

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: P908495

Luminaire Tested: DFN2DIP-PN3F0-060D040US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908495
REPORT IS A COMBINATION OF REPORTS P901052 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-060D040US840-RLLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

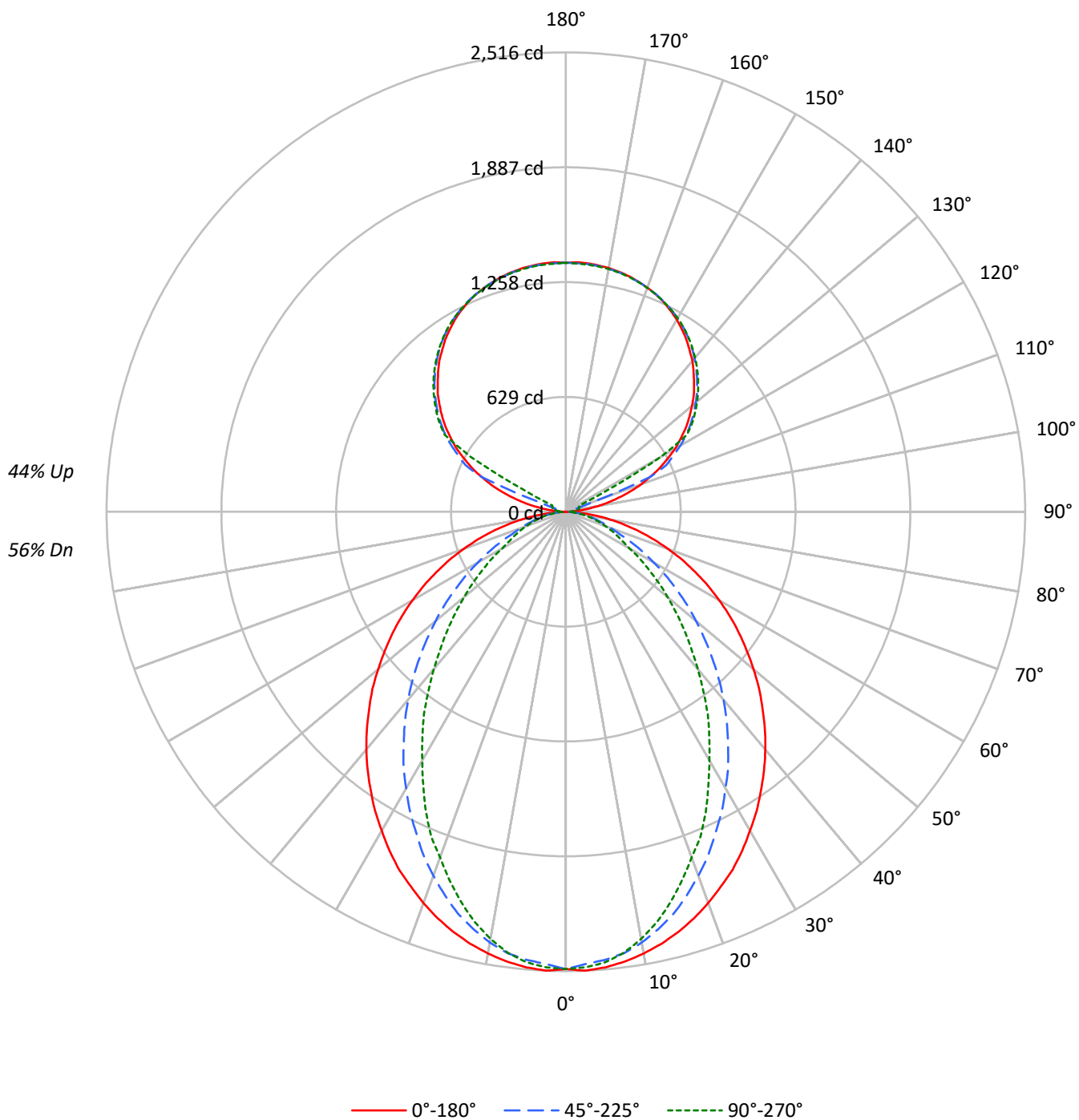
Lumens per Lamp: N/A
Luminaire Lumens: 9149.4 lumens
Efficiency: N/A
Efficacy: 105.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 87
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62
1	100	96	92	88	93	89	86	83	77	75	72	66	64	63	56	54	53
2	91	84	78	73	85	79	73	69	68	64	61	58	56	53	50	48	46
3	84	74	67	62	78	70	63	58	61	56	52	52	49	46	44	42	40
4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35
5	71	59	51	46	66	56	49	43	49	43	39	42	38	35	36	33	31
6	65	54	46	40	61	50	43	38	44	39	34	39	34	31	33	30	27
7	61	49	41	35	56	46	39	34	40	35	30	35	31	27	30	27	24
8	56	44	37	31	52	42	35	30	37	31	27	32	28	25	28	25	22
9	53	41	33	28	49	38	32	27	34	28	25	30	25	22	26	23	20
10	49	37	30	25	46	35	29	24	31	26	22	28	23	20	24	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2927	2927	2927
5°	2930	2879	2898
10°	2900	2820	2803
15°	2858	2725	2656
20°	2803	2595	2476
25°	2748	2449	2302
30°	2673	2300	2082
35°	2600	2139	1889
40°	2526	1973	1668
45°	2439	1790	1468
50°	2350	1605	1272
55°	2257	1407	1084
60°	2148	1201	891
65°	2023	992	801
70°	1872	796	723
75°	1682	698	655
80°	1406	579	564
85°	955	376	416

