

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: P907538

Luminaire Tested: DFN2DIP-TR4F0-110D080US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907538
REPORT IS A COMBINATION OF REPORTS P900455 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-110D080US835-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

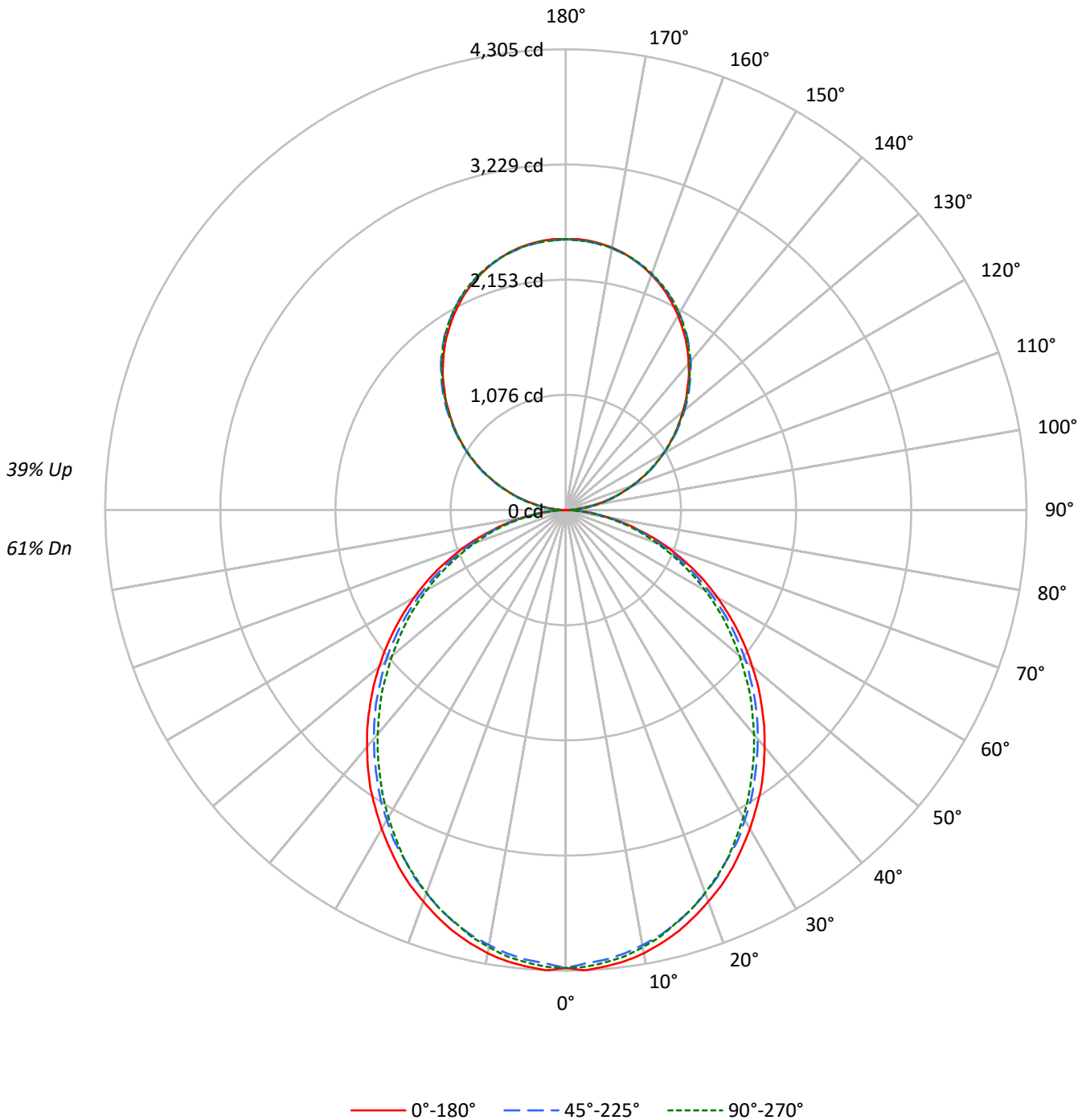
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17970.0 lumens
Efficiency: N/A
Efficacy: 104.6 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: Semi-Direct

