

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: P915723

Luminaire Tested: DFN2DIP-TR4F0-110D080US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915723
REPORT IS A COMBINATION OF REPORTS P901975 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-110D080US927-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

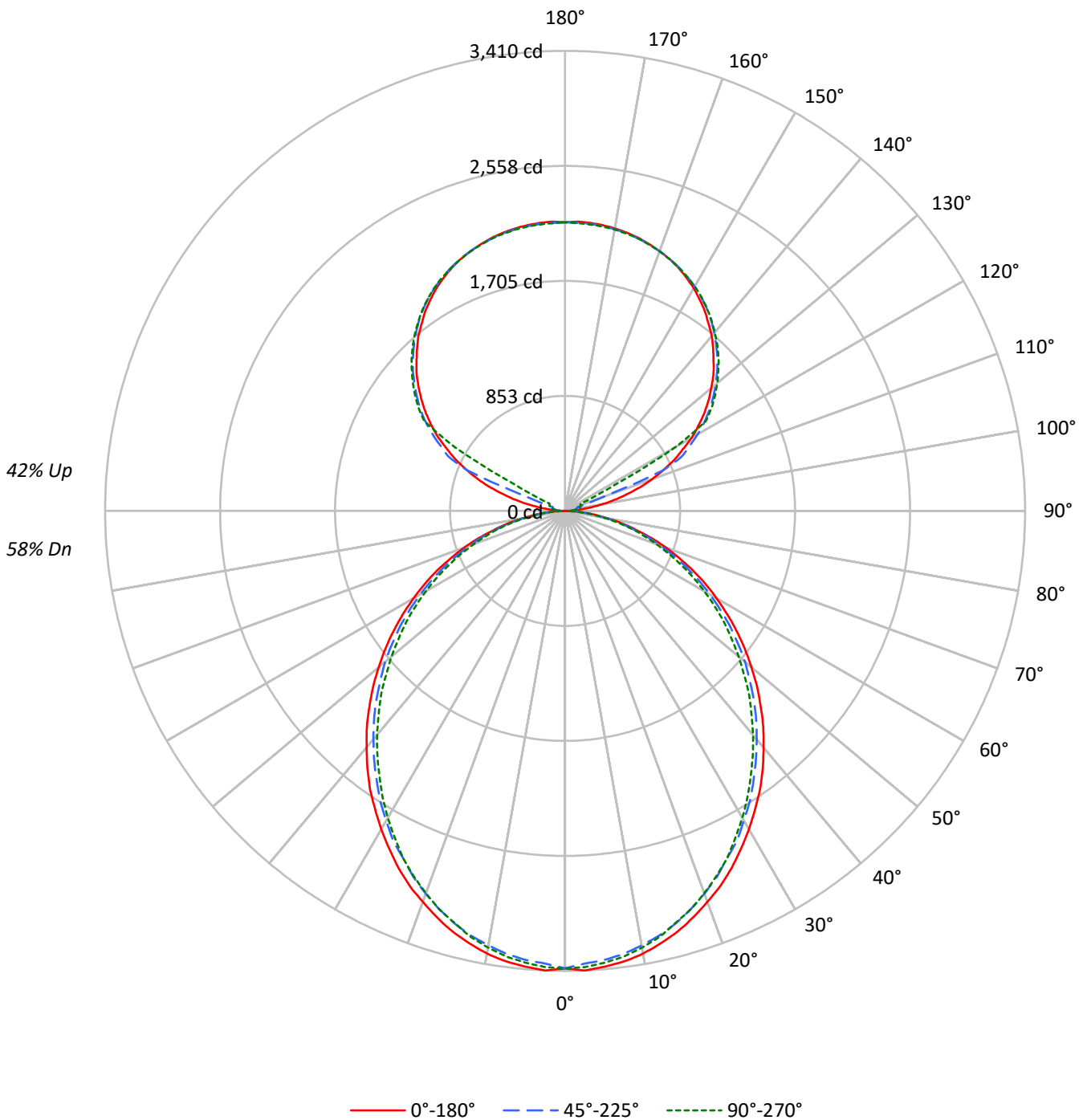
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14900.9 lumens
Efficiency: N/A
Efficacy: 86.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 171.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
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		0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	109	109	109	109	102	102	102	102	88	88	88	75	75	75	63	63	63	58		
1	100	95	91	88	93	89	85	82	77	74	72	66	64	63	56	55	54	49		
2	91	83	77	72	84	78	72	68	67	63	60	58	55	52	49	47	45	41		
3	83	73	66	60	77	68	62	57	60	54	50	51	47	44	44	41	38	35		
4	76	65	57	51	70	61	54	48	53	47	43	46	41	38	39	36	33	30		
5	70	58	50	43	65	54	47	41	47	42	37	41	37	33	35	32	29	26		
6	64	52	44	38	60	49	41	36	43	37	32	37	32	29	32	28	25	23		
7	59	47	39	33	55	44	37	32	39	33	29	34	29	26	29	26	23	20		
8	55	43	35	29	51	40	33	28	35	30	25	31	26	23	27	23	20	18		
9	51	39	31	26	48	37	30	25	33	27	23	29	24	21	25	21	18	16		
10	48	36	28	24	45	34	27	23	30	24	21	26	22	19	23	19	17	15		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2694	2694	2694
5°	2698	2656	2674
10°	2676	2620	2638
15°	2637	2577	2581
20°	2584	2517	2523
25°	2531	2446	2456
30°	2464	2379	2371
35°	2402	2300	2281
40°	2324	2221	2195
45°	2247	2141	2107
50°	2163	2057	2005
55°	2075	1960	1912
60°	1975	1846	1805
65°	1866	1727	1679
70°	1728	1582	1543
75°	1536	1408	1417
80°	1305	1187	1177
85°	945	806	781

