

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: P912797

Luminaire Tested: DFN2DIP-TR4F0-050D120US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912797
REPORT IS A COMBINATION OF REPORTS P902036 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D120US850-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

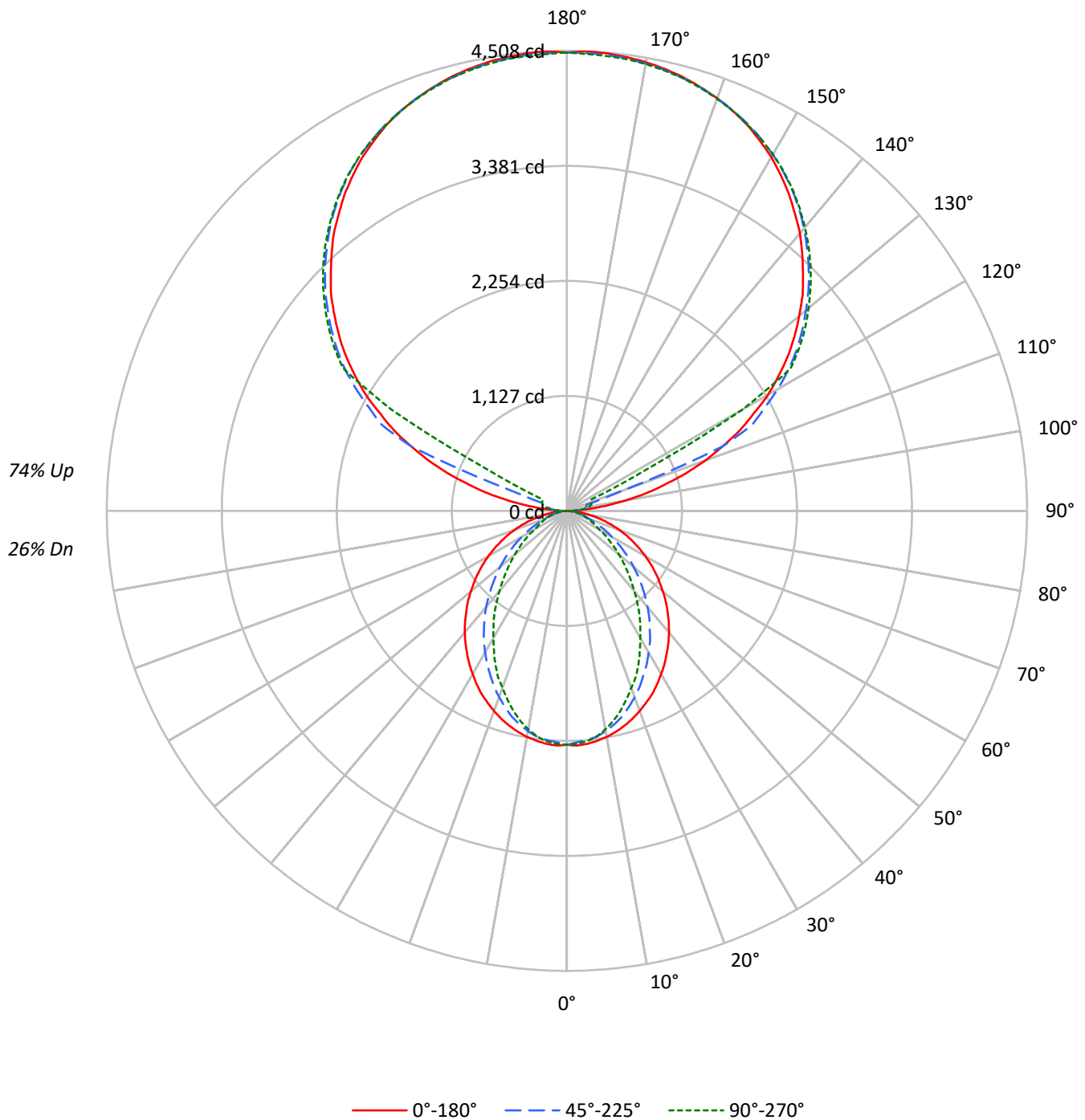
Lumens per Lamp: N/A
Luminaire Lumens: 17888.2 lumens
Efficiency: N/A
Efficacy: 134.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

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	70	70	70	52	52	52	34	34	34
1	93	89	85	82	83	79	76	74	62	60	58	46	44	43	31	30	29
2	85	78	72	67	75	70	65	61	54	51	48	40	38	36	27	26	25
3	77	68	62	56	69	61	56	51	48	44	41	36	33	31	24	23	22
4	71	61	53	47	63	54	48	43	43	38	35	32	29	27	22	20	19
5	65	54	46	41	58	49	42	37	38	34	30	29	26	23	20	18	17
6	60	48	41	35	53	44	37	32	35	30	26	26	23	20	18	16	15
7	55	44	36	31	49	39	33	28	31	27	23	24	20	18	17	15	13
8	51	39	32	27	46	36	29	25	28	24	20	22	18	16	15	13	12
9	48	36	29	24	42	33	26	22	26	21	18	20	17	14	14	12	11
10	44	33	26	21	40	30	24	20	24	19	16	18	15	13	13	11	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: 2384 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	1.2
10°-20°	589.6	3.3
20°-30°	827.8	4.6
30°-40°	902.4	5.0
40°-50°	829.4	4.6
50°-60°	651.3	3.6
60°-70°	424.0	2.4
70°-80°	218.2	1.2
80°-90°	63.6	0.4
90°-100°	148.1	0.8
100°-110°	552.1	3.1
110°-120°	1464.2	8.2
120°-130°	2428.5	13.6
130°-140°	2579.6	14.4
140°-150°	2397.5	13.4
150°-160°	1927.5	10.8
160°-170°	1242.0	6.9
170°-180°	427.5	2.4
0°-30°	1632.2	9.1
0°-40°	2534.6	14.2
0°-60°	4015.3	22.4
0°-90°	4721.2	26.4
90°-120°	2164.4	12.1
90°-150°	9570.0	53.5
90°-180°	13167.0	73.6
0°-180°	17888.2	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°	3	39	65	81	88	17
95°	211	104	126	143	140	250
105°	988	1086	198	234	247	1056
115°	1869	1924	2005	500	267	1840
125°	2642	2684	2746	2769	2779	2356
135°	3269	3322	3350	3383	3377	2526
145°	3793	3789	3844	3867	3851	2372
155°	4176	4147	4186	4205	4180	1924
165°	4400	4381	4390	4413	4390	1243
175°	4501	4478	4485	4508	4475	428
180°	4491	4491	4491	4491	4491	

