

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: P644476

Luminaire Tested: CRQ4DP-SR4F0-50D940-FLL-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644476  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2206-689-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 2/20/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: CRQ4DP-SR4F0-50D940-FLL-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 500 LUMENS PER FOOT  
DIRECT ONLY  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

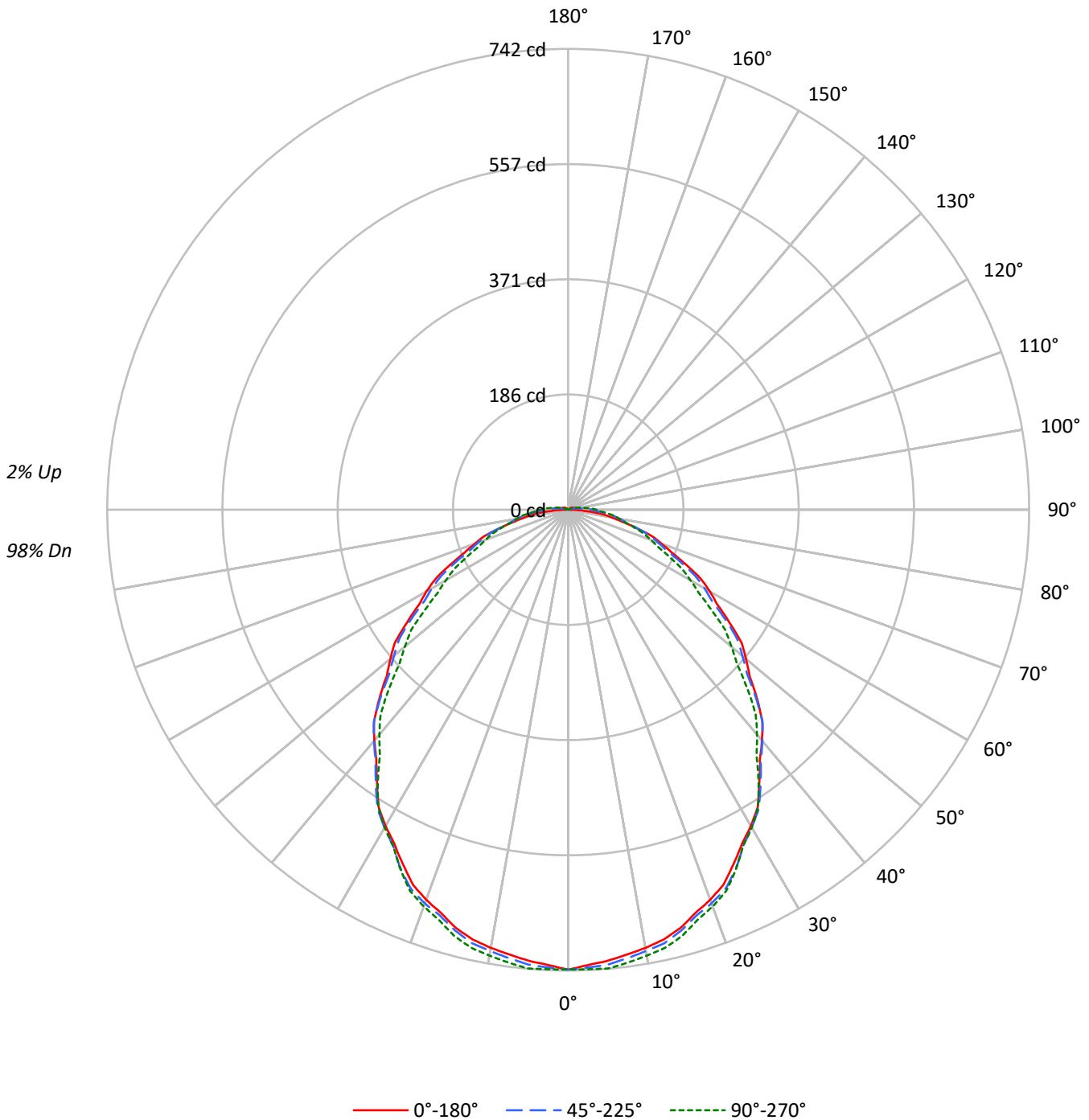
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1908.9 lumens  
Efficiency: N/A  
Efficacy: 133.5 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: 0.02')  
CIE Type: Direct

