

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: P922155

Luminaire Tested: DFN2DIP-PN3F0-060D090US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922155
REPORT IS A COMBINATION OF REPORTS P901122 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-060D090US940-RLLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

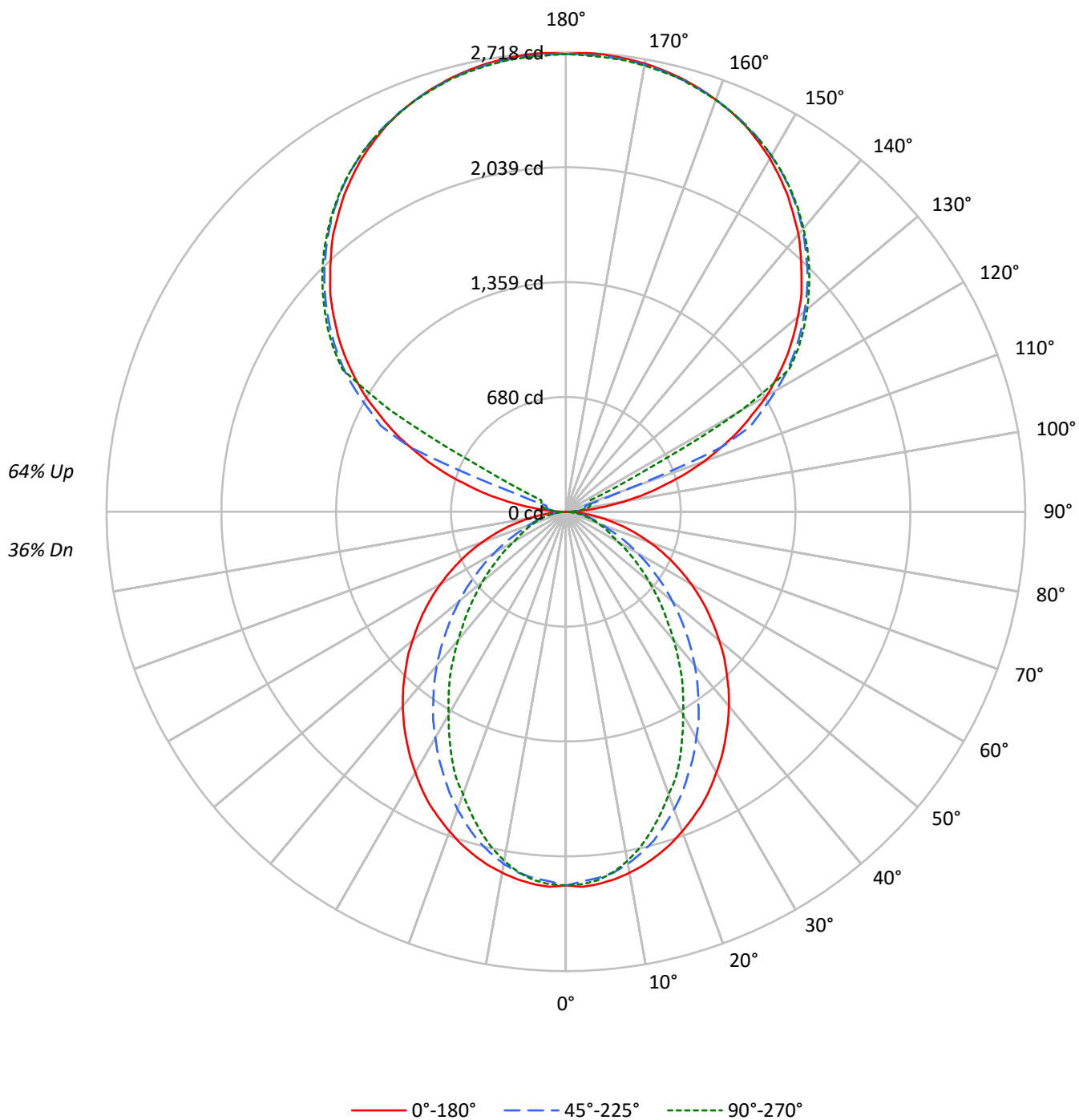
Lumens per Lamp: N/A
Luminaire Lumens: 12492.9 lumens
Efficiency: N/A
Efficacy: 97.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 128.2
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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44
1	95	91	87	84	86	83	80	77	67	65	63	52	51	50	39	38	38
2	87	80	74	69	78	73	68	63	59	56	53	46	44	42	35	33	32
3	79	70	63	58	72	64	58	53	52	48	45	41	38	36	31	29	28
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	28	26	24
5	67	56	48	42	60	51	44	39	42	37	33	33	30	27	25	23	21
6	62	50	42	37	56	46	39	34	38	33	29	30	27	24	23	21	19
7	57	45	38	32	52	41	35	30	34	29	26	28	24	21	21	19	17
8	53	41	34	29	48	38	31	27	31	26	23	25	22	19	20	17	15
9	49	37	30	25	45	34	28	24	29	24	20	23	20	17	18	16	14
10	46	34	27	23	42	32	25	21	26	22	18	22	18	15	17	14	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2585	2585	2585
5°	2588	2542	2559
10°	2560	2490	2475
15°	2524	2406	2345
20°	2475	2291	2186
25°	2426	2162	2033
30°	2360	2031	1839
35°	2296	1889	1668
40°	2230	1743	1473
45°	2154	1581	1296
50°	2075	1417	1123
55°	1992	1243	957
60°	1897	1061	787
65°	1787	876	707
70°	1653	703	638
75°	1485	616	578
80°	1241	511	498
85°	844	332	368