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2439 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.7	2.6
10°-20°	644.3	7.0
20°-30°	904.6	9.9
30°-40°	986.1	10.8
40°-50°	906.3	9.9
50°-60°	711.7	7.8
60°-70°	463.3	5.1
70°-80°	238.5	2.6
80°-90°	63.3	0.7
90°-100°	44.9	0.5
100°-110°	167.6	1.8
110°-120°	444.4	4.9
120°-130°	737.1	8.1
130°-140°	783.0	8.6
140°-150°	727.7	8.0
150°-160°	585.1	6.4
160°-170°	377.0	4.1
170°-180°	129.8	1.4
0°-30°	1783.6	19.5
0°-40°	2769.6	30.3
0°-60°	4387.7	48.0
0°-90°	5152.7	56.3
90°-120°	656.9	7.2
90°-150°	2904.8	31.7
90°-180°	3997.0	43.7
0°-180°	9149.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2504	2504	2504	2504	2504	
5°	2504	2493	2463	2484	2477	237
15°	2382	2357	2280	2237	2214	671
25°	2162	2090	1940	1847	1813	994
35°	1863	1747	1548	1405	1355	1166
45°	1523	1371	1133	972	918	1176
55°	1158	981	736	601	558	1035
65°	782	598	394	317	310	775
75°	417	258	181	165	163	441
85°	97	50	43	43	43	112
90°	1	12	20	25	27	9
95°	64	32	38	43	42	76
105°	300	330	60	71	75	320
115°	567	584	609	152	81	558
125°	802	815	834	840	843	715
135°	992	1008	1017	1027	1025	767
145°	1151	1150	1167	1174	1169	720
155°	1268	1259	1271	1276	1269	584
165°	1336	1330	1333	1340	1333	377
175°	1366	1359	1361	1368	1358	130
180°	1363	1363	1363	1363	1363	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2504.3	2504.3	2504.3	2504.3	2504.3
2.5°	2515.6	2504.3	2479.2	2502.0	2497.5
5°	2504.3	2493.0	2463.4	2483.9	2477.1
7.5°	2483.9	2470.3	2438.6	2447.5	2436.2
10°	2456.6	2440.7	2395.6	2388.6	2375.1
12.5°	2422.8	2402.3	2341.0	2327.5	2302.5
15°	2381.9	2356.8	2279.9	2236.9	2214.2
17.5°	2334.3	2297.9	2202.7	2152.9	2116.7
20°	2279.9	2234.4	2121.2	2064.7	2014.7
22.5°	2221.0	2168.8	2037.3	1960.4	1926.4
25°	2162.1	2089.5	1940.0	1847.1	1813.0
27.5°	2091.9	2014.7	1849.3	1742.7	1690.6
30°	2017.1	1930.8	1749.5	1634.1	1572.8
32.5°	1944.5	1840.2	1654.6	1518.4	1461.7
35°	1863.0	1747.4	1548.0	1405.1	1355.1
37.5°	1783.6	1658.8	1448.2	1291.7	1235.2
40°	1699.7	1563.9	1343.8	1183.0	1124.1
42.5°	1613.7	1468.6	1239.7	1071.9	1015.4
45°	1523.0	1371.0	1133.3	972.1	917.8
47.5°	1436.9	1276.1	1031.3	870.2	820.4
50°	1341.7	1180.8	931.5	775.0	727.6
52.5°	1248.6	1078.6	836.3	686.7	643.7
55°	1158.0	981.3	736.5	600.7	557.5
57.5°	1065.2	883.8	648.2	521.3	484.9
60°	970.0	788.7	555.2	439.8	403.4
62.5°	877.2	695.9	475.8	367.2	349.1
65°	781.9	598.2	394.4	317.4	310.4
67.5°	691.3	507.6	317.4	278.7	272.0
70°	596.0	419.3	262.8	240.2	231.1
72.5°	505.4	337.6	219.7	201.8	197.1
75°	417.0	258.2	181.3	165.4	163.3
77.5°	328.7	183.5	142.8	133.7	129.2
80°	246.9	131.5	108.7	99.8	99.8
82.5°	172.2	88.5	74.7	70.2	70.2
85°	97.4	49.8	43.0	43.0	43.0
87.5°	36.4	18.1	18.1	15.9	15.9
90°	0.9	11.8	19.7	24.7	26.6
92.5°	24.7	20.7	23.6	25.7	26.6
95°	64.0	31.5	38.4	43.4	42.4
97.5°	115.4	34.5	50.3	53.3	54.2
100°	174.6	39.5	56.2	64.0	66.0
102.5°	239.6	237.8	58.2	69.0	72.0
105°	299.8	329.5	60.2	71.0	74.9
107.5°	369.9	394.6	62.2	73.0	77.0
110°	437.1	457.7	172.7	74.0	77.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	500.2	517.9	501.1	75.9	79.0
115°	567.1	583.9	608.6	151.9	81.0
117.5°	625.4	645.1	662.0	520.8	262.4
120°	690.5	705.3	723.1	735.0	601.8
122.5°	745.7	761.5	781.3	787.2	788.2
125°	801.9	814.9	833.5	840.5	843.4
127.5°	853.2	867.1	881.9	891.8	892.7
130°	901.6	917.5	928.2	939.1	938.2
132.5°	950.9	963.8	974.6	983.5	982.6
135°	992.4	1008.2	1017.0	1026.9	1025.0
137.5°	1035.7	1047.5	1057.5	1067.3	1064.4
140°	1078.1	1086.1	1096.9	1105.8	1100.9
142.5°	1113.8	1120.6	1133.5	1141.2	1136.4
145°	1151.2	1150.2	1166.9	1173.9	1168.9
147.5°	1183.7	1180.7	1197.5	1202.4	1198.6
150°	1215.3	1208.4	1224.3	1230.1	1225.2
152.5°	1241.9	1234.1	1248.8	1254.8	1247.9
155°	1267.6	1258.8	1270.6	1276.5	1268.6
157.5°	1288.3	1280.4	1289.4	1296.3	1288.3
160°	1306.1	1300.1	1306.1	1311.9	1305.0
162.5°	1321.8	1316.0	1320.9	1327.8	1318.9
165°	1335.6	1329.8	1332.7	1339.6	1332.7
167.5°	1346.6	1340.5	1343.6	1350.5	1341.6
170°	1355.4	1349.5	1351.4	1358.4	1349.5
172.5°	1361.3	1355.4	1357.5	1364.3	1355.4
175°	1366.1	1359.3	1361.3	1368.2	1358.4
177.5°	1368.2	1361.3	1362.3	1369.3	1360.4
180°	1363.3	1363.3	1363.3	1363.3	1363.3