Input Watts (W): 14.3  
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	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	100	100	100	100	100	100	98	
1	108	103	99	95	105	101	97	93	96	93	90	92	89	87	88	86	84	88	86	84	82	
2	99	91	84	78	96	88	82	77	85	79	75	81	77	73	78	74	71	78	74	71	69	
3	90	80	72	65	88	78	71	65	75	69	63	72	67	62	69	65	61	69	65	61	58	
4	83	71	62	56	80	70	62	55	67	60	54	64	58	53	62	57	53	62	57	53	50	
5	76	64	55	48	74	63	54	48	60	53	47	58	52	47	56	50	46	56	50	46	44	
6	71	58	49	43	69	57	48	42	55	47	42	53	46	41	51	45	41	51	45	41	39	
7	66	52	44	38	64	51	43	38	50	42	37	48	42	37	47	41	36	47	41	36	34	
8	61	48	40	34	60	47	39	34	46	38	33	44	38	33	43	37	33	43	37	33	31	
9	57	44	36	31	56	43	36	30	42	35	30	41	35	30	40	34	30	40	34	30	28	
10	54	41	33	28	52	40	33	28	39	32	27	38	32	27	37	31	27	37	31	27	25	

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	11956	11956	11956
5°	11809	11802	11862
10°	11732	11604	11644
15°	11641	11394	11411
20°	11457	11143	11076
25°	11184	10809	10640
30°	10919	10356	10138
35°	10529	9874	9532
40°	10175	9380	8849
45°	9753	8774	8099
50°	9310	8124	7309
55°	8842	7527	6521
60°	8421	6860	5816
65°	7887	6171	5200
70°	7426	5566	4720
75°	6889	5080	4391
80°	6385	4722	4205
85°	5965	4707	4211

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9753 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	69.9	3.7
10°-20°	198.3	10.4
20°-30°	292.8	15.3
30°-40°	336.6	17.6
40°-50°	326.5	17.1
50°-60°	273.3	14.3
60°-70°	196.9	10.3
70°-80°	120.3	6.3
80°-90°	58.5	3.1
90°-100°	23.1	1.2
100°-110°	8.4	0.4
110°-120°	2.9	0.2
120°-130°	1.2	0.1
130°-140°	0.1	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	561.0	29.4
0°-40°	897.6	47.0
0°-60°	1497.4	78.4
0°-90°	1873.1	98.1
90°-120°	34.5	1.8
90°-150°	35.8	1.9
90°-180°	36.0	1.9
0°-180°	1908.9	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	20	38	44	45	4
95°	10	9	22	29	30	9
105°	10	4	5	10	12	11
115°	7	3	2	2	2	7
125°	4	2	1	0	0	4
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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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	28.2	45.2	50.6	50.8
90°	3.1	20.5	37.7	43.9	45.0
92.5°	6.5	15.7	31.0	37.3	39.1
95°	10.5	9.4	22.0	29.3	30.3
97.5°	12.6	6.2	15.9	22.0	23.2
100°	12.6	5.4	12.6	17.8	19.9
102.5°	11.7	4.6	9.2	14.5	15.7
105°	10.5	4.3	5.2	9.5	11.5
107.5°	9.2	3.3	2.9	5.9	6.9
110°	8.4	3.3	2.1	4.2	5.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	8.4	3.3	2.1	2.5	3.6
115°	7.3	3.2	2.1	2.1	2.1
117.5°	6.1	3.2	1.9	0.8	0.8
120°	5.2	3.2	1.0	0.0	0.0
122.5°	5.2	2.4	1.0	0.0	0.0
125°	4.2	2.1	1.0	0.0	0.0
127.5°	2.9	2.1	1.0	0.0	0.0
130°	2.1	2.1	1.0	0.0	0.0
132.5°	0.4	0.4	0.2	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)