

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: P912796

Luminaire Tested: DFN2DIP-TR4F0-050D120US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912796
REPORT IS A COMBINATION OF REPORTS P900516 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D120US850-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

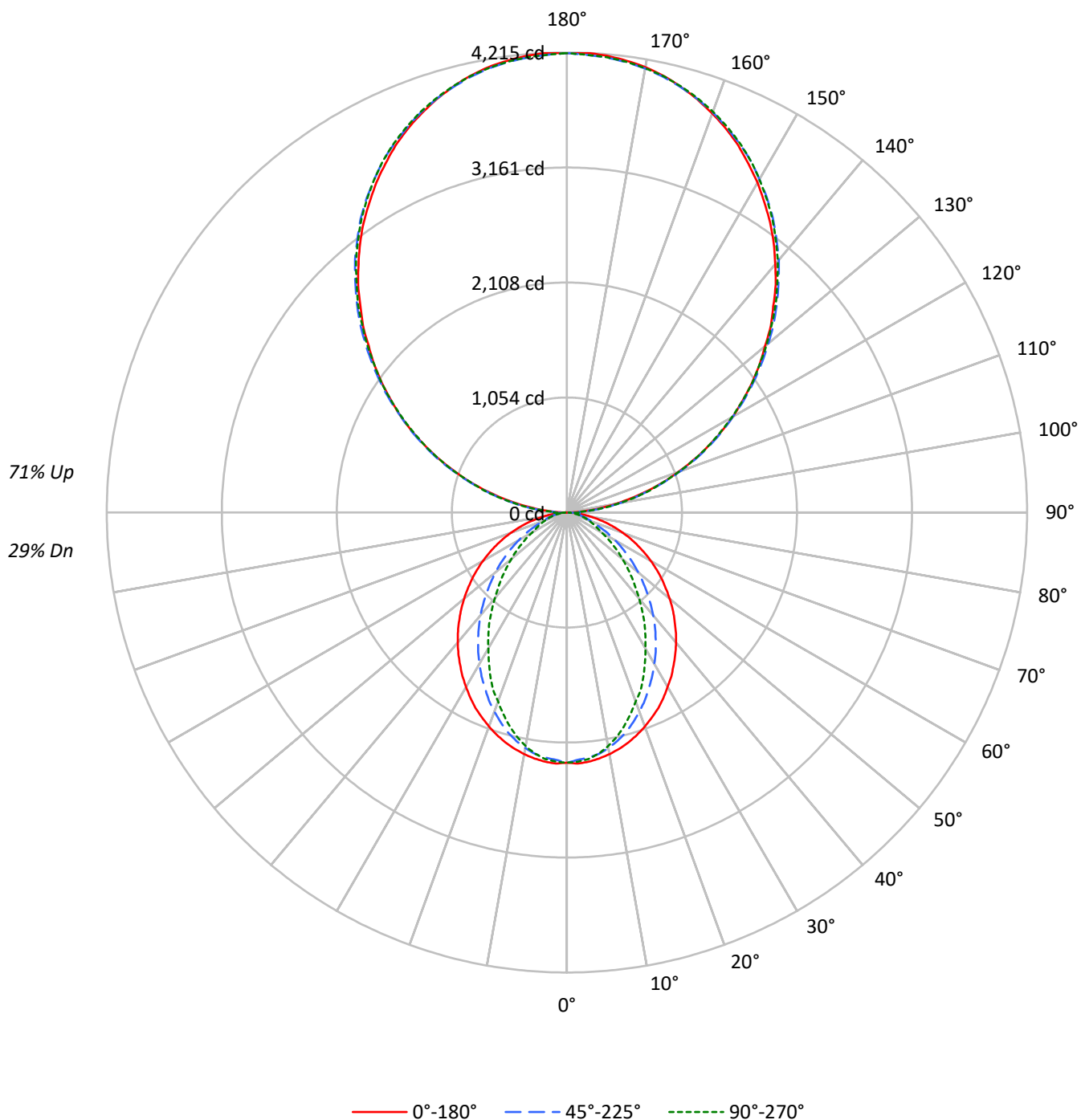
Lumens per Lamp: N/A
Luminaire Lumens: 16490.8 lumens
Efficiency: N/A
Efficacy: 123.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 133.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	102	102	102	102		91	91	91	91		71	71	71		53	53	53		37	37	37
1	93	89	86	82		83	80	77	74		63	61	59		47	46	45		33	32	31
2	85	78	72	68		76	70	65	61		55	52	49		42	40	38		29	28	27
3	78	69	62	56		69	62	56	51		49	45	42		37	34	32		26	24	23
4	71	61	54	48		64	55	49	44		44	39	36		33	30	28		23	22	20
5	65	54	47	41		58	49	42	38		39	34	31		30	27	24		21	19	18
6	60	49	41	36		54	44	37	33		35	30	27		27	24	21		19	17	16
7	56	44	36	31		50	40	33	29		32	27	24		25	21	19		18	16	14
8	52	40	32	27		46	36	30	25		29	24	21		22	19	17		16	14	13
9	48	36	29	24		43	33	27	22		27	22	19		21	17	15		15	13	11
10	45	33	26	22		40	30	24	20		24	20	17		19	16	14		14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1821	1821	1821
5°	1824	1792	1803
10°	1806	1757	1744
15°	1781	1699	1654
20°	1748	1618	1542
25°	1714	1529	1435
30°	1669	1437	1298
35°	1625	1338	1179
40°	1580	1235	1041
45°	1527	1122	917
50°	1473	1007	795
55°	1417	885	679
60°	1351	757	558
65°	1276	627	503
70°	1185	505	455
75°	1070	445	414
80°	904	374	358
85°	631	249	269

