

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: P907190

Luminaire Tested: DFN2DIP-TR3F0-060D090US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907190
REPORT IS A COMBINATION OF REPORTS P900361 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-060D090US835-FLLFLL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

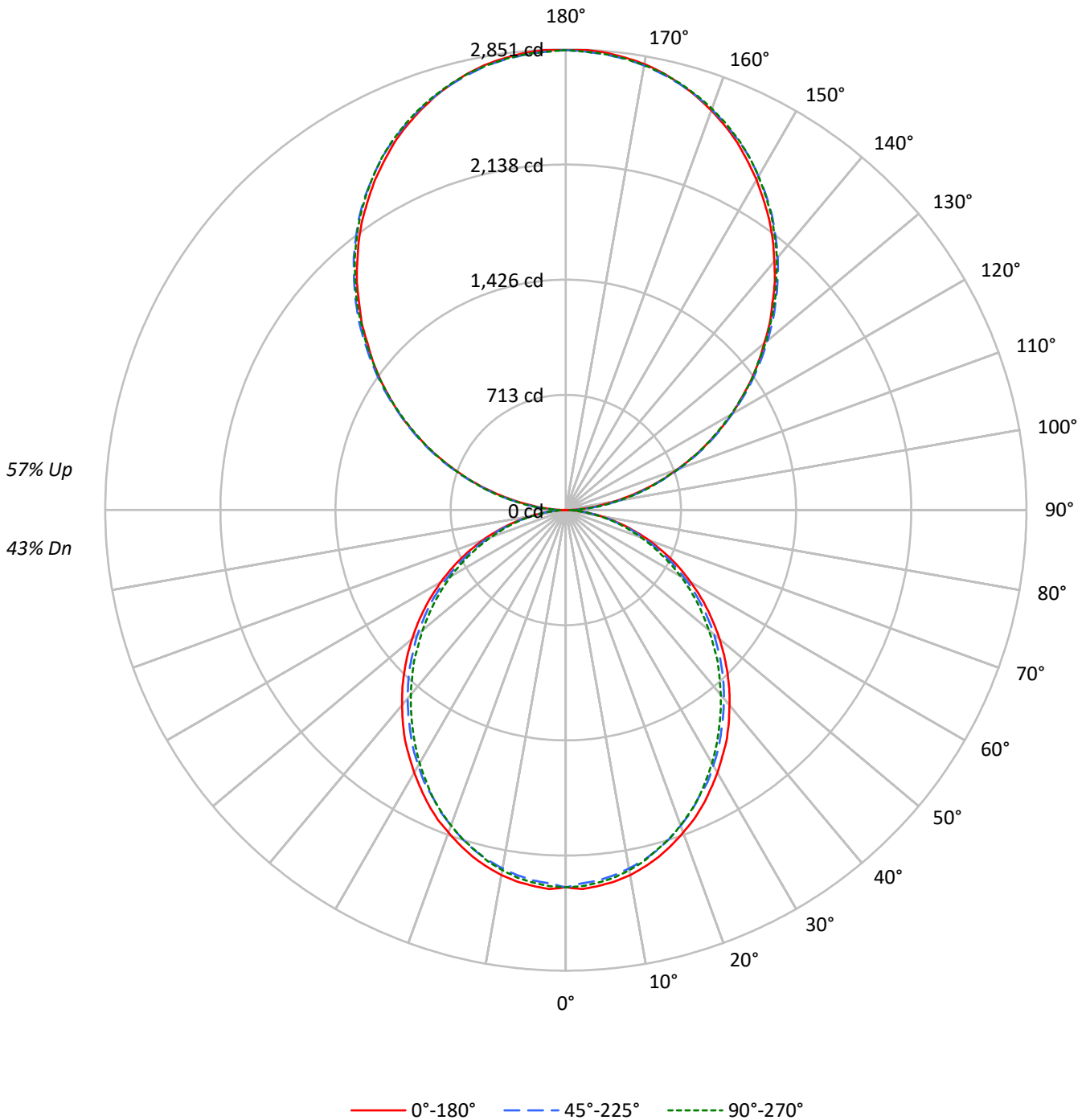
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13905.0 lumens
Efficiency: N/A
Efficacy: 108.4 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: General Diffuse