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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°	3.1	38.9	64.9	81.4	87.6
92.5°	81.4	68.3	78.0	84.5	87.6
95°	211.0	103.8	126.5	143.2	139.7
97.5°	380.2	113.9	165.6	175.6	178.7
100°	575.3	130.1	185.2	211.0	217.7
102.5°	789.6	783.4	191.7	227.3	237.3
105°	987.9	1085.6	198.4	233.9	247.0
107.5°	1218.7	1299.7	204.9	240.4	253.5
110°	1439.8	1507.8	568.8	243.9	256.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1647.9	1706.1	1651.0	250.1	260.1
115°	1868.6	1923.8	2005.2	500.5	266.7
117.5°	2060.4	2125.3	2180.8	1715.7	864.5
120°	2275.0	2323.6	2382.2	2421.3	1982.4
122.5°	2456.8	2508.9	2574.1	2593.4	2596.8
125°	2642.0	2684.4	2746.2	2769.0	2778.6
127.5°	2811.0	2856.6	2905.6	2938.0	2941.1
130°	2970.3	3022.5	3058.0	3093.9	3090.8
132.5°	3132.8	3175.3	3210.8	3240.2	3237.1
135°	3269.4	3321.6	3350.5	3383.3	3376.8
137.5°	3412.3	3451.2	3484.0	3516.4	3506.8
140°	3552.0	3578.2	3613.7	3643.1	3626.9
142.5°	3669.2	3692.1	3734.1	3760.0	3743.8
145°	3792.8	3789.3	3844.5	3867.3	3851.0
147.5°	3899.7	3890.0	3945.3	3961.5	3948.7
150°	4003.8	3981.1	4033.2	4052.5	4036.3
152.5°	4091.4	4065.6	4114.3	4133.9	4111.2
155°	4175.9	4147.0	4186.0	4205.3	4179.5
157.5°	4244.3	4218.4	4247.8	4270.5	4244.3
160°	4302.9	4283.3	4302.9	4322.2	4299.5
162.5°	4354.7	4335.4	4351.6	4374.3	4345.1
165°	4400.2	4380.9	4390.5	4413.4	4390.5
167.5°	4436.1	4416.4	4426.5	4449.2	4419.9
170°	4465.4	4445.8	4452.3	4475.0	4445.8
172.5°	4484.7	4465.4	4472.0	4494.8	4465.4
175°	4500.9	4478.1	4484.7	4507.5	4475.0
177.5°	4507.5	4484.7	4488.2	4511.0	4481.7
180°	4491.3	4491.3	4491.3	4491.3	4491.3

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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	6.47	7.14	7.61	8.27	9.84	2.44	3.11	3.59	4.24	5.81
	3H	8.13	8.73	9.28	9.87	11.46	3.62	4.22	4.77	5.35	6.94
	4H	8.74	9.30	9.89	10.44	12.03	4.06	4.63	5.22	5.77	7.36
	6H	9.15	9.67	10.31	10.81	12.42	4.38	4.90	5.54	6.04	7.64
	8H	9.27	9.77	10.44	10.92	12.52	4.46	4.96	5.63	6.11	7.71
	12H	9.33	9.80	10.50	10.94	12.57	4.50	4.97	5.67	6.12	7.74
4H	2H	6.47	7.04	7.63	8.17	9.77	3.02	3.59	4.18	4.72	6.32
	3H	8.28	8.75	9.45	9.92	11.52	4.36	4.83	5.52	5.99	7.60
	4H	8.97	9.40	10.14	10.55	12.18	4.90	5.33	6.07	6.48	8.11
	6H	9.47	9.85	10.65	11.02	12.63	5.31	5.68	6.49	6.85	8.47
	8H	9.65	9.99	10.82	11.16	12.79	5.43	5.78	6.61	6.95	8.58
	12H	9.73	10.05	10.92	11.22	12.86	5.49	5.81	6.68	6.98	8.62
8H	4H	8.92	9.27	10.10	10.44	12.07	5.17	5.51	6.34	6.68	8.31
	6H	9.48	9.77	10.68	10.98	12.61	5.68	5.96	6.87	7.17	8.80
	8H	9.70	9.95	10.90	11.13	12.78	5.87	6.12	7.07	7.30	8.95
	12H	9.83	10.05	11.04	11.23	12.91	5.98	6.20	7.19	7.38	9.06
12H	4H	8.87	9.18	10.06	10.36	12.00	5.16	5.48	6.35	6.65	8.29
	6H	9.46	9.71	10.66	10.89	12.54	5.73	5.98	6.93	7.16	8.81
	8H	9.67	9.89	10.88	11.07	12.75	5.93	6.15	7.13	7.33	9.01

END OF REPORT