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2154 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.2	1.7
10°-20°	568.9	4.6
20°-30°	798.7	6.4
30°-40°	870.7	7.0
40°-50°	800.3	6.4
50°-60°	628.5	5.0
60°-70°	409.1	3.3
70°-80°	210.6	1.7
80°-90°	58.5	0.5
90°-100°	89.3	0.7
100°-110°	332.9	2.7
110°-120°	883.0	7.1
120°-130°	1464.5	11.7
130°-140°	1555.6	12.5
140°-150°	1445.8	11.6
150°-160°	1162.4	9.3
160°-170°	749.0	6.0
170°-180°	257.8	2.1
0°-30°	1574.9	12.6
0°-40°	2445.6	19.6
0°-60°	3874.3	31.0
0°-90°	4552.5	36.4
90°-120°	1305.2	10.4
90°-150°	5771.2	46.2
90°-180°	7940.0	63.6
0°-180°	12492.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2211	2211	2211	2211	2211	
5°	2211	2201	2175	2193	2187	210
15°	2103	2081	2013	1975	1955	593
25°	1909	1845	1713	1631	1601	878
35°	1645	1543	1367	1241	1197	1030
45°	1345	1211	1001	858	810	1039
55°	1022	866	650	530	492	914
65°	690	528	348	280	274	685
75°	368	228	160	146	144	389
85°	86	44	38	38	38	99
90°	2	24	39	49	53	12
95°	127	63	76	86	84	151
105°	596	655	120	141	149	637
115°	1127	1160	1209	302	161	1109
125°	1593	1619	1656	1670	1676	1421
135°	1972	2003	2020	2040	2036	1523
145°	2287	2285	2318	2332	2322	1431
155°	2518	2501	2524	2536	2520	1161
165°	2654	2642	2648	2662	2648	750
175°	2714	2700	2705	2718	2699	258
180°	2708	2708	2708	2708	2708	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2211.3	2211.3	2211.3	2211.3	2211.3
2.5°	2221.3	2211.3	2189.1	2209.3	2205.3
5°	2211.3	2201.3	2175.1	2193.3	2187.3
7.5°	2193.3	2181.3	2153.3	2161.1	2151.2
10°	2169.2	2155.2	2115.3	2109.2	2097.2
12.5°	2139.3	2121.2	2067.1	2055.2	2033.1
15°	2103.2	2081.1	2013.1	1975.1	1955.2
17.5°	2061.2	2029.1	1945.0	1901.0	1869.0
20°	2013.1	1973.0	1873.0	1823.1	1779.0
22.5°	1961.1	1915.0	1798.9	1731.0	1701.0
25°	1909.2	1845.0	1713.0	1631.0	1600.9
27.5°	1847.2	1779.0	1632.9	1538.8	1492.8
30°	1781.1	1704.9	1544.8	1442.9	1388.7
32.5°	1717.0	1624.9	1461.0	1340.8	1290.7
35°	1645.0	1542.9	1366.9	1240.7	1196.6
37.5°	1574.9	1464.7	1278.8	1140.6	1090.7
40°	1500.8	1380.9	1186.6	1044.5	992.6
42.5°	1424.9	1296.8	1094.7	946.5	896.6
45°	1344.8	1210.6	1000.7	858.4	810.4
47.5°	1268.8	1126.8	910.6	768.4	724.4
50°	1184.7	1042.7	822.5	684.3	642.5
52.5°	1102.5	952.4	738.4	606.4	568.4
55°	1022.5	866.5	650.3	530.4	492.3
57.5°	940.6	780.4	572.4	460.3	428.2
60°	856.5	696.4	490.3	388.3	356.2
62.5°	774.5	614.5	420.2	324.2	308.3
65°	690.5	528.2	348.2	280.3	274.1
67.5°	610.4	448.2	280.3	246.1	240.1
70°	526.3	370.2	232.0	212.1	204.0
72.5°	446.3	298.1	194.0	178.2	174.1
75°	368.2	228.0	160.1	146.1	144.2
77.5°	290.3	162.0	126.1	118.1	114.0
80°	218.0	116.1	95.9	88.1	88.1
82.5°	152.0	78.1	66.0	62.0	62.0
85°	86.0	44.0	38.0	38.0	38.0
87.5°	32.1	16.0	16.0	14.0	14.0
90°	1.9	23.5	39.1	49.1	52.8
92.5°	49.1	41.2	47.0	51.0	52.8
95°	127.3	62.6	76.3	86.3	84.3
97.5°	229.3	68.7	99.9	105.8	107.7
100°	347.0	78.5	111.7	127.3	131.3
102.5°	476.2	472.4	115.7	137.1	143.1
105°	595.8	654.7	119.6	141.1	148.9
107.5°	734.9	783.8	123.6	145.0	152.9
110°	868.3	909.3	343.0	147.0	154.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	993.7	1028.9	995.6	150.8	156.9
115°	1126.9	1160.1	1209.2	301.8	160.8
117.5°	1242.5	1281.7	1315.1	1034.7	521.3
120°	1371.9	1401.2	1436.6	1460.1	1195.5
122.5°	1481.6	1513.0	1552.3	1563.9	1566.0
125°	1593.2	1618.8	1656.1	1669.8	1675.6
127.5°	1695.1	1722.6	1752.2	1771.7	1773.6
130°	1791.3	1822.7	1844.1	1865.7	1863.9
132.5°	1889.3	1914.9	1936.3	1954.0	1952.1
135°	1971.7	2003.0	2020.5	2040.3	2036.4
137.5°	2057.8	2081.3	2101.0	2120.6	2114.8
140°	2142.0	2157.8	2179.3	2196.9	2187.2
142.5°	2212.8	2226.5	2251.8	2267.4	2257.7
145°	2287.2	2285.1	2318.4	2332.2	2322.4
147.5°	2351.7	2345.9	2379.2	2389.0	2381.2
150°	2414.6	2400.8	2432.2	2443.8	2434.1
152.5°	2467.4	2451.8	2481.1	2493.0	2479.2
155°	2518.4	2500.9	2524.3	2536.0	2520.4
157.5°	2559.6	2544.0	2561.6	2575.3	2559.6
160°	2594.9	2583.0	2594.9	2606.6	2592.8
162.5°	2626.1	2614.4	2624.2	2637.9	2620.3
165°	2653.6	2641.9	2647.8	2661.5	2647.8
167.5°	2675.2	2663.4	2669.3	2683.1	2665.4
170°	2692.9	2681.0	2684.9	2698.7	2681.0
172.5°	2704.6	2692.9	2696.8	2710.5	2692.9
175°	2714.3	2700.5	2704.6	2718.2	2698.7
177.5°	2718.2	2704.6	2706.6	2720.3	2702.7
180°	2708.5	2708.5	2708.5	2708.5	2708.5