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2247 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	319.1	2.1
10°-20°	897.9	6.0
20°-30°	1319.6	8.9
30°-40°	1532.6	10.3
40°-50°	1530.7	10.3
50°-60°	1334.7	9.0
60°-70°	986.7	6.6
70°-80°	558.2	3.7
80°-90°	151.1	1.0
90°-100°	70.5	0.5
100°-110°	262.9	1.8
110°-120°	697.3	4.7
120°-130°	1156.5	7.8
130°-140°	1228.4	8.2
140°-150°	1141.7	7.7
150°-160°	917.9	6.2
160°-170°	591.5	4.0
170°-180°	203.6	1.4
0°-30°	2536.6	17.0
0°-40°	4069.2	27.3
0°-60°	6934.6	46.5
0°-90°	8630.6	57.9
90°-120°	1030.7	6.9
90°-150°	4557.3	30.6
90°-180°	6270.0	42.1
0°-180°	14900.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3391	3391	3391	3391	3391	
5°	3391	3378	3342	3368	3362	322
15°	3228	3208	3166	3179	3163	909
25°	2921	2895	2840	2846	2840	1344
35°	2520	2488	2436	2416	2400	1574
45°	2051	2028	1979	1943	1930	1583
55°	1552	1532	1493	1454	1438	1388
65°	1047	1027	994	965	949	1035
75°	548	541	525	505	512	585
85°	134	130	127	117	114	149
90°	2	18	31	39	42	14
95°	100	49	60	68	66	119
105°	470	517	94	111	118	503
115°	890	916	955	238	127	876
125°	1258	1278	1308	1319	1323	1122
135°	1557	1582	1596	1611	1608	1203
145°	1806	1804	1831	1842	1834	1130
155°	1989	1975	1993	2003	1990	916
165°	2096	2086	2091	2102	2091	592
175°	2143	2133	2136	2146	2131	204
180°	2139	2139	2139	2139	2139	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3390.7	3390.7	3390.7	3390.7	3390.7
2.5°	3410.3	3394.1	3358.1	3390.7	3384.4
5°	3390.7	3377.9	3341.9	3367.8	3361.6
7.5°	3367.8	3348.5	3312.5	3338.8	3332.2
10°	3332.2	3309.3	3270.3	3296.2	3286.5
12.5°	3283.1	3263.7	3224.7	3240.9	3234.3
15°	3227.7	3208.3	3165.8	3178.9	3162.7
17.5°	3159.2	3139.9	3097.3	3113.6	3097.3
20°	3084.2	3064.8	3019.2	3028.8	3016.1
22.5°	3009.5	2980.0	2937.5	2937.5	2930.9
25°	2921.2	2895.3	2840.0	2846.2	2840.0
27.5°	2823.3	2800.5	2758.3	2748.6	2732.4
30°	2725.8	2699.5	2650.7	2641.1	2627.9
32.5°	2621.3	2602.0	2549.7	2530.0	2516.8
35°	2520.3	2487.8	2435.6	2415.8	2399.6
37.5°	2406.2	2376.8	2324.6	2301.7	2285.4
40°	2288.9	2262.6	2210.4	2181.4	2168.2
42.5°	2174.8	2148.5	2096.6	2063.7	2044.4
45°	2051.0	2028.1	1978.9	1943.4	1930.2
47.5°	1930.2	1907.4	1855.1	1819.2	1799.8
50°	1802.9	1786.7	1741.0	1695.3	1679.1
52.5°	1679.1	1656.2	1614.1	1578.0	1555.2
55°	1552.1	1532.4	1493.3	1454.2	1438.0
57.5°	1424.8	1408.6	1366.0	1326.9	1313.8
60°	1297.5	1284.8	1239.1	1203.1	1193.4
62.5°	1173.7	1150.9	1118.3	1085.8	1072.7
65°	1046.7	1027.0	994.5	965.1	948.9
67.5°	916.3	899.8	870.7	847.9	834.7
70°	795.6	782.4	753.0	730.2	717.4
72.5°	671.8	658.6	642.4	619.6	609.8
75°	547.6	541.4	524.7	505.4	512.0
77.5°	436.9	423.7	417.2	407.5	397.8
80°	326.2	322.7	316.2	306.5	299.9
82.5°	221.7	221.7	218.6	205.5	205.5
85°	133.6	130.4	127.3	117.2	114.2
87.5°	58.8	52.2	45.6	36.0	32.5
90°	1.5	18.5	30.9	38.7	41.7
92.5°	38.7	32.6	37.2	40.2	41.7
95°	100.5	49.4	60.3	68.2	66.5
97.5°	181.0	54.2	78.8	83.7	85.1
100°	274.0	61.9	88.2	100.5	103.6
102.5°	376.0	373.0	91.3	108.2	113.0
105°	470.5	517.0	94.4	111.4	117.6
107.5°	580.4	618.9	97.6	114.5	120.7
110°	685.7	718.0	270.9	116.1	122.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	784.7	812.5	786.2	119.1	123.9
115°	889.9	916.2	954.9	238.4	127.0
117.5°	981.2	1012.1	1038.5	817.1	411.7
120°	1083.4	1106.5	1134.5	1153.0	944.0
122.5°	1169.9	1194.8	1225.8	1235.0	1236.7
125°	1258.1	1278.3	1307.7	1318.6	1323.2
127.5°	1338.6	1360.3	1383.7	1399.1	1400.6
130°	1414.5	1439.3	1456.3	1473.4	1471.9
132.5°	1491.9	1512.1	1529.1	1543.0	1541.5
135°	1557.0	1581.7	1595.5	1611.2	1608.0
137.5°	1625.0	1643.5	1659.1	1674.6	1670.0
140°	1691.5	1704.0	1720.9	1734.9	1727.1
142.5°	1747.4	1758.2	1778.2	1790.6	1782.8
145°	1806.2	1804.5	1830.8	1841.7	1833.9
147.5°	1857.1	1852.5	1878.7	1886.5	1880.4
150°	1906.7	1895.8	1920.6	1929.8	1922.1
152.5°	1948.4	1936.1	1959.2	1968.6	1957.8
155°	1988.7	1974.9	1993.4	2002.6	1990.4
157.5°	2021.2	2008.9	2022.8	2033.7	2021.2
160°	2049.1	2039.8	2049.1	2058.3	2047.5
162.5°	2073.8	2064.6	2072.3	2083.1	2069.2
165°	2095.5	2086.3	2090.9	2101.7	2090.9
167.5°	2112.5	2103.2	2107.9	2118.8	2104.8
170°	2126.5	2117.1	2120.3	2131.1	2117.1
172.5°	2135.7	2126.5	2129.6	2140.5	2126.5
175°	2143.4	2132.6	2135.7	2146.5	2131.1
177.5°	2146.5	2135.7	2137.3	2148.2	2134.2
180°	2138.8	2138.8	2138.8	2138.8	2138.8



