

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: P916775

Luminaire Tested: DFN2DIP-PN3F0-090D070US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916775
REPORT IS A COMBINATION OF REPORTS P901100 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-090D070US930-RLLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

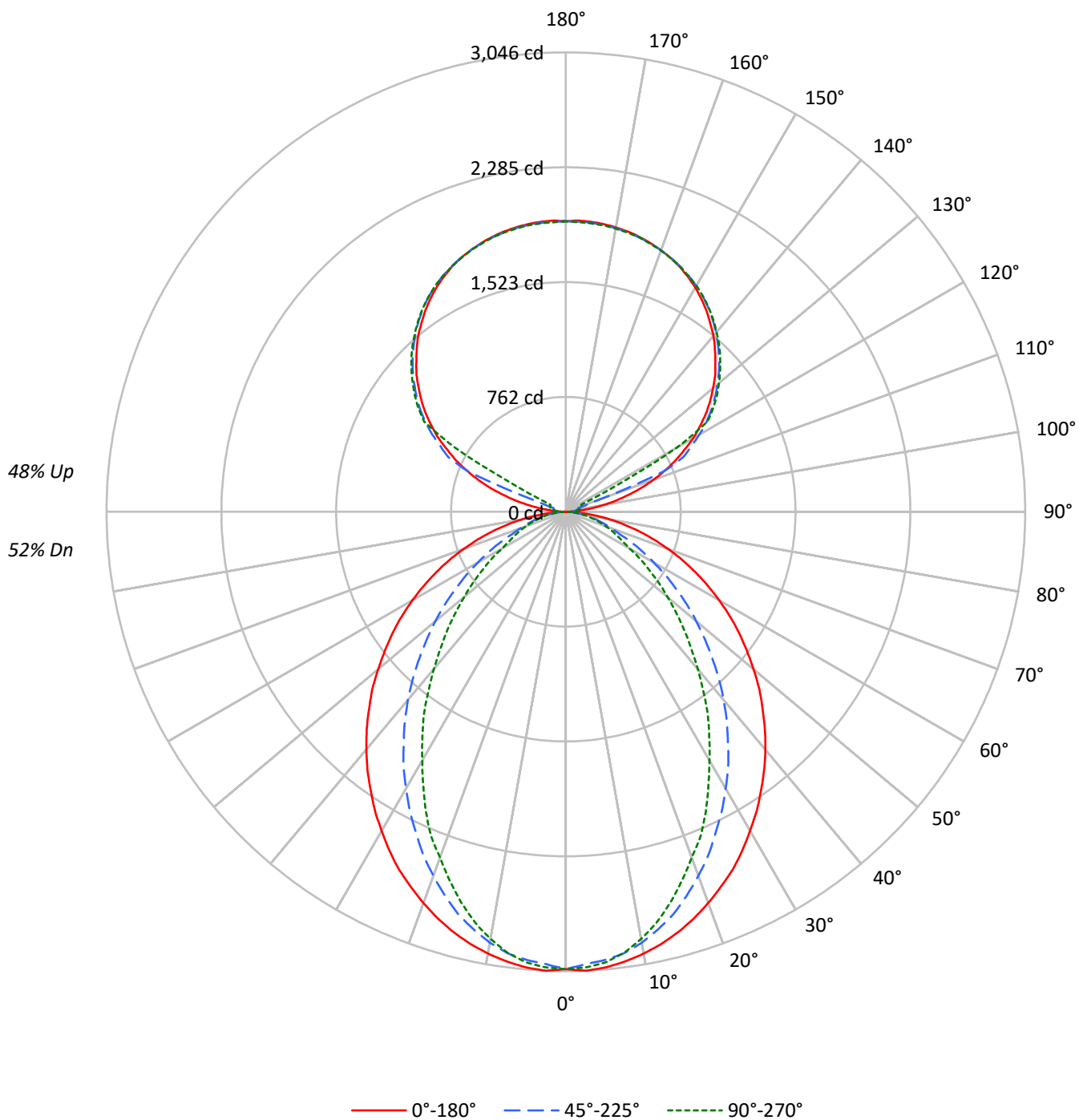
Lumens per Lamp: N/A
Luminaire Lumens: 11887.1 lumens
Efficiency: N/A
Efficacy: 80.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 147.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	85	85	85	71	71	71	58	58	58
1	99	95	91	88	91	88	85	82	75	73	71	63	62	60	52	51	50
2	90	83	77	72	84	77	72	68	66	63	59	56	53	51	47	45	43
3	83	74	67	61	76	69	62	57	59	54	50	50	47	44	42	39	37
4	76	66	58	52	70	61	54	49	53	48	43	45	41	38	38	35	33
5	70	59	51	45	65	55	48	43	47	42	38	41	36	33	34	31	29
6	65	53	45	39	60	49	42	37	43	37	33	37	33	29	31	28	26
7	60	48	40	35	55	45	38	33	39	34	30	34	29	26	29	25	23
8	56	44	36	31	52	41	34	29	36	30	26	31	27	24	26	23	21
9	52	40	33	28	48	38	31	26	33	28	24	29	24	21	25	21	19
10	49	37	30	25	45	35	28	24	30	25	22	27	22	19	23	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3545	3545	3545
5°	3549	3486	3510
10°	3511	3416	3394
15°	3461	3300	3216
20°	3395	3142	2998
25°	3327	2966	2788
30°	3237	2785	2522
35°	3149	2591	2288
40°	3059	2390	2020
45°	2954	2168	1777
50°	2846	1943	1540
55°	2733	1704	1313
60°	2601	1455	1079
65°	2450	1201	969
70°	2267	964	875
75°	2036	845	793
80°	1703	701	682
85°	1157	456	504

