

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: P920862

Luminaire Tested: DFN2DIP-TR3F0-080D040US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920862
REPORT IS A COMBINATION OF REPORTS P900295 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-080D040US935-FLLFLL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

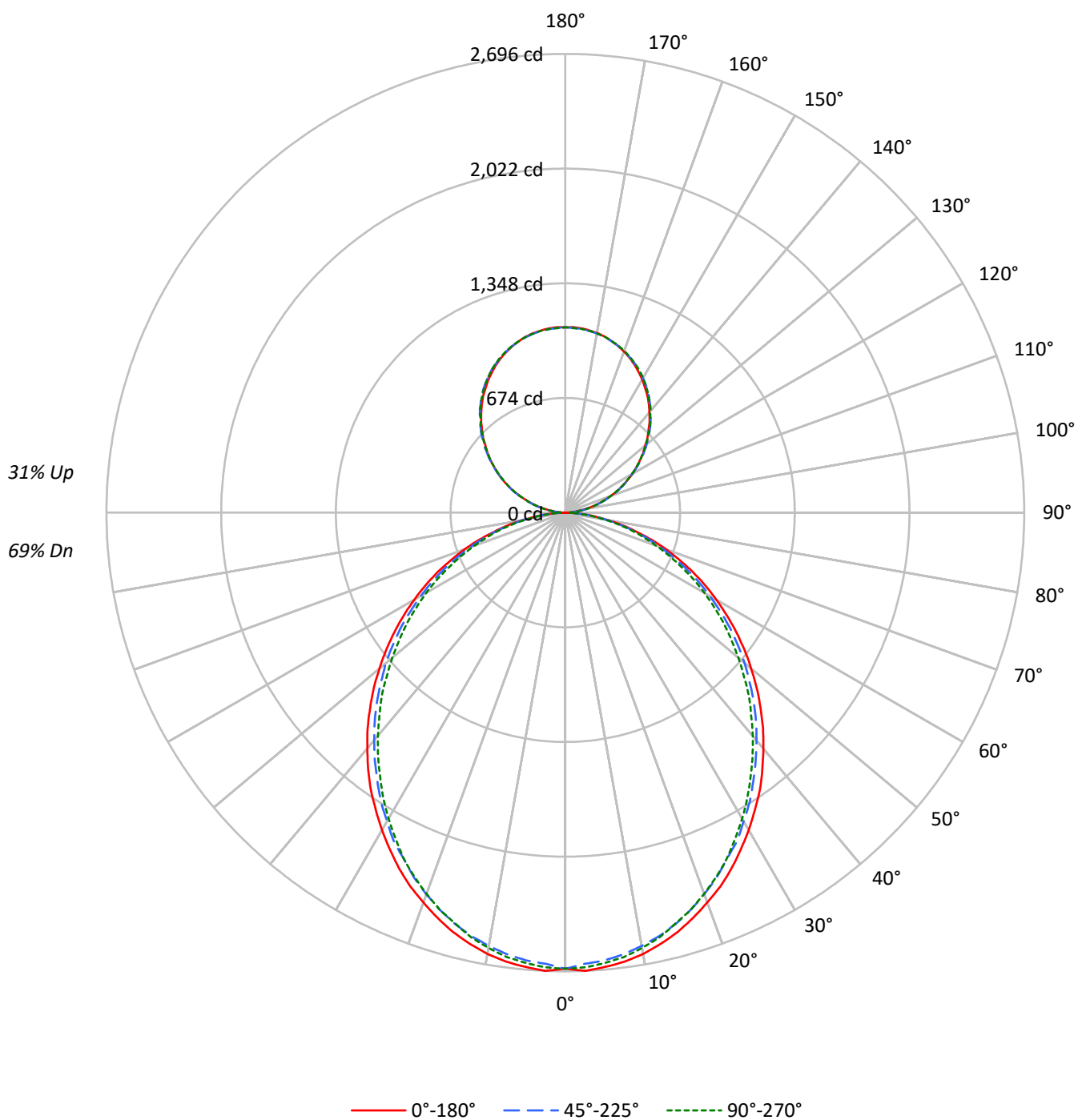
Lumens per Lamp: N/A
Luminaire Lumens: 9867.0 lumens
Efficiency: N/A
Efficacy: 89.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 110.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
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	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74
1	102	98	94	90	96	92	89	86	83	80	77	74	71	70	65	64	62
2	93	85	79	74	88	81	75	70	72	68	64	65	61	58	57	55	52
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	48	45
4	78	67	58	52	73	63	56	50	57	51	46	51	46	42	46	42	39
5	71	59	51	45	67	56	49	43	51	45	40	46	41	37	41	37	34
6	66	53	45	39	62	51	43	38	46	40	35	41	36	32	37	33	30
7	61	48	40	34	58	46	39	33	42	36	31	38	33	29	34	30	26
8	57	44	36	31	54	42	35	30	38	32	28	35	29	26	31	27	24
9	53	40	33	27	50	39	31	26	35	29	25	32	27	23	29	25	21
10	50	37	30	25	47	36	29	24	32	27	22	30	25	21	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3340	3340	3340
5°	3343	3290	3313
10°	3314	3243	3266
15°	3264	3187	3194
20°	3196	3110	3120
25°	3129	3019	3035
30°	3045	2933	2927
35°	2965	2833	2813
40°	2867	2732	2705
45°	2769	2630	2594
50°	2662	2523	2465
55°	2550	2399	2347
60°	2423	2253	2211
65°	2285	2101	2051
70°	2108	1915	1878
75°	1864	1692	1715
80°	1569	1408	1409
85°	1109	928	910

