

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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: P922823

Luminaire Tested: DFN2DIP-SQ3F0-070D050US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922823
REPORT IS A COMBINATION OF REPORTS P901406 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D050US940-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

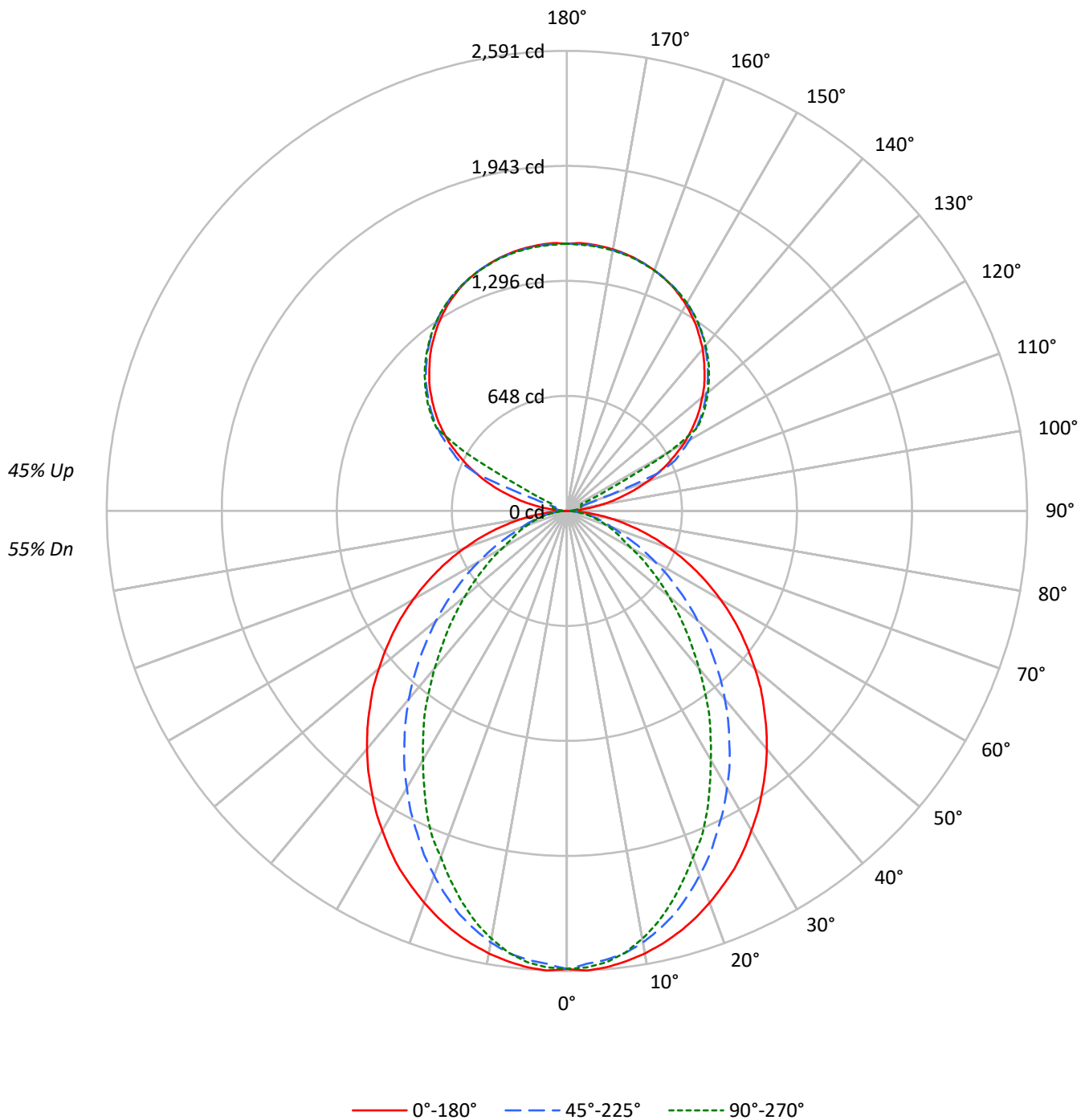
Lumens per Lamp: N/A
Luminaire Lumens: 9719.6 lumens
Efficiency: N/A
Efficacy: 94.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 102.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60
1	99	95	91	88	92	89	85	82	76	74	72	65	63	62	54	53	52
2	91	84	78	73	84	78	73	69	67	63	60	57	55	52	48	46	45
3	83	74	67	61	77	69	63	58	60	55	51	51	48	45	43	41	39
4	76	66	58	52	71	62	55	50	54	48	44	46	42	39	39	36	34
5	70	59	51	45	65	55	48	43	48	43	38	42	37	34	35	32	30
6	65	53	45	40	60	50	43	38	44	38	34	38	33	30	32	29	26
7	60	48	40	35	56	45	38	33	40	34	30	35	30	27	30	26	24
8	56	44	36	31	52	41	34	30	36	31	27	32	27	24	27	24	21
9	52	40	33	28	49	38	31	27	34	28	24	29	25	22	25	22	19
10	49	37	30	25	46	35	28	24	31	26	22	27	23	20	24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2956	2956	2956
5°	2959	2907	2927
10°	2928	2848	2831
15°	2885	2752	2682
20°	2830	2620	2501
25°	2774	2473	2326
30°	2698	2323	2104
35°	2624	2161	1909
40°	2549	1994	1686
45°	2462	1808	1484
50°	2372	1621	1286
55°	2277	1422	1096
60°	2168	1214	901
65°	2041	1002	810
70°	1888	805	732
75°	1695	705	664
80°	1417	586	572
85°	960	381	424

