

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: P644223

Luminaire Tested: CRQ4DIP-SR4F0-100D50U840-FLLFLL-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

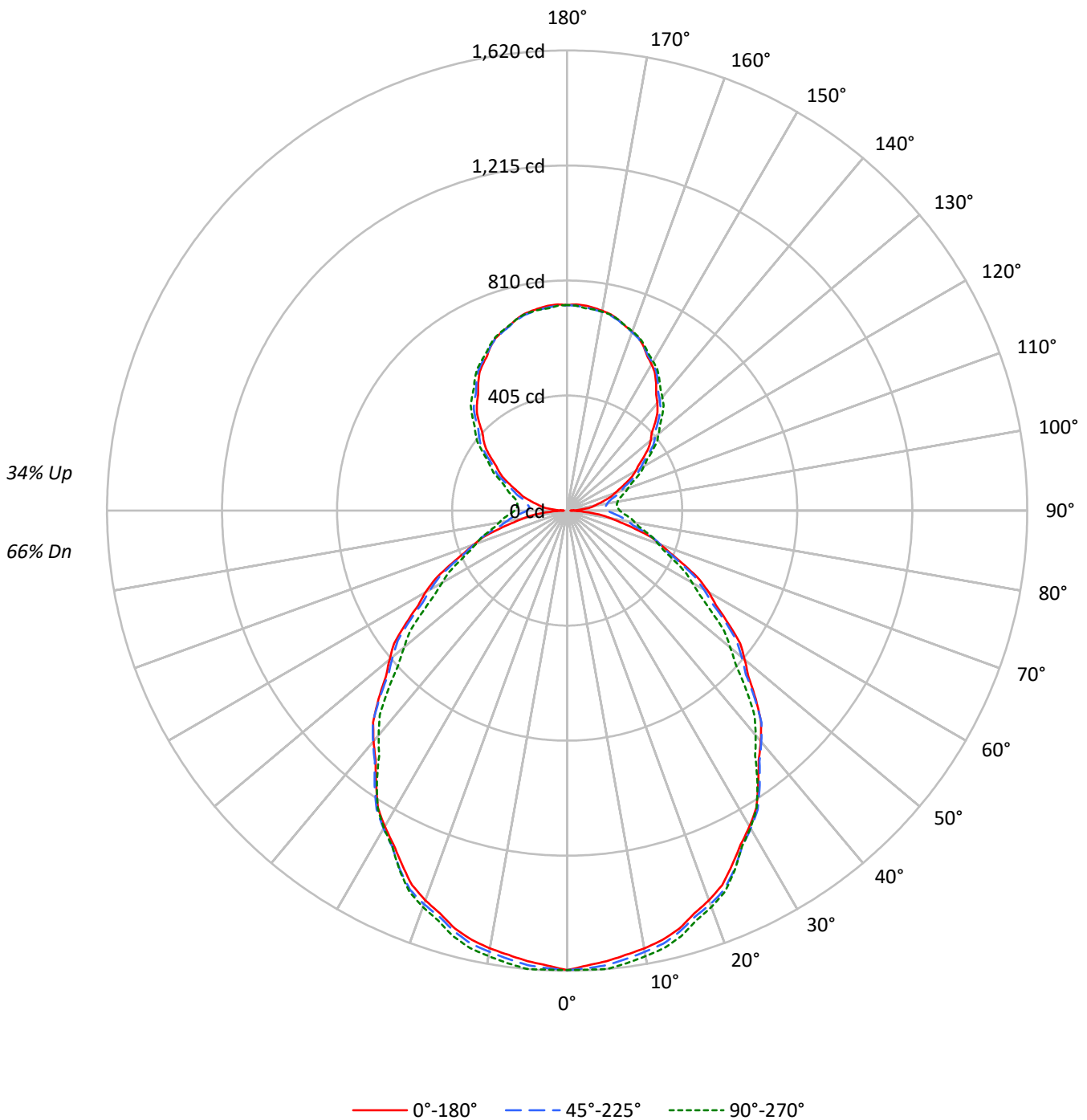
Test Method: LM-79-2019  
Report Number: P644223  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2206-689-28, G2-2206-689-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 2/20/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: CRQ4DIP-SR4F0-100D50U840-FLLFLL-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
UPLIGHT - CURVED FROSTED LENS - 500 LUMENS PER FOOT  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6306.7 lumens  
Efficiency: N/A  
Efficacy: 141.7 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-Direct  
  
