

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: P922267

Luminaire Tested: DFN2DIP-PN4F0-040D100US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922267
REPORT IS A COMBINATION OF REPORTS P901238 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D100US940-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

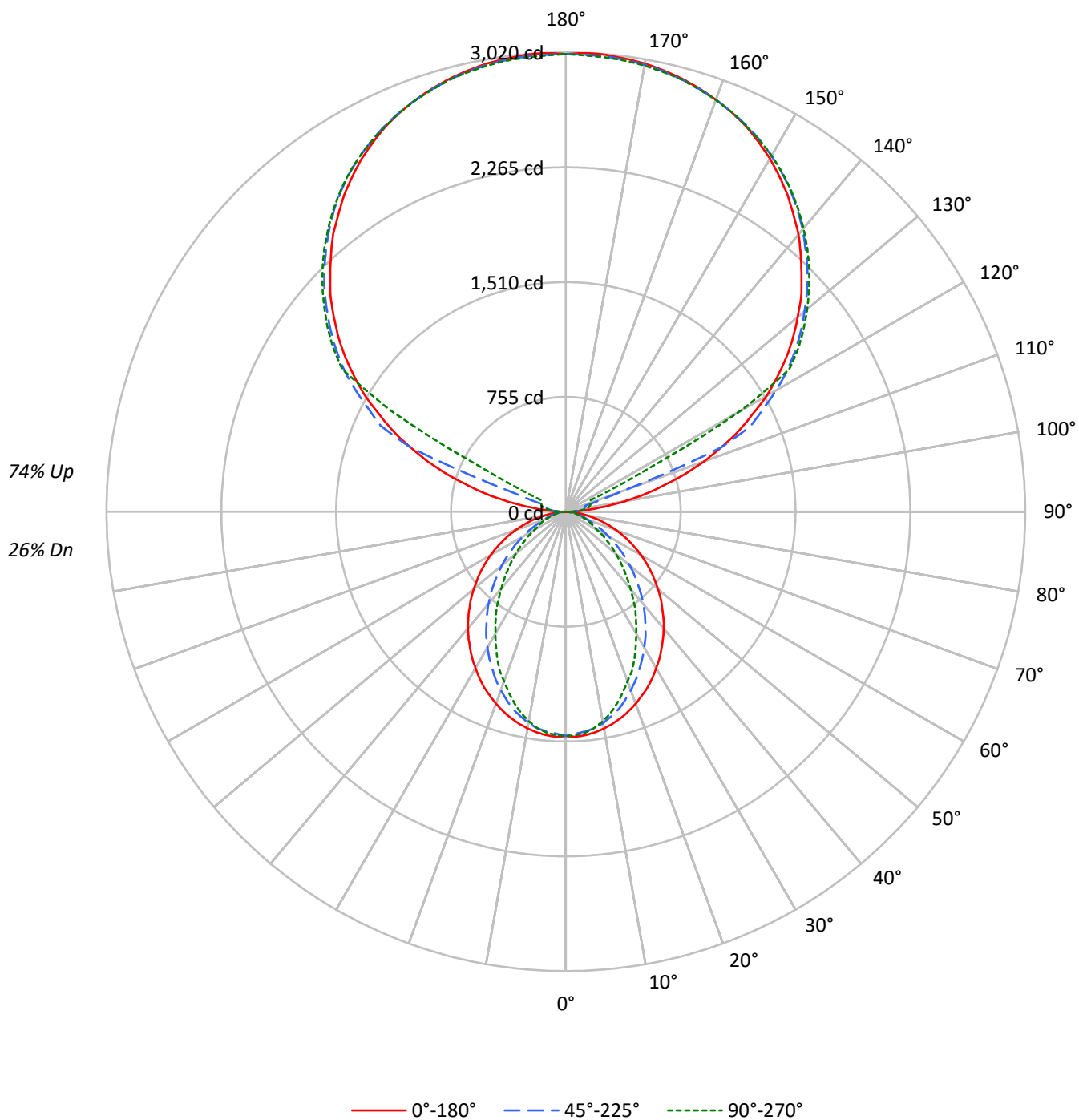
Lumens per Lamp: N/A
Luminaire Lumens: 11859.8 lumens
Efficiency: N/A
Efficacy: 109.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 108.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34
1	93	88	85	82	82	79	76	73	61	59	58	45	44	43	30	29	29
2	84	77	72	67	75	69	65	60	54	51	48	40	38	36	27	26	25
3	77	68	61	56	69	61	55	51	48	44	41	35	33	31	24	23	21
4	71	60	53	47	63	54	48	43	43	38	35	32	29	26	22	20	19
5	65	54	46	41	58	48	42	37	38	33	30	28	25	23	19	18	16
6	60	48	41	35	53	43	37	32	34	30	26	26	23	20	18	16	14
7	55	43	36	31	49	39	33	28	31	26	23	23	20	18	16	14	13
8	51	39	32	27	45	36	29	25	28	24	20	21	18	16	15	13	12
9	47	36	29	24	42	32	26	22	26	21	18	20	16	14	14	12	10
10	44	33	26	21	39	30	24	20	24	19	16	18	15	13	13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1076	1076	1076
5°	1078	1059	1066
10°	1067	1039	1032
15°	1052	1004	978
20°	1033	957	912
25°	1013	904	849
30°	986	850	769
35°	960	792	698
40°	934	731	617
45°	903	664	543
50°	871	596	471
55°	837	524	402
60°	798	448	332
65°	754	372	298
70°	700	300	270
75°	632	265	246
80°	534	222	215
85°	372	149	162