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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	11.41	12.29	12.32	13.22	14.40	7.38	8.26	8.28	9.18	10.36
	3H	13.09	13.88	14.01	14.81	16.01	8.56	9.35	9.48	10.29	11.49
	4H	13.69	14.44	14.63	15.38	16.59	9.01	9.76	9.95	10.70	11.91
	6H	14.11	14.80	15.06	15.74	16.97	9.33	10.02	10.28	10.96	12.19
	8H	14.24	14.89	15.19	15.85	17.08	9.42	10.07	10.37	11.03	12.26
	12H	14.30	14.92	15.26	15.87	17.12	9.46	10.09	10.42	11.04	12.29
4H	2H	11.43	12.18	12.37	13.12	14.33	7.98	8.72	8.92	9.66	10.87
	3H	13.26	13.88	14.21	14.85	16.08	9.32	9.94	10.27	10.91	12.14
	4H	13.95	14.52	14.91	15.48	16.73	9.87	10.43	10.83	11.40	12.65
	6H	14.46	14.95	15.44	15.93	17.19	10.29	10.77	11.26	11.76	13.01
	8H	14.64	15.09	15.61	16.07	17.34	10.41	10.87	11.39	11.84	13.11
	12H	14.73	15.14	15.72	16.13	17.41	10.48	10.88	11.47	11.88	13.15
8H	4H	13.92	14.38	14.90	15.35	16.62	10.15	10.60	11.12	11.58	12.85
	6H	14.48	14.86	15.48	15.88	17.14	10.66	11.04	11.66	12.06	13.32
	8H	14.69	15.03	15.70	16.03	17.32	10.85	11.18	11.86	12.19	13.47
	12H	14.83	15.12	15.84	16.12	17.46	10.96	11.26	11.98	12.26	13.59
12H	4H	13.88	14.28	14.87	15.28	16.55	10.16	10.57	11.15	11.56	12.83
	6H	14.46	14.79	15.47	15.80	17.08	10.71	11.04	11.72	12.05	13.33
	8H	14.68	14.97	15.69	15.97	17.30	10.92	11.21	11.93	12.21	13.54

END OF REPORT