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 3280 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	1.3
10°-20°	589.6	3.6
20°-30°	827.8	5.0
30°-40°	902.4	5.5
40°-50°	829.4	5.0
50°-60°	651.3	3.9
60°-70°	424.0	2.6
70°-80°	218.2	1.3
80°-90°	67.7	0.4
90°-100°	260.4	1.6
100°-110°	827.5	5.0
110°-120°	1416.1	8.6
120°-130°	1862.4	11.3
130°-140°	2090.5	12.7
140°-150°	2050.0	12.4
150°-160°	1719.6	10.4
160°-170°	1140.4	6.9
170°-180°	398.6	2.4
0°-30°	1632.2	9.9
0°-40°	2534.6	15.4
0°-60°	4015.3	24.3
0°-90°	4725.2	28.7
90°-120°	2504.0	15.2
90°-150°	8506.9	51.6
90°-180°	11766.0	71.3
0°-180°	16490.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2281	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	4	46	124	117	120	16
95°	185	221	227	227	221	206
105°	764	774	782	788	788	806
115°	1421	1442	1435	1431	1421	1406
125°	2067	2099	2089	2077	2073	1847
135°	2674	2713	2720	2717	2706	2066
145°	3246	3271	3291	3295	3281	2028
155°	3711	3722	3733	3751	3739	1708
165°	4038	4034	4034	4059	4041	1139
175°	4201	4191	4184	4209	4187	399
180°	4209	4209	4209	4209	4209	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.7	2291.7	2291.7	2291.7	2291.7
2.5°	2302.1	2291.7	2268.9	2289.8	2285.5
5°	2291.7	2281.4	2254.4	2273.0	2266.9
7.5°	2273.0	2260.7	2231.6	2239.8	2229.4
10°	2248.2	2233.6	2192.3	2185.9	2173.5
12.5°	2217.1	2198.5	2142.4	2130.1	2107.1
15°	2179.7	2156.9	2086.5	2047.1	2026.4
17.5°	2136.2	2103.0	2015.8	1970.2	1937.0
20°	2086.5	2044.9	1941.2	1889.5	1843.7
22.5°	2032.6	1984.8	1864.5	1794.0	1763.0
25°	1978.6	1912.1	1775.3	1690.3	1659.1
27.5°	1914.4	1843.7	1692.3	1594.9	1547.2
30°	1845.9	1767.0	1601.1	1495.4	1439.3
32.5°	1779.5	1684.0	1514.1	1389.6	1337.7
35°	1704.9	1599.1	1416.6	1285.9	1240.2
37.5°	1632.2	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.8	1082.6	1028.7
42.5°	1476.7	1344.0	1134.5	980.9	929.2
45°	1393.8	1254.7	1037.0	889.6	839.8
47.5°	1314.9	1167.8	943.8	796.4	750.8
50°	1227.9	1080.6	852.5	709.2	665.8
52.5°	1142.7	987.1	765.3	628.5	589.1
55°	1059.8	898.0	673.9	549.6	510.3
57.5°	974.8	808.9	593.2	477.1	443.8
60°	887.6	721.7	508.0	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.5	547.5	360.9	290.4	284.1
67.5°	632.6	464.6	290.4	255.1	248.9
70°	545.5	383.7	240.5	219.8	211.5
72.5°	462.6	309.0	201.2	184.6	180.4
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.8	122.3	118.1
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.2	45.6	39.4	39.4	39.4
87.5°	33.3	16.5	16.5	14.5	14.5
90°	3.8	45.7	124.3	116.8	120.5
92.5°	78.6	106.6	110.3	114.2	114.2
95°	185.2	220.8	227.1	227.1	220.8
97.5°	308.3	341.4	355.3	355.3	355.3
100°	450.5	479.6	489.7	489.7	486.0
102.5°	600.2	621.7	635.7	639.6	635.7
105°	763.9	774.0	781.6	787.9	787.9
107.5°	926.2	941.5	941.5	944.0	926.2
110°	1083.6	1103.9	1103.9	1103.9	1093.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1253.6	1275.2	1271.4	1261.3	1253.6
115°	1421.1	1441.5	1435.0	1431.3	1421.1
117.5°	1587.3	1615.3	1597.5	1587.3	1577.2
120°	1754.9	1782.7	1754.9	1754.9	1743.5
122.5°	1907.1	1942.6	1924.9	1914.7	1907.1
125°	2067.0	2098.7	2088.6	2077.2	2073.3
127.5°	2223.1	2262.4	2248.4	2233.2	2223.1
130°	2368.9	2414.6	2408.3	2400.7	2386.7
132.5°	2532.6	2568.2	2570.7	2552.9	2542.8
135°	2673.5	2712.8	2720.5	2716.6	2706.5
137.5°	2830.8	2862.6	2868.9	2866.3	2851.1
140°	2969.1	3000.8	3018.6	3018.6	3004.6
142.5°	3111.3	3143.0	3153.1	3156.9	3143.0
145°	3245.7	3271.1	3291.4	3295.3	3281.3
147.5°	3366.3	3398.0	3413.3	3419.6	3405.6
150°	3490.7	3512.2	3526.2	3537.6	3526.2
152.5°	3601.0	3622.5	3640.4	3654.4	3640.4
155°	3711.4	3721.6	3733.0	3750.7	3739.3
157.5°	3806.6	3814.2	3820.5	3845.9	3828.2
160°	3891.6	3899.2	3903.0	3924.6	3909.3
162.5°	3970.2	3970.2	3974.1	3998.2	3980.4
165°	4037.5	4033.8	4033.8	4059.1	4041.3
167.5°	4098.4	4087.0	4087.0	4112.4	4094.6
170°	4144.1	4133.9	4130.1	4155.5	4133.9
172.5°	4175.8	4165.6	4161.9	4187.3	4165.6
175°	4201.2	4191.0	4183.5	4208.8	4187.3
177.5°	4215.2	4205.0	4197.3	4219.0	4197.3
180°	4208.8	4208.8	4208.8	4208.8	4208.8

