1033.8	1028.7	1028.6	1023.5
180°	1028.7	1028.7	1028.7	1028.7	1028.7

(END OF REPORT)