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2462 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.8	2.5
10°-20°	663.7	6.8
20°-30°	931.9	9.6
30°-40°	1015.8	10.5
40°-50°	933.6	9.6
50°-60°	733.2	7.5
60°-70°	477.3	4.9
70°-80°	245.7	2.5
80°-90°	65.3	0.7
90°-100°	49.6	0.5
100°-110°	185.0	1.9
110°-120°	490.6	5.0
120°-130°	813.6	8.4
130°-140°	864.3	8.9
140°-150°	803.2	8.3
150°-160°	645.8	6.6
160°-170°	416.1	4.3
170°-180°	143.2	1.5
0°-30°	1837.4	18.9
0°-40°	2853.2	29.4
0°-60°	4520.0	46.5
0°-90°	5308.3	54.6
90°-120°	725.2	7.5
90°-150°	3206.2	33.0
90°-180°	4411.0	45.4
0°-180°	9719.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2580	2580	2580	2580	2580	
5°	2580	2568	2538	2559	2552	245
15°	2454	2428	2349	2304	2281	691
25°	2227	2152	1998	1903	1868	1024
35°	1919	1800	1595	1448	1396	1201
45°	1569	1412	1167	1002	946	1212
55°	1193	1011	759	619	574	1066
65°	806	616	406	327	320	799
75°	430	266	187	170	168	454
85°	100	51	44	44	44	115
90°	1	13	22	27	29	9
95°	71	35	42	48	47	84
105°	331	364	66	78	83	354
115°	626	644	672	168	89	616
125°	885	899	920	928	931	789
135°	1095	1113	1122	1134	1131	846
145°	1271	1270	1288	1296	1290	795
155°	1399	1389	1402	1409	1400	645
165°	1474	1468	1471	1478	1471	416
175°	1508	1500	1502	1510	1499	144
180°	1505	1505	1505	1505	1505	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2579.8	2579.8	2579.8	2579.8	2579.8
2.5°	2591.4	2579.8	2554.0	2577.6	2572.9
5°	2579.8	2568.1	2537.7	2558.8	2551.8
7.5°	2558.8	2544.9	2512.2	2521.3	2509.7
10°	2530.8	2514.4	2467.8	2460.7	2446.8
12.5°	2495.8	2474.8	2411.6	2397.7	2371.9
15°	2453.7	2427.9	2348.7	2304.4	2281.1
17.5°	2404.7	2367.3	2269.2	2217.9	2180.5
20°	2348.7	2301.9	2185.2	2127.0	2075.5
22.5°	2288.0	2234.3	2098.7	2019.5	1984.6
25°	2227.3	2152.5	1998.4	1902.8	1867.7
27.5°	2155.0	2075.5	1905.1	1795.4	1741.6
30°	2078.0	1989.0	1802.2	1683.4	1620.2
32.5°	2003.1	1895.7	1704.4	1564.2	1505.7
35°	1919.1	1800.0	1594.7	1447.6	1396.1
37.5°	1837.5	1708.9	1491.9	1330.6	1272.5
40°	1751.0	1611.1	1384.4	1218.7	1158.0
42.5°	1662.3	1513.0	1277.1	1104.2	1046.1
45°	1569.0	1412.4	1167.4	1001.5	945.5
47.5°	1480.2	1314.6	1062.4	896.4	845.2
50°	1382.2	1216.5	959.6	798.3	749.6
52.5°	1286.3	1111.2	861.5	707.4	663.1
55°	1192.9	1010.8	758.7	618.8	574.4
57.5°	1097.3	910.5	667.8	537.0	499.6
60°	999.3	812.4	571.9	453.1	415.6
62.5°	903.6	716.8	490.2	378.3	359.6
65°	805.5	616.3	406.3	327.0	319.8
67.5°	712.1	522.9	327.0	287.0	280.2
70°	614.0	431.9	270.7	247.4	238.0
72.5°	520.7	347.8	226.4	207.9	203.1
75°	429.5	266.0	186.7	170.4	168.2
77.5°	338.6	189.0	147.1	137.7	133.0
80°	254.4	135.5	112.0	102.8	102.8
82.5°	177.4	91.1	77.0	72.3	72.3
85°	100.3	51.3	44.3	44.3	44.3
87.5°	37.4	18.5	18.5	16.3	16.3
90°	1.1	13.0	21.8	27.3	29.3
92.5°	27.3	22.9	26.1	28.4	29.3
95°	70.7	34.8	42.4	48.0	46.8
97.5°	127.3	38.2	55.5	58.9	59.8
100°	192.8	43.6	62.1	70.7	72.9
102.5°	264.6	262.4	64.3	76.2	79.5
105°	331.0	363.7	66.4	78.4	82.8
107.5°	408.3	435.4	68.7	80.5	85.0
110°	482.4	505.2	190.6	81.7	86.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	552.1	571.6	553.1	83.8	87.1
115°	626.1	644.5	671.8	167.7	89.3
117.5°	690.3	712.0	730.7	574.8	289.6
120°	762.1	778.5	798.1	811.2	664.1
122.5°	823.0	840.5	862.4	868.9	870.0
125°	885.1	899.4	920.1	927.6	930.9
127.5°	941.7	957.0	973.5	984.3	985.3
130°	995.1	1012.6	1024.5	1036.5	1035.5
132.5°	1049.6	1063.8	1075.7	1085.6	1084.5
135°	1095.4	1112.9	1122.5	1133.5	1131.3
137.5°	1143.2	1156.3	1167.2	1178.1	1174.9
140°	1190.0	1198.8	1210.7	1220.5	1215.1
142.5°	1229.3	1237.0	1251.1	1259.7	1254.3
145°	1270.7	1269.5	1288.0	1295.7	1290.2
147.5°	1306.5	1303.2	1321.8	1327.2	1322.9
150°	1341.4	1333.8	1351.2	1357.7	1352.3
152.5°	1370.7	1362.1	1378.4	1385.0	1377.3
155°	1399.1	1389.4	1402.4	1408.9	1400.3
157.5°	1421.9	1413.3	1423.1	1430.7	1421.9
160°	1441.6	1435.0	1441.6	1448.0	1440.5
162.5°	1458.9	1452.5	1457.9	1465.5	1455.7
165°	1474.2	1467.8	1471.0	1478.5	1471.0
167.5°	1486.2	1479.6	1483.0	1490.6	1480.8
170°	1496.0	1489.4	1491.7	1499.2	1489.4
172.5°	1502.5	1496.0	1498.3	1505.8	1496.0
175°	1508.0	1500.3	1502.5	1510.1	1499.2
177.5°	1510.1	1502.5	1503.7	1511.3	1501.5
180°	1504.7	1504.7	1504.7	1504.7	1504.7