Input Watts (W): 128.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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				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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49	49	49	49	43
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	44	43	42	42	42	42	36
2	88	80	74	69	80	73	68	64	61	57	54	49	47	44	38	37	35	35	35	35	30
3	80	70	63	57	73	65	58	53	54	49	45	44	40	37	34	32	30	30	30	30	26
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	30	28	26	26	26	26	22
5	67	56	47	42	61	51	44	39	43	37	33	35	31	28	27	25	22	22	22	22	19
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20	20	20	20	17
7	57	45	37	31	52	41	34	29	35	29	25	29	24	21	23	20	18	18	18	18	15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16	16	16	16	13
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14	14	14	14	12
10	46	34	27	22	42	31	25	21	27	22	18	22	18	15	18	15	13	13	13	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2909	2909	2909
5°	2912	2866	2886
10°	2887	2825	2845
15°	2843	2776	2782
20°	2784	2709	2718
25°	2725	2629	2643
30°	2652	2555	2550
35°	2583	2468	2451
40°	2497	2379	2356
45°	2412	2291	2259
50°	2319	2198	2148
55°	2221	2090	2044
60°	2111	1962	1926
65°	1990	1830	1786
70°	1836	1668	1636
75°	1623	1474	1493
80°	1366	1227	1227
85°	965	807	793

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2778 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.7	1.6
10°-20°	618.3	4.4
20°-30°	908.6	6.5
30°-40°	1055.3	7.6
40°-50°	1054.0	7.6
50°-60°	919.0	6.6
60°-70°	679.4	4.9
70°-80°	384.4	2.8
80°-90°	109.5	0.8
90°-100°	176.1	1.3
100°-110°	559.6	4.0
110°-120°	957.7	6.9
120°-130°	1259.5	9.1
130°-140°	1413.8	10.2
140°-150°	1386.4	10.0
150°-160°	1163.0	8.4
160°-170°	771.2	5.5
170°-180°	269.6	1.9
0°-30°	1746.6	12.6
0°-40°	2801.8	20.1
0°-60°	4774.8	34.3
0°-90°	5948.1	42.8
90°-120°	1693.5	12.2
90°-150°	5753.1	41.4
90°-180°	7957.0	57.2
0°-180°	13905.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2335	2335	2335	2335	2335	
5°	2335	2326	2301	2319	2315	222
15°	2222	2209	2180	2189	2178	626
25°	2011	1994	1955	1960	1955	926
35°	1735	1713	1677	1663	1652	1084
45°	1412	1396	1363	1338	1329	1090
55°	1069	1055	1028	1001	990	955
65°	721	707	685	664	653	713
75°	377	373	361	348	352	402
85°	92	90	88	81	79	103
90°	3	31	84	79	82	14
95°	125	149	154	154	149	139
105°	517	523	529	533	533	545
115°	961	975	970	968	961	951
125°	1398	1419	1412	1405	1402	1249
135°	1808	1835	1840	1837	1830	1398
145°	2195	2212	2226	2228	2219	1372
155°	2510	2517	2525	2537	2529	1155
165°	2730	2728	2728	2745	2733	770
175°	2841	2834	2829	2846	2832	270
180°	2846	2846	2846	2846	2846	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2334.6	2334.6	2334.6	2334.6	2334.6
2.5°	2348.2	2337.0	2312.2	2334.6	2330.3
5°	2334.6	2325.8	2301.0	2318.9	2314.6
7.5°	2318.9	2305.6	2280.8	2298.9	2294.4
10°	2294.4	2278.7	2251.7	2269.6	2262.9
12.5°	2260.6	2247.2	2220.3	2231.5	2227.0
15°	2222.4	2209.1	2179.8	2188.9	2177.7
17.5°	2175.3	2162.0	2132.7	2143.8	2132.7
20°	2123.6	2110.3	2078.8	2085.5	2076.7
22.5°	2072.2	2051.9	2022.6	2022.6	2018.1
25°	2011.4	1993.6	1955.4	1959.7	1955.4
27.5°	1944.0	1928.3	1899.2	1892.6	1881.4
30°	1876.9	1858.7	1825.2	1818.5	1809.4
32.5°	1804.9	1791.6	1755.6	1742.0	1733.0
35°	1735.4	1713.0	1677.0	1663.4	1652.2
37.5°	1656.8	1636.5	1600.6	1584.8	1573.6
40°	1576.0	1557.9	1522.0	1502.0	1492.9
42.5°	1497.4	1479.3	1443.6	1421.0	1407.6
45°	1412.2	1396.4	1362.6	1338.1	1329.0
47.5°	1329.0	1313.3	1277.4	1252.6	1239.2
50°	1241.4	1230.2	1198.8	1167.3	1156.1
52.5°	1156.1	1140.4	1111.3	1086.6	1070.9
55°	1068.7	1055.1	1028.2	1001.3	990.1
57.5°	981.1	969.9	940.6	913.7	904.6
60°	893.4	884.6	853.2	828.4	821.7
62.5°	808.1	792.4	770.0	747.6	738.6
65°	720.7	707.2	684.8	664.5	653.3
67.5°	630.9	619.5	599.5	583.8	574.7
70°	547.8	538.8	518.5	502.8	494.0
72.5°	462.5	453.5	442.3	426.6	419.9
75°	377.0	372.8	361.3	348.0	352.5
77.5°	300.8	291.8	287.2	280.6	273.9
80°	224.6	222.2	217.7	211.0	206.5
82.5°	152.7	152.7	150.5	141.5	141.5
85°	91.9	89.8	87.6	80.7	78.6
87.5°	40.5	36.0	31.4	24.8	22.4
90°	2.6	30.9	84.1	78.9	81.5
92.5°	53.2	72.1	74.7	77.2	77.2
95°	125.3	149.3	153.6	153.6	149.3
97.5°	208.5	230.8	240.3	240.3	240.3
100°	304.6	324.4	331.2	331.2	328.7
102.5°	405.9	420.5	429.9	432.5	429.9
105°	516.6	523.4	528.6	532.9	532.9
107.5°	626.4	636.7	636.7	638.4	626.4
110°	732.8	746.6	746.6	746.6	739.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	847.8	862.4	859.8	853.0	847.8
115°	961.1	974.8	970.5	968.0	961.1
117.5°	1073.5	1092.4	1080.4	1073.5	1066.6
120°	1186.8	1205.6	1186.8	1186.8	1179.0
122.5°	1289.7	1313.8	1301.8	1294.9	1289.7
125°	1397.9	1419.3	1412.5	1404.7	1402.2
127.5°	1503.4	1530.0	1520.6	1510.3	1503.4
130°	1602.1	1633.0	1628.7	1623.5	1614.1
132.5°	1712.8	1736.8	1738.5	1726.5	1719.7
135°	1808.0	1834.6	1839.8	1837.2	1830.4
137.5°	1914.4	1935.9	1940.2	1938.5	1928.2
140°	2008.0	2029.4	2041.4	2041.4	2032.0
142.5°	2104.1	2125.5	2132.4	2135.0	2125.5
145°	2195.1	2212.2	2225.9	2228.5	2219.1
147.5°	2276.6	2298.0	2308.3	2312.6	2303.2
150°	2360.7	2375.3	2384.7	2392.4	2384.7
152.5°	2435.3	2449.9	2461.9	2471.4	2461.9
155°	2510.0	2516.8	2524.6	2536.6	2528.9
157.5°	2574.3	2579.5	2583.8	2600.9	2588.9
160°	2631.8	2637.0	2639.6	2654.1	2643.8
162.5°	2685.0	2685.0	2687.6	2703.9	2691.9
165°	2730.5	2727.9	2727.9	2745.1	2733.1
167.5°	2771.7	2764.0	2764.0	2781.1	2769.1
170°	2802.6	2795.7	2793.2	2810.3	2795.7
172.5°	2824.0	2817.2	2814.6	2831.8	2817.2
175°	2841.2	2834.3	2829.2	2846.4	2831.8
177.5°	2850.6	2843.8	2838.6	2853.2	2838.6
180°	2846.4	2846.4	2846.4	2846.4	2846.4