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2954 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.2	2.4
10°-20°	780.3	6.6
20°-30°	1095.5	9.2
30°-40°	1194.1	10.0
40°-50°	1097.5	9.2
50°-60°	861.9	7.3
60°-70°	561.0	4.7
70°-80°	288.8	2.4
80°-90°	77.1	0.6
90°-100°	63.5	0.5
100°-110°	236.8	2.0
110°-120°	627.9	5.3
120°-130°	1041.5	8.8
130°-140°	1106.3	9.3
140°-150°	1028.1	8.6
150°-160°	826.6	7.0
160°-170°	532.6	4.5
170°-180°	183.3	1.5
0°-30°	2159.9	18.2
0°-40°	3354.0	28.2
0°-60°	5313.5	44.7
0°-90°	6240.4	52.5
90°-120°	928.2	7.8
90°-150°	4104.1	34.5
90°-180°	5647.0	47.5
0°-180°	11887.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3033	3033	3033	3033	3033	
5°	3033	3019	2983	3008	3000	288
15°	2884	2854	2761	2709	2682	813
25°	2618	2530	2349	2237	2196	1204
35°	2256	2116	1875	1702	1641	1412
45°	1844	1660	1372	1177	1111	1424
55°	1402	1188	892	727	675	1253
65°	947	724	478	384	376	939
75°	505	313	220	200	198	534
85°	118	60	52	52	52	135
90°	1	17	28	35	38	11
95°	90	44	54	61	60	107
105°	424	466	85	100	106	453
115°	801	825	860	215	114	789
125°	1133	1151	1178	1188	1192	1010
135°	1402	1424	1437	1451	1448	1083
145°	1626	1625	1649	1658	1652	1017
155°	1791	1778	1795	1803	1792	825
165°	1887	1879	1883	1893	1883	533
175°	1930	1920	1923	1933	1919	184
180°	1926	1926	1926	1926	1926	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3032.7	3032.7	3032.7	3032.7	3032.7
2.5°	3046.4	3032.7	3002.3	3030.1	3024.5
5°	3032.7	3019.0	2983.2	3007.9	2999.7
7.5°	3007.9	2991.6	2953.2	2963.9	2950.2
10°	2975.0	2955.8	2901.1	2892.6	2876.3
12.5°	2933.9	2909.2	2835.0	2818.6	2788.3
15°	2884.4	2854.2	2761.0	2708.8	2681.5
17.5°	2826.8	2782.9	2667.5	2607.2	2563.3
20°	2761.0	2706.0	2568.8	2500.4	2439.8
22.5°	2689.7	2626.5	2467.2	2374.0	2333.0
25°	2618.3	2530.4	2349.3	2236.9	2195.5
27.5°	2533.3	2439.8	2239.5	2110.5	2047.3
30°	2442.7	2338.2	2118.6	1978.9	1904.6
32.5°	2354.7	2228.4	2003.6	1838.8	1770.1
35°	2256.1	2116.0	1874.6	1701.7	1641.1
37.5°	2160.0	2008.9	1753.8	1564.2	1495.8
40°	2058.4	1893.9	1627.4	1432.6	1361.3
42.5°	1954.1	1778.6	1501.3	1298.1	1229.6
45°	1844.4	1660.4	1372.3	1177.2	1111.4
47.5°	1740.1	1545.3	1248.9	1053.8	993.5
50°	1624.8	1430.0	1128.0	938.5	881.1
52.5°	1512.1	1306.3	1012.8	831.6	779.5
55°	1402.3	1188.3	891.9	727.4	675.2
57.5°	1290.0	1070.4	785.1	631.3	587.3
60°	1174.6	955.0	672.4	532.6	488.6
62.5°	1062.3	842.7	576.3	444.7	422.8
65°	946.9	724.5	477.5	384.3	375.9
67.5°	837.1	614.7	384.3	337.5	329.3
70°	721.9	507.8	318.3	290.9	279.8
72.5°	612.0	408.8	266.1	244.3	238.8
75°	504.9	312.7	219.6	200.3	197.7
77.5°	398.0	222.2	172.9	161.9	156.4
80°	299.1	159.3	131.6	120.8	120.8
82.5°	208.5	107.1	90.6	85.0	85.0
85°	117.9	60.3	52.1	52.1	52.1
87.5°	43.9	21.8	21.8	19.2	19.2
90°	1.3	16.7	27.8	34.9	37.6
92.5°	34.9	29.3	33.4	36.3	37.6
95°	90.5	44.5	54.3	61.4	59.9
97.5°	163.0	48.8	71.0	75.3	76.6
100°	246.8	55.8	79.4	90.5	93.4
102.5°	338.6	336.0	82.3	97.5	101.7
105°	423.7	465.5	85.0	100.3	105.9
107.5°	522.6	557.4	87.9	103.1	108.8
110°	617.5	646.6	243.9	104.6	110.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	706.7	731.6	708.0	107.2	111.5
115°	801.4	825.0	859.9	214.7	114.4
117.5°	883.6	911.4	935.2	735.8	370.7
120°	975.6	996.5	1021.7	1038.4	850.2
122.5°	1053.5	1075.9	1103.9	1112.1	1113.6
125°	1133.0	1151.2	1177.7	1187.5	1191.6
127.5°	1205.5	1225.0	1246.0	1260.0	1261.3
130°	1273.8	1296.2	1311.4	1326.8	1325.5
132.5°	1343.5	1361.7	1377.0	1389.5	1388.2
135°	1402.1	1424.4	1436.9	1450.9	1448.1
137.5°	1463.3	1480.1	1494.1	1508.1	1503.9
140°	1523.2	1534.5	1549.7	1562.3	1555.3
142.5°	1573.5	1583.3	1601.3	1612.4	1605.5
145°	1626.5	1625.1	1648.7	1658.5	1651.5
147.5°	1672.3	1668.3	1691.9	1698.8	1693.4
150°	1717.0	1707.3	1729.7	1737.9	1731.0
152.5°	1754.6	1743.5	1764.4	1772.8	1763.1
155°	1790.9	1778.4	1795.1	1803.4	1792.4
157.5°	1820.2	1809.1	1821.6	1831.4	1820.2
160°	1845.3	1836.9	1845.3	1853.6	1843.8
162.5°	1867.5	1859.2	1866.1	1875.9	1863.4
165°	1887.0	1878.8	1882.8	1892.6	1882.8
167.5°	1902.4	1893.9	1898.3	1908.0	1895.5
170°	1915.0	1906.6	1909.3	1919.1	1906.6
172.5°	1923.3	1915.0	1917.8	1927.5	1915.0
175°	1930.2	1920.4	1923.3	1933.0	1919.1
177.5°	1933.0	1923.3	1924.8	1934.5	1921.9
180°	1926.1	1926.1	1926.1	1926.1	1926.1