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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	6.80	7.48	7.93	8.60	10.15	2.77	3.46	3.90	4.57	6.12
	3H	8.47	9.08	9.60	10.20	11.76	3.95	4.56	5.09	5.69	7.25
	4H	9.07	9.65	10.21	10.77	12.34	4.40	4.97	5.54	6.10	7.67
	6H	9.48	10.01	10.63	11.14	12.72	4.71	5.24	5.86	6.37	7.95
	8H	9.60	10.11	10.76	11.25	12.82	4.80	5.30	5.95	6.44	8.02
	12H	9.66	10.14	10.82	11.28	12.87	4.84	5.32	5.99	6.45	8.05
4H	2H	6.80	7.38	7.95	8.50	10.07	3.35	3.93	4.50	5.05	6.62
	3H	8.62	9.10	9.77	10.25	11.83	4.69	5.17	5.84	6.32	7.90
	4H	9.30	9.74	10.46	10.88	12.48	5.23	5.67	6.39	6.81	8.41
	6H	9.81	10.19	10.97	11.35	12.94	5.64	6.02	6.81	7.18	8.77
	8H	9.98	10.33	11.14	11.49	13.10	5.77	6.12	6.93	7.28	8.88
	12H	10.07	10.39	11.25	11.55	13.17	5.83	6.15	7.01	7.31	8.93
8H	4H	9.26	9.61	10.42	10.76	12.37	5.50	5.85	6.66	7.01	8.61
	6H	9.82	10.11	11.00	11.31	12.91	6.01	6.30	7.20	7.50	9.11
	8H	10.03	10.29	11.22	11.46	13.09	6.20	6.46	7.39	7.63	9.26
	12H	10.17	10.39	11.36	11.56	13.22	6.32	6.54	7.51	7.71	9.37
12H	4H	9.20	9.52	10.38	10.69	12.30	5.50	5.82	6.68	6.98	8.60
	6H	9.79	10.05	10.98	11.22	12.85	6.06	6.32	7.25	7.49	9.12
	8H	10.01	10.23	11.20	11.40	13.06	6.27	6.49	7.46	7.66	9.32

END OF REPORT