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	0
RCR																					
0	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66	66	66	66	61
1	100	96	92	88	94	90	86	83	78	76	73	68	66	64	58	57	56	56	56	56	51
2	91	84	77	72	85	78	73	68	69	64	61	60	56	54	51	49	47	47	47	47	43
3	83	74	66	60	78	69	62	57	61	55	51	53	49	45	45	42	40	40	40	40	36
4	76	65	57	51	71	61	54	48	54	48	44	47	43	39	41	37	34	34	34	34	31
5	70	58	50	44	65	55	47	42	48	42	38	42	38	34	37	33	30	30	30	30	27
6	65	52	44	38	60	49	42	36	44	38	33	38	33	30	33	29	26	26	26	26	24
7	60	47	39	33	56	45	37	32	40	34	29	35	30	26	30	27	24	24	24	24	21
8	55	43	35	30	52	41	33	28	36	30	26	32	27	24	28	24	21	21	21	21	19
9	52	39	32	26	48	37	30	25	33	27	23	29	25	21	26	22	19	19	19	19	17
10	48	36	29	24	45	34	27	23	31	25	21	27	23	19	24	20	17	17	17	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3400	3400	3400
5°	3406	3353	3375
10°	3378	3308	3330
15°	3329	3253	3258
20°	3261	3178	3185
25°	3195	3087	3100
30°	3111	3003	2993
35°	3032	2903	2879
40°	2934	2803	2771
45°	2837	2703	2660
50°	2731	2597	2532
55°	2619	2475	2414
60°	2493	2330	2278
65°	2356	2180	2119
70°	2181	1997	1947
75°	1939	1778	1789
80°	1648	1499	1486
85°	1192	1017	985

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2837 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	402.8	2.2
10°-20°	1133.5	6.3
20°-30°	1665.7	9.3
30°-40°	1934.7	10.8
40°-50°	1932.3	10.8
50°-60°	1684.9	9.4
60°-70°	1245.5	6.9
70°-80°	704.7	3.9
80°-90°	193.2	1.1
90°-100°	156.6	0.9
100°-110°	497.5	2.8
110°-120°	851.3	4.7
120°-130°	1119.6	6.2
130°-140°	1256.7	7.0
140°-150°	1232.3	6.9
150°-160°	1033.7	5.8
160°-170°	685.6	3.8
170°-180°	239.6	1.3
0°-30°	3202.1	17.8
0°-40°	5136.7	28.6
0°-60°	8753.8	48.7
0°-90°	10897.2	60.6
90°-120°	1505.3	8.4
90°-150°	5113.9	28.5
90°-180°	7073.0	39.4
0°-180°	17970.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4280	4280	4280	4280	4280	
5°	4280	4264	4219	4251	4244	406
15°	4074	4050	3996	4013	3992	1148
25°	3688	3655	3585	3593	3585	1697
35°	3182	3140	3074	3050	3029	1987
45°	2589	2560	2498	2453	2437	1998
55°	1959	1934	1885	1836	1815	1752
65°	1321	1296	1255	1218	1198	1306
75°	691	683	662	638	646	738
85°	169	165	161	148	144	188
90°	2	28	75	70	72	17
95°	111	133	136	136	133	124
105°	459	465	470	474	474	485
115°	854	866	863	860	854	845
125°	1242	1262	1256	1249	1246	1110
135°	1607	1631	1635	1633	1627	1242
145°	1951	1966	1979	1981	1972	1219
155°	2231	2237	2244	2255	2248	1027
165°	2427	2425	2425	2440	2429	685
175°	2526	2519	2515	2530	2517	240
180°	2530	2530	2530	2530	2530	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4280.2	4280.2	4280.2	4280.2	4280.2
2.5°	4305.0	4284.5	4239.1	4280.2	4272.3
5°	4280.2	4264.0	4218.6	4251.3	4243.5
7.5°	4251.3	4226.9	4181.5	4214.7	4206.4
10°	4206.4	4177.5	4128.2	4160.9	4148.7
12.5°	4144.4	4119.9	4070.6	4091.1	4082.8
15°	4074.5	4050.0	3996.3	4012.9	3992.4
17.5°	3988.0	3963.6	3909.9	3930.4	3909.9
20°	3893.3	3868.8	3811.2	3823.4	3807.3
22.5°	3799.0	3761.8	3708.1	3708.1	3699.8
25°	3687.6	3654.9	3585.0	3592.9	3585.0
27.5°	3564.0	3535.2	3481.9	3469.7	3449.2
30°	3440.9	3407.7	3346.1	3333.9	3317.3
32.5°	3309.0	3284.6	3218.6	3193.7	3177.1
35°	3181.5	3140.5	3074.5	3049.6	3029.1
37.5°	3037.4	3000.3	2934.4	2905.5	2885.0
40°	2889.4	2856.2	2790.3	2753.6	2737.0
42.5°	2745.3	2712.1	2646.6	2605.1	2580.7
45°	2589.0	2560.1	2498.1	2453.2	2436.6
47.5°	2436.6	2407.8	2341.8	2296.4	2271.9
50°	2275.9	2255.4	2197.7	2140.1	2119.6
52.5°	2119.6	2090.7	2037.5	1992.0	1963.2
55°	1959.3	1934.4	1885.1	1835.7	1815.2
57.5°	1798.6	1778.1	1724.4	1675.0	1658.4
60°	1637.9	1621.8	1564.1	1518.7	1506.5
62.5°	1481.6	1452.8	1411.7	1370.7	1354.1
65°	1321.3	1296.4	1255.4	1218.3	1197.8
67.5°	1156.7	1135.8	1099.1	1070.3	1053.7
70°	1004.3	987.7	950.6	921.8	905.6
72.5°	848.0	831.4	810.9	782.1	769.8
75°	691.2	683.4	662.4	638.0	646.3
77.5°	551.5	534.9	526.6	514.4	502.2
80°	411.8	407.4	399.1	386.9	378.6
82.5°	279.9	279.9	276.0	259.4	259.4
85°	168.6	164.6	160.7	148.0	144.1
87.5°	74.2	65.9	57.6	45.4	41.0
90°	2.3	27.5	74.8	70.2	72.5
92.5°	47.3	64.1	66.4	68.6	68.6
95°	111.4	132.7	136.5	136.5	132.7
97.5°	185.4	205.2	213.6	213.6	213.6
100°	270.8	288.3	294.4	294.4	292.1
102.5°	360.8	373.8	382.1	384.4	382.1
105°	459.2	465.3	469.9	473.7	473.7
107.5°	556.8	566.0	566.0	567.5	556.8
110°	651.4	663.6	663.6	663.6	657.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	753.6	766.6	764.3	758.2	753.6
115°	854.3	866.5	862.7	860.4	854.3
117.5°	954.2	971.0	960.3	954.2	948.1
120°	1054.9	1071.7	1054.9	1054.9	1048.0
122.5°	1146.4	1167.8	1157.1	1151.0	1146.4
125°	1242.5	1261.6	1255.5	1248.6	1246.4
127.5°	1336.4	1360.0	1351.6	1342.5	1336.4
130°	1424.1	1451.5	1447.7	1443.2	1434.8
132.5°	1522.5	1543.8	1545.4	1534.7	1528.6
135°	1607.1	1630.8	1635.4	1633.1	1627.0
137.5°	1701.7	1720.8	1724.6	1723.1	1713.9
140°	1784.9	1803.9	1814.6	1814.6	1806.2
142.5°	1870.3	1889.4	1895.5	1897.8	1889.4
145°	1951.2	1966.4	1978.6	1980.9	1972.5
147.5°	2023.6	2042.7	2051.8	2055.7	2047.3
150°	2098.4	2111.3	2119.7	2126.6	2119.7
152.5°	2164.7	2177.7	2188.4	2196.8	2188.4
155°	2231.1	2237.2	2244.1	2254.7	2247.9
157.5°	2288.3	2292.9	2296.7	2311.9	2301.3
160°	2339.4	2344.0	2346.3	2359.2	2350.1
162.5°	2386.7	2386.7	2389.0	2403.5	2392.8
165°	2427.1	2424.8	2424.8	2440.1	2429.4
167.5°	2463.7	2456.9	2456.9	2472.1	2461.4
170°	2491.2	2485.1	2482.8	2498.1	2485.1
172.5°	2510.3	2504.2	2501.9	2517.1	2504.2
175°	2525.5	2519.4	2514.8	2530.1	2517.1
177.5°	2533.9	2527.8	2523.2	2536.2	2523.2
180°	2530.1	2530.1	2530.1	2530.1	2530.1



