

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: P644459

Luminaire Tested: CRQ4DP-SR4F0-100D830-FLL-1DUDD-WW

Issue Date: 2/20/2023



Test Information

Test Method: LM-79-2019
Report Number: P644459
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-SR4F0-100D830-FLL-1DUDD-WW
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT
DIRECT ONLY
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

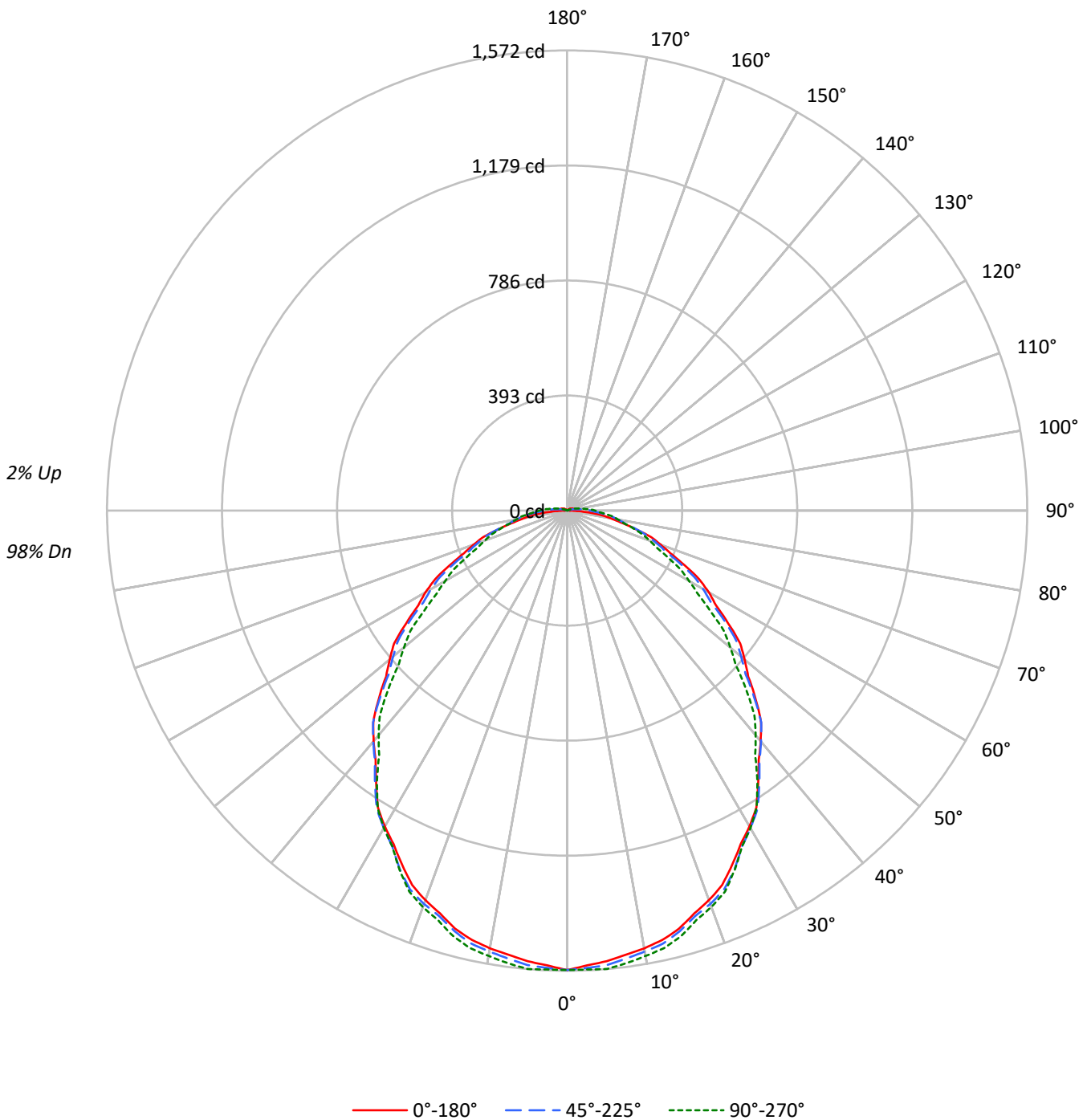
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4045.8 lumens
Efficiency: N/A
Efficacy: 135.3 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): 29.9
Input Voltage (V): 120
Input Current (A_{in}): 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										
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	50	30	10	0														
RCR																																						
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	100	100	100	100	98					98														
1	108	103	99	95	105	101	97	93	96	93	90	92	89	87	88	86	84	84	82					82														
2	99	91	84	78	96	88	82	77	85	79	75	81	77	73	78	74	71	71	69					69														
3	90	80	72	65	88	78	71	65	75	69	63	72	67	62	69	65	61	61	58					58														
4	83	71	62	56	80	70	62	55	67	60	54	64	58	53	62	57	53	53	50					50														
5	76	64	55	48	74	63	54	48	60	53	47	58	52	47	56	50	46	46	44					44														
6	71	58	49	43	69	57	48	42	55	47	42	53	46	41	51	45	41	41	39					39														
7	66	52	44	38	64	51	43	38	50	42	37	48	42	37	47	41	36	36	34					34														
8	61	48	40	34	60	47	39	34	46	38	33	44	38	33	43	37	33	33	31					31														
9	57	44	36	31	56	43	36	30	42	35	30	41	35	30	40	34	30	30	28					28														
10	54	41	33	28	52	40	33	28	39	32	27	38	32	27	37	31	27	27	25					25														

