

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: P908795

Luminaire Tested: DFN2DIP-PN4F0-090D070US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908795
REPORT IS A COMBINATION OF REPORTS P901194 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-090D070US840-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

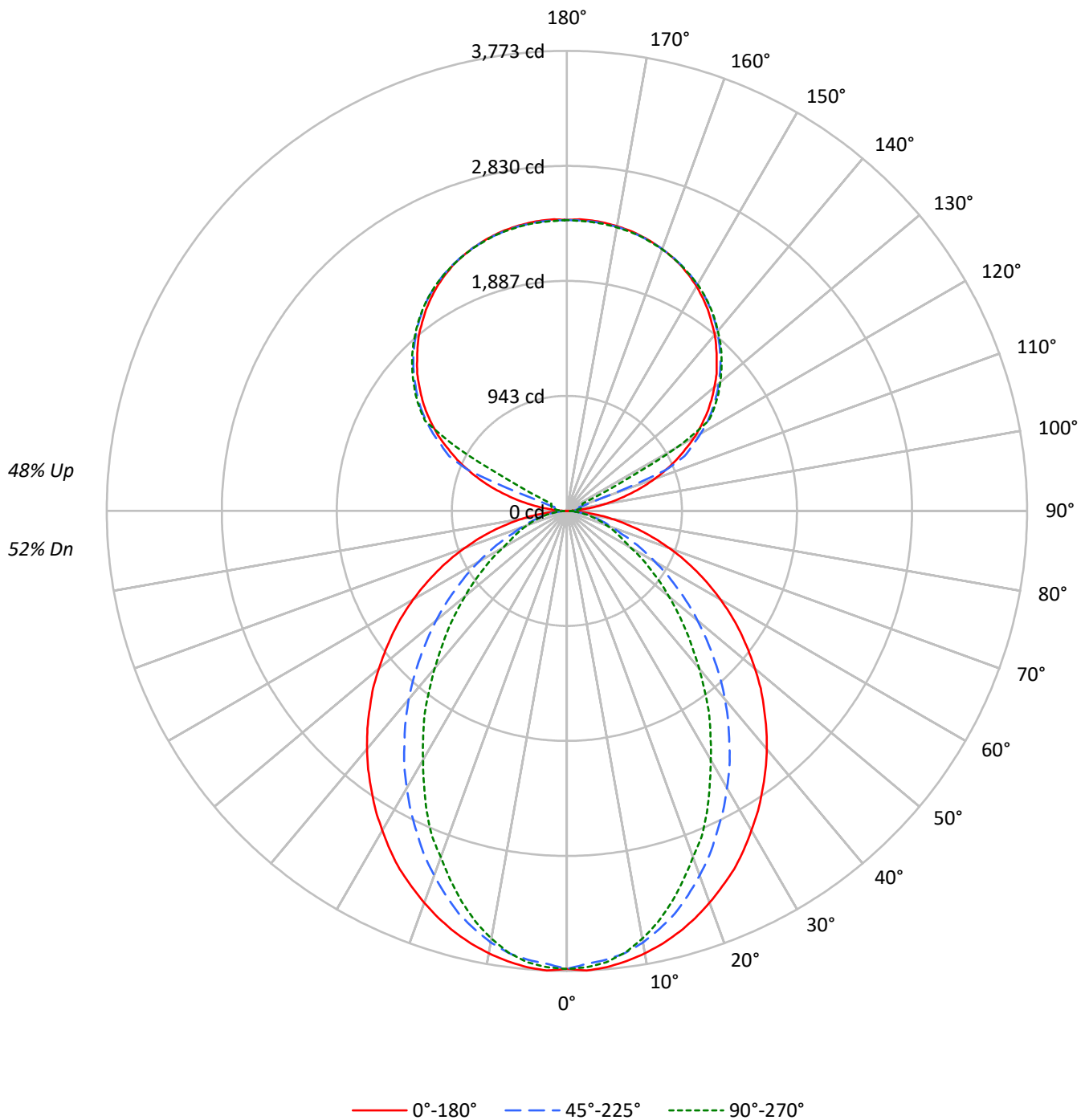
Lumens per Lamp: N/A
Luminaire Lumens: 14723.9 lumens
Efficiency: N/A
Efficacy: 104.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 140.9
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	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°	2742	2742	2742
5°	2746	2699	2716
10°	2719	2646	2628
15°	2682	2559	2492
20°	2632	2439	2325
25°	2582	2304	2163
30°	2513	2166	1958
35°	2447	2017	1778
40°	2379	1863	1572
45°	2300	1692	1384
50°	2218	1520	1201
55°	2133	1336	1025
60°	2035	1143	844
65°	1921	947	761
70°	1784	764	689
75°	1611	674	628
80°	1361	567	547
85°	948	380	414