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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	12.45	13.41	13.31	14.29	15.40	12.01	12.98	12.87	13.86	14.97
	3H	14.11	14.98	14.99	15.87	17.01	13.64	14.51	14.51	15.40	16.54
	4H	14.71	15.53	15.59	16.42	17.57	14.23	15.05	15.12	15.95	17.10
	6H	15.11	15.87	16.01	16.77	17.93	14.64	15.39	15.54	16.30	17.46
	8H	15.22	15.94	16.13	16.86	18.02	14.74	15.46	15.65	16.39	17.54
	12H	15.27	15.96	16.18	16.87	18.06	14.79	15.48	15.70	16.39	17.58
4H	2H	12.92	13.74	13.81	14.64	15.78	12.58	13.39	13.47	14.29	15.44
	3H	14.80	15.48	15.70	16.41	17.57	14.40	15.09	15.31	16.02	17.18
	4H	15.51	16.14	16.43	17.06	18.25	15.11	15.73	16.02	16.66	17.84
	6H	16.03	16.57	16.96	17.52	18.71	15.63	16.16	16.55	17.11	18.30
	8H	16.19	16.69	17.12	17.63	18.84	15.77	16.28	16.71	17.22	18.42
	12H	16.26	16.72	17.22	17.68	18.89	15.84	16.30	16.79	17.26	18.47
8H	4H	15.72	16.22	16.65	17.16	18.37	15.36	15.86	16.29	16.80	18.01
	6H	16.35	16.77	17.31	17.76	18.96	15.99	16.41	16.95	17.39	18.59
	8H	16.58	16.94	17.54	17.92	19.14	16.21	16.58	17.18	17.55	18.77
	12H	16.71	17.04	17.68	18.00	19.27	16.33	16.65	17.30	17.62	18.89
12H	4H	15.71	16.16	16.66	17.12	18.33	15.36	15.81	16.31	16.77	17.98
	6H	16.38	16.75	17.35	17.73	18.95	16.03	16.40	17.00	17.38	18.60
	8H	16.63	16.96	17.60	17.92	19.19	16.28	16.60	17.25	17.57	18.83