Input Watts (W): 44.5  
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	111	111	111	111	105	105	105	105	92	92	92	81	81	81	71	71	71	66
1	101	96	92	88	95	91	87	84	80	77	75	71	69	67	62	60	59	55
2	92	84	77	72	86	79	73	69	70	66	62	62	59	56	54	52	50	46
3	84	74	66	60	79	70	63	57	62	57	52	55	51	47	48	45	42	39
4	77	66	57	51	72	62	55	49	55	49	45	49	44	41	43	40	37	33
5	71	59	50	44	66	56	48	42	50	43	39	44	39	35	39	35	32	29
6	65	53	44	38	61	50	42	37	45	39	34	40	35	31	36	31	28	26
7	60	48	40	34	57	45	38	32	41	35	30	37	31	28	33	28	25	23
8	56	43	35	30	53	41	34	29	37	31	27	34	28	25	30	26	23	20
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	28	24	20	18
10	49	37	29	24	46	35	28	23	32	26	22	29	24	20	26	22	19	17

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

	0°	45°	90°
0°	26118	26118	26118
5°	25624	23060	22345
10°	25286	20526	19302
15°	24916	18382	16883
20°	24346	16491	14767
25°	23586	14718	12868
30°	22840	13021	11170
35°	21829	11460	9587
40°	20883	10021	8127
45°	19792	8613	6782
50°	18638	7311	5563
55°	17415	6147	4526
60°	16248	5055	3675
65°	14809	4079	2994
70°	13429	3263	2476
75°	11744	2627	2102
80°	9812	2138	1828
85°	7154	1815	1643