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1605 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.2	1.2
10°-20°	379.3	3.2
20°-30°	532.5	4.5
30°-40°	580.5	4.9
40°-50°	533.5	4.5
50°-60°	419.0	3.5
60°-70°	272.7	2.3
70°-80°	140.4	1.2
80°-90°	41.1	0.3
90°-100°	99.2	0.8
100°-110°	369.9	3.1
110°-120°	981.1	8.3
120°-130°	1627.2	13.7
130°-140°	1728.5	14.6
140°-150°	1606.5	13.5
150°-160°	1291.5	10.9
160°-170°	832.2	7.0
170°-180°	286.4	2.4
0°-30°	1049.9	8.9
0°-40°	1630.4	13.7
0°-60°	2582.9	21.8
0°-90°	3037.1	25.6
90°-120°	1450.3	12.2
90°-150°	6412.5	54.1
90°-180°	8823.0	74.4
0°-180°	11859.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1474	1474	1474	1474	1474	
5°	1474	1468	1450	1462	1458	140
15°	1402	1387	1342	1317	1304	395
25°	1273	1230	1142	1087	1067	585
35°	1097	1029	911	827	798	686
45°	896	807	667	572	540	692
55°	682	578	434	354	328	609
65°	460	352	232	187	183	456
75°	245	152	107	97	96	260
85°	57	29	25	25	25	66
90°	2	26	43	55	59	11
95°	141	70	85	96	94	168
105°	662	727	133	157	166	707
115°	1252	1289	1344	335	179	1233
125°	1770	1799	1840	1855	1862	1579
135°	2191	2226	2245	2267	2263	1692
145°	2541	2539	2576	2591	2580	1589
155°	2798	2779	2805	2818	2800	1289
165°	2948	2935	2942	2957	2942	833
175°	3016	3001	3005	3020	2999	287
180°	3009	3009	3009	3009	3009	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1474.2	1474.2	1474.2	1474.2	1474.2
2.5°	1480.9	1474.2	1459.5	1472.9	1470.2
5°	1474.2	1467.5	1450.1	1462.1	1458.2
7.5°	1462.1	1454.2	1435.6	1440.7	1434.1
10°	1446.2	1436.8	1410.2	1406.0	1398.2
12.5°	1426.2	1414.2	1378.0	1370.1	1355.4
15°	1402.1	1387.4	1342.1	1316.8	1303.5
17.5°	1374.1	1352.7	1296.6	1267.4	1246.0
20°	1342.1	1315.4	1248.7	1215.4	1186.0
22.5°	1307.4	1276.8	1199.3	1154.0	1134.1
25°	1272.7	1230.0	1141.9	1087.4	1067.2
27.5°	1231.5	1186.0	1088.6	1025.9	995.1
30°	1187.4	1136.6	1029.8	961.9	925.9
32.5°	1144.7	1083.2	973.9	893.9	860.4
35°	1096.7	1028.6	911.2	827.2	797.7
37.5°	1050.0	976.5	852.5	760.4	727.1
40°	1000.6	920.6	791.1	696.4	661.7
42.5°	949.8	864.5	729.8	631.0	597.7
45°	896.5	807.1	667.1	572.3	540.3
47.5°	845.9	751.2	607.1	512.3	483.0
50°	789.8	695.1	548.3	456.2	428.3
52.5°	735.0	635.0	492.3	404.2	378.9
55°	681.7	577.6	433.5	353.6	328.2
57.5°	627.1	520.3	381.6	306.8	285.5
60°	571.0	464.2	326.8	258.9	237.6
62.5°	516.4	409.7	280.1	216.2	205.5
65°	460.3	352.1	232.1	186.8	182.7
67.5°	407.0	298.8	186.8	164.1	160.1
70°	350.9	246.8	154.7	141.4	136.0
72.5°	297.6	198.8	129.4	118.8	116.1
75°	245.4	152.0	106.7	97.4	96.1
77.5°	193.5	108.0	84.1	78.7	76.0
80°	145.3	77.4	63.9	58.8	58.8
82.5°	101.4	52.1	44.1	41.3	41.3
85°	57.3	29.3	25.3	25.3	25.3
87.5°	21.4	10.6	10.6	9.4	9.4
90°	2.1	26.1	43.4	54.6	58.7
92.5°	54.6	45.7	52.3	56.6	58.7
95°	141.4	69.6	84.8	95.9	93.6
97.5°	254.7	76.2	110.9	117.6	119.8
100°	385.6	87.1	124.1	141.4	145.9
102.5°	529.1	524.9	128.5	152.3	159.0
105°	662.0	727.4	133.0	156.7	165.5
107.5°	816.6	870.9	137.3	161.1	169.9
110°	964.7	1010.3	381.1	163.5	171.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1104.1	1143.2	1106.3	167.6	174.3
115°	1252.1	1289.1	1343.6	335.4	178.7
117.5°	1380.5	1424.1	1461.2	1149.7	579.3
120°	1524.4	1556.9	1596.3	1622.4	1328.4
122.5°	1646.2	1681.1	1724.7	1737.7	1740.0
125°	1770.3	1798.8	1840.1	1855.4	1861.8
127.5°	1883.6	1914.1	1946.9	1968.6	1970.7
130°	1990.3	2025.3	2049.1	2073.0	2071.0
132.5°	2099.2	2127.6	2151.4	2171.0	2169.0
135°	2190.8	2225.6	2245.1	2267.0	2262.6
137.5°	2286.4	2312.6	2334.5	2356.3	2349.7
140°	2380.0	2397.6	2421.4	2441.1	2430.2
142.5°	2458.6	2473.9	2502.1	2519.3	2508.6
145°	2541.4	2539.1	2576.1	2591.3	2580.4
147.5°	2613.0	2606.6	2643.5	2654.4	2645.9
150°	2682.8	2667.6	2702.5	2715.4	2704.6
152.5°	2741.5	2724.2	2756.8	2769.9	2754.7
155°	2798.2	2778.7	2804.9	2817.8	2800.5
157.5°	2843.9	2826.6	2846.3	2861.5	2843.9
160°	2883.3	2870.1	2883.3	2896.2	2880.9
162.5°	2917.9	2904.9	2915.8	2931.1	2911.4
165°	2948.4	2935.4	2941.9	2957.2	2941.9
167.5°	2972.4	2959.2	2966.0	2981.3	2961.5
170°	2992.0	2978.9	2983.3	2998.6	2978.9
172.5°	3005.0	2992.0	2996.5	3011.8	2992.0
175°	3015.9	3000.6	3005.0	3020.3	2998.6
177.5°	3020.3	3005.0	3007.4	3022.6	3002.9
180°	3009.4	3009.4	3009.4	3009.4	3009.4