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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	11.74	12.59	12.68	13.54	14.78	7.70	8.55	8.64	9.51	10.75
	3H	13.41	14.17	14.36	15.13	16.39	8.89	9.65	9.84	10.61	11.87
	4H	14.01	14.73	14.98	15.70	16.97	9.33	10.05	10.30	11.02	12.29
	6H	14.43	15.09	15.41	16.07	17.35	9.65	10.31	10.63	11.29	12.57
	8H	14.56	15.19	15.54	16.18	17.46	9.74	10.37	10.72	11.36	12.64
	12H	14.62	15.22	15.61	16.20	17.50	9.78	10.38	10.77	11.36	12.67
4H	2H	11.76	12.47	12.73	13.44	14.71	8.30	9.02	9.27	9.98	11.25
	3H	13.58	14.18	14.56	15.17	16.46	9.64	10.24	10.63	11.24	12.52
	4H	14.27	14.81	15.26	15.80	17.11	10.19	10.73	11.18	11.72	13.03
	6H	14.78	15.25	15.78	16.26	17.57	10.60	11.07	11.60	12.08	13.39
	8H	14.95	15.39	15.95	16.40	17.72	10.73	11.16	11.73	12.17	13.49
	12H	15.04	15.44	16.07	16.46	17.79	10.79	11.18	11.81	12.21	13.53
8H	4H	14.24	14.67	15.24	15.68	17.00	10.46	10.90	11.47	11.91	13.23
	6H	14.80	15.16	15.82	16.21	17.52	10.97	11.34	12.00	12.39	13.70
	8H	15.01	15.33	16.05	16.36	17.70	11.16	11.48	12.20	12.51	13.85
	12H	15.14	15.42	16.18	16.45	17.83	11.28	11.56	12.32	12.59	13.97
12H	4H	14.19	14.58	15.21	15.61	16.93	10.47	10.86	11.49	11.89	13.21
	6H	14.77	15.09	15.81	16.12	17.46	11.02	11.34	12.06	12.38	13.71
	8H	14.99	15.27	16.03	16.30	17.68	11.23	11.51	12.27	12.54	13.92

END OF REPORT