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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	8.99	9.72	10.06	10.79	12.25	4.96	5.69	6.03	6.76	8.21
	3H	10.66	11.31	11.74	12.39	13.86	6.13	6.79	7.21	7.86	9.34
	4H	11.26	11.88	12.35	12.95	14.43	6.58	7.19	7.67	8.27	9.75
	6H	11.67	12.24	12.77	13.32	14.81	6.89	7.46	7.99	8.54	10.03
	8H	11.79	12.33	12.89	13.43	14.91	6.97	7.51	8.08	8.61	10.10
	12H	11.84	12.36	12.95	13.45	14.96	7.01	7.52	8.12	8.61	10.12
4H	2H	9.00	9.62	10.09	10.69	12.17	5.54	6.16	6.64	7.24	8.72
	3H	10.81	11.32	11.91	12.43	13.92	6.87	7.39	7.98	8.49	9.99
	4H	11.49	11.97	12.60	13.06	14.57	7.41	7.88	8.52	8.98	10.49
	6H	12.00	12.40	13.11	13.52	15.03	7.82	8.22	8.94	9.34	10.85
	8H	12.17	12.54	13.28	13.66	15.18	7.94	8.32	9.06	9.43	10.95
	12H	12.25	12.60	13.39	13.72	15.25	8.00	8.34	9.13	9.47	10.99
8H	4H	11.45	11.83	12.57	12.94	14.46	7.68	8.06	8.80	9.17	10.69
	6H	12.01	12.32	13.15	13.47	14.99	8.19	8.50	9.33	9.65	11.17
	8H	12.22	12.49	13.36	13.63	15.16	8.37	8.65	9.52	9.78	11.32
	12H	12.35	12.59	13.50	13.72	15.29	8.48	8.72	9.63	9.85	11.43
12H	4H	11.40	11.74	12.53	12.86	14.39	7.68	8.02	8.81	9.15	10.67
	6H	11.98	12.26	13.13	13.39	14.93	8.23	8.51	9.38	9.64	11.18
	8H	12.19	12.43	13.34	13.56	15.14	8.44	8.67	9.58	9.80	11.38