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2300 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	352.1	2.4
10°-20°	966.5	6.6
20°-30°	1356.9	9.2
30°-40°	1479.1	10.0
40°-50°	1359.4	9.2
50°-60°	1067.6	7.3
60°-70°	694.9	4.7
70°-80°	357.7	2.4
80°-90°	95.5	0.6
90°-100°	78.7	0.5
100°-110°	293.3	2.0
110°-120°	777.8	5.3
120°-130°	1290.0	8.8
130°-140°	1370.3	9.3
140°-150°	1273.5	8.6
150°-160°	1023.9	7.0
160°-170°	659.7	4.5
170°-180°	227.1	1.5
0°-30°	2675.4	18.2
0°-40°	4154.5	28.2
0°-60°	6581.5	44.7
0°-90°	7729.7	52.5
90°-120°	1149.7	7.8
90°-150°	5083.5	34.5
90°-180°	6994.0	47.5
0°-180°	14723.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3756	3756	3756	3756	3756	
5°	3756	3739	3695	3726	3716	356
15°	3573	3535	3420	3355	3321	1007
25°	3243	3134	2910	2771	2720	1492
35°	2794	2621	2322	2108	2033	1749
45°	2284	2057	1700	1458	1377	1764
55°	1737	1472	1105	901	836	1552
65°	1173	897	592	476	466	1163
75°	625	387	272	248	245	661
85°	146	75	64	64	64	168
90°	2	21	34	43	47	14
95°	112	55	67	76	74	133
105°	525	577	105	124	131	561
115°	993	1022	1065	266	142	977
125°	1403	1426	1459	1471	1476	1252
135°	1737	1764	1780	1797	1794	1342
145°	2015	2013	2042	2054	2046	1260
155°	2218	2203	2224	2234	2220	1022
165°	2337	2327	2332	2344	2332	660
175°	2391	2379	2382	2394	2377	228
180°	2386	2386	2386	2386	2386	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3756.4	3756.4	3756.4	3756.4	3756.4
2.5°	3773.4	3756.4	3718.8	3753.2	3746.3
5°	3756.4	3739.4	3695.1	3725.7	3715.6
7.5°	3725.7	3705.5	3657.9	3671.3	3654.3
10°	3685.0	3661.2	3593.4	3582.9	3562.7
12.5°	3634.1	3603.5	3511.5	3491.3	3453.7
15°	3572.8	3535.3	3419.9	3355.3	3321.4
17.5°	3501.4	3447.0	3304.1	3229.4	3175.0
20°	3419.9	3351.7	3181.8	3097.1	3022.0
22.5°	3331.5	3253.3	3056.0	2940.5	2889.7
25°	3243.2	3134.2	2909.9	2770.7	2719.5
27.5°	3137.9	3022.0	2773.9	2614.1	2535.9
30°	3025.7	2896.2	2624.2	2451.1	2359.1
32.5°	2916.7	2760.2	2481.7	2277.7	2192.5
35°	2794.5	2621.0	2322.0	2107.8	2032.8
37.5°	2675.4	2488.3	2172.3	1937.5	1852.8
40°	2549.6	2345.8	2015.8	1774.5	1686.2
42.5°	2420.4	2203.0	1859.6	1607.9	1523.1
45°	2284.5	2056.6	1699.8	1458.1	1376.6
47.5°	2155.4	1914.1	1546.9	1305.3	1230.6
50°	2012.6	1771.2	1397.2	1162.5	1091.4
52.5°	1873.0	1618.0	1254.5	1030.1	965.5
55°	1737.0	1471.9	1104.7	901.0	836.4
57.5°	1597.8	1325.9	972.4	781.9	727.5
60°	1454.9	1183.0	832.8	659.6	605.2
62.5°	1315.8	1043.8	713.8	550.8	523.7
65°	1172.9	897.4	591.5	476.1	465.6
67.5°	1036.9	761.3	476.1	418.0	407.9
70°	894.1	629.0	394.3	360.3	346.6
72.5°	758.1	506.3	329.6	302.6	295.8
75°	625.4	387.4	272.0	248.1	244.9
77.5°	493.0	275.2	214.2	200.6	193.7
80°	370.4	197.3	163.0	149.7	149.7
82.5°	258.2	132.7	112.2	105.3	105.3
85°	146.0	74.6	64.5	64.5	64.5
87.5°	54.4	27.1	27.1	23.8	23.8
90°	1.6	20.7	34.4	43.2	46.6
92.5°	43.2	36.3	41.4	44.9	46.6
95°	112.1	55.1	67.3	76.0	74.2
97.5°	201.9	60.5	88.0	93.3	94.9
100°	305.7	69.1	98.4	112.1	115.6
102.5°	419.4	416.2	101.9	120.8	126.0
105°	524.8	576.6	105.3	124.2	131.2
107.5°	647.3	690.4	108.9	127.7	134.7
110°	764.9	800.9	302.2	129.6	136.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	875.4	906.3	877.0	132.8	138.1
115°	992.6	1021.9	1065.1	265.9	141.7
117.5°	1094.5	1128.9	1158.4	911.4	459.2
120°	1208.4	1234.3	1265.5	1286.2	1053.1
122.5°	1304.9	1332.6	1367.4	1377.6	1379.4
125°	1403.4	1425.9	1458.8	1470.9	1475.9
127.5°	1493.2	1517.3	1543.4	1560.6	1562.3
130°	1577.8	1605.5	1624.4	1643.5	1641.8
132.5°	1664.2	1686.7	1705.6	1721.1	1719.5
135°	1736.7	1764.3	1779.8	1797.2	1793.7
137.5°	1812.5	1833.3	1850.7	1867.9	1862.8
140°	1886.7	1900.7	1919.6	1935.1	1926.5
142.5°	1949.0	1961.2	1983.5	1997.2	1988.6
145°	2014.7	2012.9	2042.2	2054.3	2045.7
147.5°	2071.4	2066.4	2095.7	2104.3	2097.5
150°	2126.8	2114.8	2142.4	2152.6	2144.0
152.5°	2173.3	2159.6	2185.5	2195.9	2183.8
155°	2218.3	2202.8	2223.5	2233.8	2220.1
157.5°	2254.5	2240.8	2256.3	2268.5	2254.5
160°	2285.7	2275.2	2285.7	2295.9	2283.8
162.5°	2313.2	2302.9	2311.5	2323.6	2308.0
165°	2337.3	2327.1	2332.2	2344.3	2332.2
167.5°	2356.4	2345.9	2351.3	2363.4	2347.8
170°	2372.0	2361.6	2365.0	2377.1	2361.6
172.5°	2382.3	2372.0	2375.5	2387.5	2372.0
175°	2390.9	2378.7	2382.3	2394.3	2377.1
177.5°	2394.3	2382.3	2384.1	2396.2	2380.6
180°	2385.7	2385.7	2385.7	2385.7	2385.7