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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	10.22	11.02	11.24	12.05	13.42	9.79	10.59	10.81	11.62	12.99
	3H	11.87	12.59	12.90	13.62	15.01	11.40	12.12	12.43	13.15	14.54
	4H	12.45	13.13	13.49	14.16	15.56	11.98	12.66	13.02	13.70	15.09
	6H	12.84	13.46	13.89	14.50	15.91	12.37	12.99	13.42	14.03	15.44
	8H	12.94	13.53	13.99	14.59	15.99	12.47	13.06	13.52	14.12	15.53
	12H	12.98	13.54	14.04	14.60	16.03	12.50	13.07	13.56	14.12	15.55
4H	2H	10.67	11.35	11.72	12.39	13.79	10.33	11.01	11.38	12.05	13.45
	3H	12.52	13.09	13.58	14.15	15.57	12.13	12.70	13.19	13.77	15.18
	4H	13.23	13.75	14.29	14.80	16.24	12.83	13.35	13.89	14.40	15.83
	6H	13.73	14.18	14.80	15.26	16.68	13.33	13.77	14.39	14.85	16.28
	8H	13.87	14.29	14.94	15.36	16.81	13.47	13.88	14.54	14.96	16.40
	12H	13.94	14.32	15.03	15.40	16.85	13.52	13.90	14.61	14.99	16.44
8H	4H	13.41	13.83	14.48	14.90	16.35	13.06	13.47	14.13	14.55	15.99
	6H	14.03	14.38	15.12	15.49	16.93	13.67	14.02	14.77	15.13	16.57
	8H	14.25	14.55	15.35	15.65	17.11	13.88	14.18	14.98	15.28	16.74
	12H	14.37	14.63	15.47	15.73	17.23	13.99	14.26	15.09	15.35	16.85
12H	4H	13.40	13.77	14.48	14.86	16.31	13.05	13.42	14.13	14.51	15.96
	6H	14.06	14.36	15.16	15.46	16.92	13.71	14.01	14.81	15.11	16.57
	8H	14.29	14.56	15.40	15.65	17.15	13.94	14.21	15.04	15.30	16.80