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	25339	25339	25339
5°	25027	25014	25142
10°	24867	24597	24677
15°	24672	24146	24186
20°	24281	23616	23474
25°	23703	22907	22550
30°	23141	21949	21488
35°	22315	20926	20204
40°	21564	19881	18756
45°	20672	18596	17165
50°	19729	17220	15492
55°	18738	15952	13824
60°	17845	14539	12329
65°	16712	13077	11022
70°	15738	11799	10002
75°	14594	10769	9307
80°	13532	10009	8908
85°	12639	9980	8927

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 20672 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	148.1	3.7
10°-20°	420.3	10.4
20°-30°	620.5	15.3
30°-40°	713.4	17.6
40°-50°	692.0	17.1
50°-60°	579.3	14.3
60°-70°	417.4	10.3
70°-80°	255.0	6.3
80°-90°	123.9	3.1
90°-100°	49.0	1.2
100°-110°	17.8	0.4
110°-120°	6.2	0.2
120°-130°	2.6	0.1
130°-140°	0.3	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°	1189.0	29.4
0°-40°	1902.4	47.0
0°-60°	3173.7	78.4
0°-90°	3970.0	98.1
90°-120°	73.0	1.8
90°-150°	75.8	1.9
90°-180°	76.0	1.9
0°-180°	4045.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1569	1569	1569	1569	1569	
5°	1545	1573	1558	1561	1572	147
15°	1478	1500	1487	1494	1505	416
25°	1334	1356	1352	1346	1354	615
35°	1137	1154	1144	1133	1133	712
45°	911	920	904	878	864	702
55°	672	680	656	616	596	602
65°	443	446	423	392	381	441
75°	239	239	244	237	233	256
85°	73	88	122	131	131	77
90°	7	44	80	93	95	8
95°	22	20	46	62	64	19
105°	22	9	11	20	24	23
115°	16	7	4	4	4	15
125°	9	4	2	0	0	8
135°	0	0	0	0	0	1
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°	1569.4	1569.4	1569.4	1569.4	1569.4
2.5°	1555.2	1577.7	1564.0	1567.6	1569.4
5°	1545.0	1573.1	1558.3	1560.7	1571.6
7.5°	1530.8	1556.8	1543.6	1546.6	1559.2
10°	1518.4	1544.4	1529.5	1534.1	1545.0
12.5°	1502.4	1526.7	1515.3	1519.9	1530.8
15°	1478.5	1500.1	1487.3	1494.2	1505.1
17.5°	1443.0	1466.4	1452.8	1456.6	1467.4
20°	1416.4	1438.1	1429.7	1430.0	1440.8
22.5°	1384.5	1407.9	1401.3	1396.3	1408.9
25°	1334.4	1356.1	1352.1	1345.7	1354.3
27.5°	1284.7	1300.8	1293.2	1286.7	1293.2
30°	1245.7	1265.2	1252.4	1245.9	1252.4
32.5°	1203.2	1222.7	1209.8	1201.5	1204.5
35°	1137.1	1154.5	1143.8	1132.7	1132.7
37.5°	1074.6	1085.9	1078.6	1059.9	1055.1
40°	1028.5	1041.5	1030.7	1008.4	1001.9
42.5°	980.6	993.6	981.1	956.9	946.9
45°	911.0	919.7	904.4	877.5	864.5
47.5°	839.2	848.3	827.2	797.6	782.0
50°	791.3	802.2	775.8	744.4	727.0
52.5°	745.2	752.6	727.9	691.2	675.6
55°	671.6	680.3	656.1	615.8	596.3
57.5°	602.9	611.2	582.5	544.1	528.9
60°	558.6	565.1	536.4	496.2	481.0
62.5°	508.9	515.4	488.5	453.6	438.4
65°	443.3	445.5	423.4	392.1	381.3
67.5°	381.7	381.7	363.1	339.8	331.2
70°	339.1	339.1	325.8	307.9	299.2
72.5°	300.1	298.4	290.4	277.8	270.9
75°	239.4	239.4	243.8	237.1	232.7
77.5°	186.2	182.7	201.7	200.8	198.6
80°	150.7	150.7	175.1	179.5	177.3
82.5°	118.8	122.3	153.8	160.0	157.8
85°	73.1	88.3	121.9	130.8	130.8
87.5°	33.2	59.7	95.8	107.3	107.7
90°	6.6	43.5	79.8	93.1	95.3
92.5°	13.7	33.2	65.6	79.0	82.9
95°	22.2	20.0	46.5	62.1	64.3
97.5°	26.6	13.2	33.7	46.6	49.2
100°	26.6	11.4	26.6	37.8	42.1
102.5°	24.8	9.7	19.5	30.6	33.2
105°	22.2	9.2	11.1	20.0	24.4
107.5°	19.5	6.9	6.2	12.5	14.6
110°	17.7	6.9	4.4	8.9	11.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	17.7	6.9	4.4	5.4	7.5
115°	15.5	6.8	4.4	4.4	4.4
117.5°	12.9	6.8	4.0	1.8	1.8
120°	11.1	6.7	2.2	0.0	0.0
122.5°	11.1	5.0	2.2	0.0	0.0
125°	8.9	4.5	2.2	0.0	0.0
127.5°	6.2	4.5	2.2	0.0	0.0
130°	4.4	4.4	2.2	0.0	0.0
132.5°	0.9	0.9	0.4	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)