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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	4.53	5.20	5.68	6.33	7.91	0.50	1.16	1.64	2.29	3.88
	3H	6.20	6.79	7.35	7.94	9.53	1.67	2.27	2.83	3.41	5.01
	4H	6.80	7.37	7.97	8.51	10.11	2.12	2.68	3.28	3.82	5.43
	6H	7.22	7.74	8.39	8.88	10.50	2.43	2.95	3.60	4.09	5.71
	8H	7.34	7.84	8.51	8.99	10.60	2.52	3.01	3.69	4.17	5.77
	12H	7.40	7.87	8.58	9.02	10.65	2.56	3.02	3.73	4.17	5.80
4H	2H	4.53	5.09	5.70	6.24	7.84	1.07	1.64	2.24	2.78	4.38
	3H	6.35	6.82	7.52	7.98	9.60	2.41	2.88	3.58	4.05	5.66
	4H	7.04	7.47	8.21	8.62	10.26	2.95	3.38	4.13	4.54	6.17
	6H	7.54	7.91	8.73	9.09	10.72	3.36	3.73	4.55	4.91	6.53
	8H	7.72	8.06	8.90	9.23	10.87	3.49	3.84	4.67	5.00	6.64
	12H	7.81	8.12	9.00	9.30	10.94	3.55	3.86	4.74	5.04	6.69
8H	4H	6.99	7.34	8.17	8.50	10.15	3.22	3.57	4.40	4.74	6.38
	6H	7.55	7.84	8.75	9.05	10.69	3.74	4.02	4.94	5.23	6.87
	8H	7.77	8.02	8.98	9.21	10.87	3.93	4.17	5.13	5.36	7.02
	12H	7.91	8.12	9.11	9.31	11.00	4.04	4.26	5.25	5.44	7.13
12H	4H	6.94	7.25	8.13	8.43	10.07	3.22	3.53	4.42	4.71	6.36
	6H	7.53	7.78	8.73	8.97	10.62	3.79	4.03	4.99	5.22	6.88
	8H	7.75	7.96	8.95	9.15	10.84	3.99	4.21	5.20	5.39	7.08

END OF REPORT