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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	12.35	12.30	13.25	14.41	10.98	11.92	11.86	12.82	13.98
	3H	13.08	13.92	13.97	14.83	16.01	12.60	13.44	13.50	14.36	15.54
	4H	13.67	14.46	14.58	15.38	16.57	13.19	13.99	14.11	14.91	16.10
	6H	14.07	14.80	15.00	15.73	16.93	13.60	14.33	14.52	15.26	16.46
	8H	14.18	14.88	15.11	15.82	17.02	13.70	14.40	14.64	15.35	16.55
	12H	14.23	14.89	15.17	15.83	17.06	13.75	14.41	14.69	15.35	16.58
4H	2H	11.88	12.68	12.80	13.60	14.79	11.54	12.33	12.46	13.25	14.44
	3H	13.75	14.42	14.68	15.37	16.57	13.36	14.03	14.29	14.98	16.18
	4H	14.47	15.08	15.41	16.02	17.25	14.07	14.67	15.01	15.62	16.85
	6H	14.99	15.51	15.94	16.48	17.71	14.58	15.10	15.53	16.08	17.30
	8H	15.14	15.63	16.10	16.60	17.84	14.73	15.22	15.69	16.18	17.43
	12H	15.22	15.66	16.19	16.64	17.89	14.80	15.24	15.77	16.22	17.47
8H	4H	14.67	15.16	15.63	16.13	17.37	14.31	14.80	15.27	15.77	17.01
	6H	15.31	15.71	16.29	16.72	17.96	14.95	15.35	15.93	16.36	17.60
	8H	15.53	15.89	16.52	16.88	18.14	15.16	15.52	16.15	16.51	17.77
	12H	15.66	15.98	16.66	16.97	18.27	15.28	15.60	16.27	16.58	17.89
12H	4H	14.66	15.10	15.64	16.09	17.33	14.31	14.75	15.29	15.73	16.98
	6H	15.34	15.70	16.33	16.69	17.95	14.99	15.35	15.98	16.34	17.60
	8H	15.58	15.90	16.58	16.89	18.19	15.23	15.54	16.22	16.53	17.84