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2769 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	252.3	2.6
10°-20°	709.8	7.2
20°-30°	1043.1	10.6
30°-40°	1211.4	12.3
40°-50°	1209.9	12.3
50°-60°	1055.0	10.7
60°-70°	779.9	7.9
70°-80°	441.2	4.5
80°-90°	119.6	1.2
90°-100°	67.4	0.7
100°-110°	214.2	2.2
110°-120°	366.5	3.7
120°-130°	482.0	4.9
130°-140°	541.0	5.5
140°-150°	530.5	5.4
150°-160°	445.0	4.5
160°-170°	295.1	3.0
170°-180°	103.2	1.0
0°-30°	2005.1	20.3
0°-40°	3216.5	32.6
0°-60°	5481.5	55.6
0°-90°	6822.2	69.1
90°-120°	648.0	6.6
90°-150°	2201.5	22.3
90°-180°	3045.0	30.9
0°-180°	9867.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2680	2680	2680	2680	2680	
5°	2680	2670	2642	2662	2657	254
15°	2551	2536	2502	2513	2500	719
25°	2309	2289	2245	2250	2245	1063
35°	1992	1966	1925	1910	1897	1244
45°	1621	1603	1564	1536	1526	1251
55°	1227	1211	1180	1150	1137	1097
65°	827	812	786	763	750	818
75°	433	428	415	400	405	462
85°	106	103	101	93	90	118
90°	1	12	32	30	31	9
95°	48	57	59	59	57	53
105°	198	200	202	204	204	209
115°	368	373	371	370	368	364
125°	535	543	540	538	537	478
135°	692	702	704	703	700	535
145°	840	846	852	853	849	525
155°	960	963	966	971	968	442
165°	1045	1044	1044	1050	1046	295
175°	1087	1085	1083	1089	1084	103
180°	1089	1089	1089	1089	1089	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2680.1	2680.1	2680.1	2680.1	2680.1
2.5°	2695.7	2682.9	2654.5	2680.1	2675.2
5°	2680.1	2670.0	2641.6	2662.1	2657.2
7.5°	2662.1	2646.8	2618.4	2639.1	2634.0
10°	2634.0	2615.9	2585.0	2605.5	2597.9
12.5°	2595.1	2579.8	2548.9	2561.7	2556.6
15°	2551.4	2536.1	2502.4	2512.8	2500.0
17.5°	2497.2	2481.9	2448.2	2461.2	2448.2
20°	2437.9	2422.6	2386.5	2394.2	2384.0
22.5°	2378.9	2355.6	2321.9	2321.9	2316.8
25°	2309.1	2288.6	2244.9	2249.8	2244.9
27.5°	2231.7	2213.7	2180.3	2172.6	2159.8
30°	2154.6	2133.8	2095.3	2087.7	2077.2
32.5°	2072.1	2056.8	2015.4	1999.8	1989.5
35°	1992.2	1966.5	1925.2	1909.6	1896.8
37.5°	1901.9	1878.7	1837.5	1819.4	1806.5
40°	1809.3	1788.5	1747.2	1724.2	1713.8
42.5°	1719.1	1698.2	1657.2	1631.2	1616.0
45°	1621.2	1603.1	1564.3	1536.1	1525.8
47.5°	1525.8	1507.7	1466.4	1438.0	1422.6
50°	1425.1	1412.3	1376.1	1340.1	1327.2
52.5°	1327.2	1309.1	1275.8	1247.4	1229.3
55°	1226.8	1211.3	1180.4	1149.5	1136.6
57.5°	1126.3	1113.4	1079.8	1048.9	1038.4
60°	1025.6	1015.5	979.4	951.0	943.3
62.5°	927.7	909.7	884.0	858.3	847.9
65°	827.4	811.8	786.1	762.8	750.0
67.5°	724.3	711.2	688.2	670.2	659.8
70°	628.9	618.5	595.3	577.2	567.1
72.5°	531.0	520.6	507.7	489.7	482.1
75°	432.8	427.9	414.8	399.5	404.7
77.5°	345.3	334.9	329.8	322.1	314.4
80°	257.9	255.1	249.9	242.3	237.0
82.5°	175.3	175.3	172.8	162.4	162.4
85°	105.6	103.1	100.7	92.7	90.2
87.5°	46.5	41.3	36.1	28.4	25.7
90°	0.9	11.8	32.2	30.2	31.2
92.5°	20.3	27.6	28.6	29.5	29.5
95°	48.0	57.2	58.8	58.8	57.2
97.5°	79.8	88.3	92.0	92.0	92.0
100°	116.6	124.2	126.7	126.7	125.8
102.5°	155.3	160.9	164.5	165.5	164.5
105°	197.7	200.3	202.2	203.9	203.9
107.5°	239.7	243.7	243.7	244.3	239.7
110°	280.4	285.7	285.7	285.7	283.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	324.4	330.0	329.0	326.4	324.4
115°	367.7	373.1	371.3	370.4	367.7
117.5°	410.8	418.0	413.5	410.8	408.2
120°	454.2	461.3	454.2	454.2	451.2
122.5°	493.5	502.7	498.2	495.5	493.5
125°	534.9	543.1	540.5	537.5	536.6
127.5°	575.3	585.5	581.9	577.9	575.3
130°	613.0	624.9	623.3	621.3	617.7
132.5°	655.4	664.6	665.3	660.6	658.1
135°	691.9	702.1	704.0	703.0	700.4
137.5°	732.6	740.8	742.4	741.7	737.9
140°	768.4	776.6	781.2	781.2	777.6
142.5°	805.2	813.4	816.0	817.0	813.4
145°	840.0	846.5	851.8	852.8	849.2
147.5°	871.2	879.3	883.3	884.9	881.3
150°	903.4	909.0	912.6	915.5	912.6
152.5°	931.9	937.5	942.1	945.7	942.1
155°	960.4	963.1	966.0	970.7	967.7
157.5°	985.2	987.0	988.7	995.3	990.7
160°	1007.1	1009.1	1010.0	1015.6	1011.7
162.5°	1027.4	1027.4	1028.5	1034.7	1030.1
165°	1044.9	1043.9	1043.9	1050.4	1045.9
167.5°	1060.7	1057.6	1057.6	1064.3	1059.6
170°	1072.5	1069.8	1068.8	1075.4	1069.8
172.5°	1080.6	1078.1	1077.0	1083.7	1078.1
175°	1087.3	1084.6	1082.6	1089.2	1083.7
177.5°	1090.9	1088.2	1086.2	1091.8	1086.2
180°	1089.2	1089.2	1089.2	1089.2	1089.2