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 19792 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.7	2.4
10°-20°	433.4	6.9
20°-30°	639.8	10.1
30°-40°	735.9	11.7
40°-50°	714.0	11.3
50°-60°	599.7	9.5
60°-70°	440.4	7.0
70°-80°	287.4	4.6
80°-90°	174.7	2.8
90°-100°	136.6	2.2
100°-110°	175.8	2.8
110°-120°	244.9	3.9
120°-130°	312.9	5.0
130°-140°	352.2	5.6
140°-150°	347.7	5.5
150°-160°	294.1	4.7
160°-170°	195.8	3.1
170°-180°	68.5	1.1
0°-30°	1225.9	19.4
0°-40°	1961.8	31.1
0°-60°	3275.6	51.9
0°-90°	4178.1	66.2
90°-120°	557.4	8.8
90°-150°	1570.2	24.9
90°-180°	2129.0	33.8
0°-180°	6306.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1618	1618	1618	1618	1618	
5°	1592	1622	1606	1609	1620	151
15°	1524	1548	1534	1540	1551	429
25°	1375	1399	1394	1387	1396	634
35°	1172	1192	1181	1168	1168	734
45°	939	950	933	904	891	724
55°	692	704	678	637	620	621
65°	457	464	444	422	414	454
75°	247	253	274	284	285	264
85°	75	109	175	205	212	80
90°	12	70	141	175	185	12
95°	57	71	133	169	175	55
105°	136	133	164	192	199	145
115°	227	230	247	262	266	225
125°	329	338	352	362	366	295
135°	438	448	456	468	473	338
145°	546	553	556	560	566	341
155°	637	641	638	639	643	293
165°	696	699	694	691	696	196
175°	725	728	719	716	716	69
180°	723	723	723	723	723	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1617.6	1617.6	1617.6	1617.6	1617.6
2.5°	1603.0	1626.2	1612.7	1615.8	1617.6
5°	1592.5	1621.5	1606.2	1608.7	1619.9
7.5°	1577.8	1605.3	1591.9	1594.1	1607.1
10°	1565.0	1591.9	1577.2	1581.3	1592.5
12.5°	1548.6	1574.8	1562.0	1566.7	1577.8
15°	1523.9	1547.8	1533.8	1540.2	1551.3
17.5°	1487.4	1512.2	1498.2	1501.3	1512.5
20°	1459.9	1483.0	1474.4	1473.9	1485.1
22.5°	1427.0	1451.9	1445.2	1439.2	1452.2
25°	1375.4	1399.3	1393.7	1387.0	1396.0
27.5°	1324.2	1343.5	1333.8	1326.2	1332.9
30°	1284.0	1305.6	1292.4	1284.2	1290.9
32.5°	1240.2	1262.4	1248.5	1238.4	1241.5
35°	1172.1	1192.2	1181.2	1167.5	1167.5
37.5°	1107.6	1122.3	1112.5	1092.5	1087.5
40°	1060.1	1076.5	1063.2	1039.4	1032.7
42.5°	1010.8	1027.2	1012.6	986.3	976.0
45°	939.0	950.2	932.9	904.5	891.0
47.5°	865.0	877.2	853.7	822.1	806.1
50°	815.7	829.1	802.0	767.3	749.4
52.5°	768.1	778.6	752.0	713.1	697.6
55°	692.3	704.2	677.8	637.1	620.0
57.5°	621.4	632.9	602.9	567.7	553.7
60°	575.8	585.5	556.0	521.5	508.1
62.5°	524.6	534.9	507.9	480.7	468.5
65°	456.9	463.7	444.1	421.9	414.5
67.5°	393.4	397.9	384.8	373.6	369.3
70°	349.6	354.1	348.9	344.4	340.7
72.5°	309.4	312.7	316.7	318.3	316.4
75°	246.8	252.8	273.6	283.7	285.2
77.5°	191.9	196.5	236.9	254.5	258.5
80°	155.4	165.9	215.1	238.2	242.7
82.5°	122.5	139.0	198.0	224.8	229.3
85°	75.4	109.1	174.8	204.8	211.6
87.5°	35.3	84.7	154.6	187.4	195.4
90°	12.2	70.5	140.6	175.3	185.0
92.5°	30.0	68.0	135.8	169.9	179.0
95°	57.4	70.9	133.2	168.6	175.3
97.5°	81.9	82.7	137.8	169.6	176.5
100°	97.3	94.4	143.4	173.4	180.9
102.5°	112.7	108.0	150.8	179.6	186.5
105°	135.7	132.8	164.2	192.0	198.7
107.5°	161.6	159.4	184.4	209.0	214.4
110°	178.8	179.6	200.4	222.0	228.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	199.1	199.9	218.2	236.2	242.1
115°	227.2	230.3	247.2	261.9	265.7
117.5°	256.4	261.8	276.9	289.1	292.7
120°	277.9	283.9	297.2	308.8	311.8
122.5°	298.2	304.2	318.7	330.3	333.3
125°	329.4	337.7	351.7	362.5	365.5
127.5°	361.2	371.0	383.8	394.8	398.7
130°	383.9	393.7	404.7	416.3	420.8
132.5°	403.6	413.4	424.4	437.2	442.3
135°	437.7	447.5	456.2	467.8	473.1
137.5°	471.1	480.5	487.2	496.4	503.0
140°	493.8	502.0	506.8	515.4	521.4
142.5°	514.7	522.9	526.5	533.9	539.9
145°	546.0	552.8	556.0	560.0	566.0
147.5°	575.3	581.9	583.3	586.8	590.5
150°	594.4	600.4	600.5	602.2	605.9
152.5°	612.2	617.6	615.9	616.9	621.3
155°	637.4	641.1	638.2	639.0	642.8
157.5°	657.4	661.1	656.4	657.9	660.9
160°	669.6	673.4	668.1	668.9	671.9
162.5°	681.3	683.9	679.2	678.2	682.4
165°	695.8	698.8	693.5	691.2	695.8
167.5°	708.0	711.0	704.0	701.7	706.2
170°	714.2	717.2	709.6	706.6	711.1
172.5°	719.7	722.7	714.5	710.9	714.2
175°	724.9	727.9	718.8	715.7	715.7
177.5°	726.5	728.3	721.6	718.6	722.2
180°	723.4	723.4	723.4	723.4	723.4

(END OF REPORT)