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		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				
X=2H	Y=2H	11.30	12.17	12.22	13.11	14.31	7.26	8.13	8.18	9.07	10.27
	3H	12.98	13.75	13.91	14.70	15.93	8.45	9.22	9.38	10.17	11.40
	4H	13.58	14.32	14.53	15.27	16.51	8.89	9.63	9.84	10.58	11.82
	6H	14.00	14.68	14.96	15.63	16.89	9.21	9.89	10.17	10.84	12.09
	8H	14.13	14.77	15.10	15.74	16.99	9.30	9.94	10.27	10.91	12.16
	12H	14.19	14.80	15.16	15.77	17.04	9.34	9.95	10.31	10.92	12.19
4H	2H	11.32	12.05	12.28	13.01	14.25	7.86	8.59	8.81	9.54	10.78
	3H	13.15	13.76	14.11	14.74	15.99	9.20	9.81	10.17	10.80	12.05
	4H	13.84	14.39	14.81	15.37	16.65	9.75	10.31	10.72	11.28	12.56
	6H	14.35	14.83	15.34	15.83	17.10	10.16	10.64	11.15	11.64	12.92
	8H	14.52	14.97	15.51	15.96	17.25	10.29	10.74	11.28	11.73	13.02
	12H	14.62	15.02	15.62	16.03	17.32	10.35	10.75	11.36	11.76	13.06
8H	4H	13.81	14.25	14.80	15.25	16.54	10.03	10.48	11.02	11.47	12.76
	6H	14.37	14.74	15.38	15.77	17.06	10.54	10.91	11.55	11.94	13.23
	8H	14.58	14.91	15.60	15.93	17.24	10.73	11.05	11.75	12.07	13.38
	12H	14.72	15.01	15.74	16.02	17.37	10.84	11.13	11.87	12.14	13.50
12H	4H	13.76	14.16	14.77	15.17	16.47	10.03	10.44	11.04	11.45	12.74
	6H	14.34	14.67	15.37	15.69	17.00	10.59	10.91	11.61	11.93	13.24
	8H	14.56	14.85	15.59	15.86	17.22	10.79	11.08	11.82	12.10	13.45