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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	13.01	14.08	13.79	14.87	15.84	12.58	13.65	13.36	14.44	15.41
	3H	14.68	15.63	15.47	16.44	17.44	14.21	15.17	15.00	15.97	16.97
	4H	15.27	16.17	16.07	16.99	18.00	14.80	15.70	15.61	16.52	17.53
	6H	15.67	16.51	16.49	17.33	18.35	15.20	16.04	16.02	16.86	17.88
	8H	15.78	16.57	16.60	17.41	18.44	15.31	16.10	16.14	16.95	17.97
	12H	15.83	16.59	16.66	17.42	18.47	15.36	16.11	16.19	16.95	18.00
4H	2H	13.49	14.40	14.30	15.21	16.22	13.15	14.06	13.96	14.87	15.88
	3H	15.37	16.12	16.19	16.97	18.00	14.98	15.73	15.80	16.58	17.61
	4H	16.08	16.77	16.92	17.62	18.67	15.68	16.37	16.52	17.21	18.27
	6H	16.60	17.20	17.45	18.07	19.12	16.20	16.79	17.05	17.66	18.72
	8H	16.75	17.31	17.60	18.17	19.24	16.34	16.90	17.20	17.77	18.84
	12H	16.83	17.33	17.70	18.22	19.29	16.41	16.91	17.29	17.80	18.88
8H	4H	16.29	16.85	17.15	17.71	18.78	15.94	16.49	16.79	17.36	18.43
	6H	16.92	17.38	17.80	18.29	19.36	16.56	17.02	17.44	17.93	19.00
	8H	17.14	17.55	18.03	18.45	19.54	16.77	17.18	17.67	18.08	19.17
	12H	17.27	17.63	18.17	18.53	19.67	16.89	17.25	17.79	18.15	19.29
12H	4H	16.29	16.79	17.16	17.67	18.75	15.94	16.44	16.81	17.32	18.40
	6H	16.95	17.36	17.84	18.26	19.35	16.60	17.01	17.50	17.91	19.00
	8H	17.20	17.56	18.09	18.45	19.59	16.84	17.20	17.74	18.10	19.24