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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	10.89	11.74	11.83	12.69	13.93	6.85	7.71	7.80	8.66	9.90
	3H	12.57	13.33	13.53	14.30	15.56	8.05	8.81	9.00	9.77	11.03
	4H	13.18	13.90	14.15	14.87	16.14	8.50	9.22	9.47	10.18	11.45
	6H	13.61	14.27	14.59	15.24	16.53	8.82	9.48	9.80	10.45	11.74
	8H	13.74	14.37	14.72	15.36	16.64	8.91	9.54	9.90	10.53	11.81
	12H	13.80	14.40	14.79	15.38	16.69	8.96	9.55	9.95	10.54	11.84
4H	2H	10.91	11.63	11.88	12.60	13.87	7.45	8.17	8.43	9.14	10.41
	3H	12.74	13.34	13.73	14.34	15.62	8.81	9.40	9.79	10.40	11.69
	4H	13.44	13.99	14.43	14.98	16.28	9.36	9.90	10.35	10.89	12.20
	6H	13.96	14.43	14.96	15.44	16.75	9.78	10.25	10.78	11.26	12.57
	8H	14.14	14.57	15.14	15.58	16.90	9.91	10.35	10.91	11.35	12.67
	12H	14.23	14.63	15.26	15.65	16.98	9.97	10.37	11.00	11.39	12.72
8H	4H	13.41	13.85	14.41	14.85	16.17	9.64	10.08	10.64	11.08	12.40
	6H	13.98	14.34	15.01	15.39	16.71	10.16	10.52	11.19	11.57	12.89
	8H	14.20	14.52	15.23	15.55	16.89	10.35	10.67	11.39	11.71	13.04
	12H	14.34	14.62	15.38	15.65	17.03	10.47	10.75	11.51	11.78	13.16
12H	4H	13.36	13.76	14.38	14.78	16.11	9.65	10.04	10.67	11.06	12.39
	6H	13.95	14.27	14.99	15.31	16.65	10.21	10.53	11.25	11.56	12.90
	8H	14.18	14.46	15.22	15.49	16.87	10.42	10.70	11.46	11.73	13.11