

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: P904698

Luminaire Tested: DFN2DIP-TR4F0-080D070US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904698
REPORT IS A COMBINATION OF REPORTS P900431 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-080D070US830-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

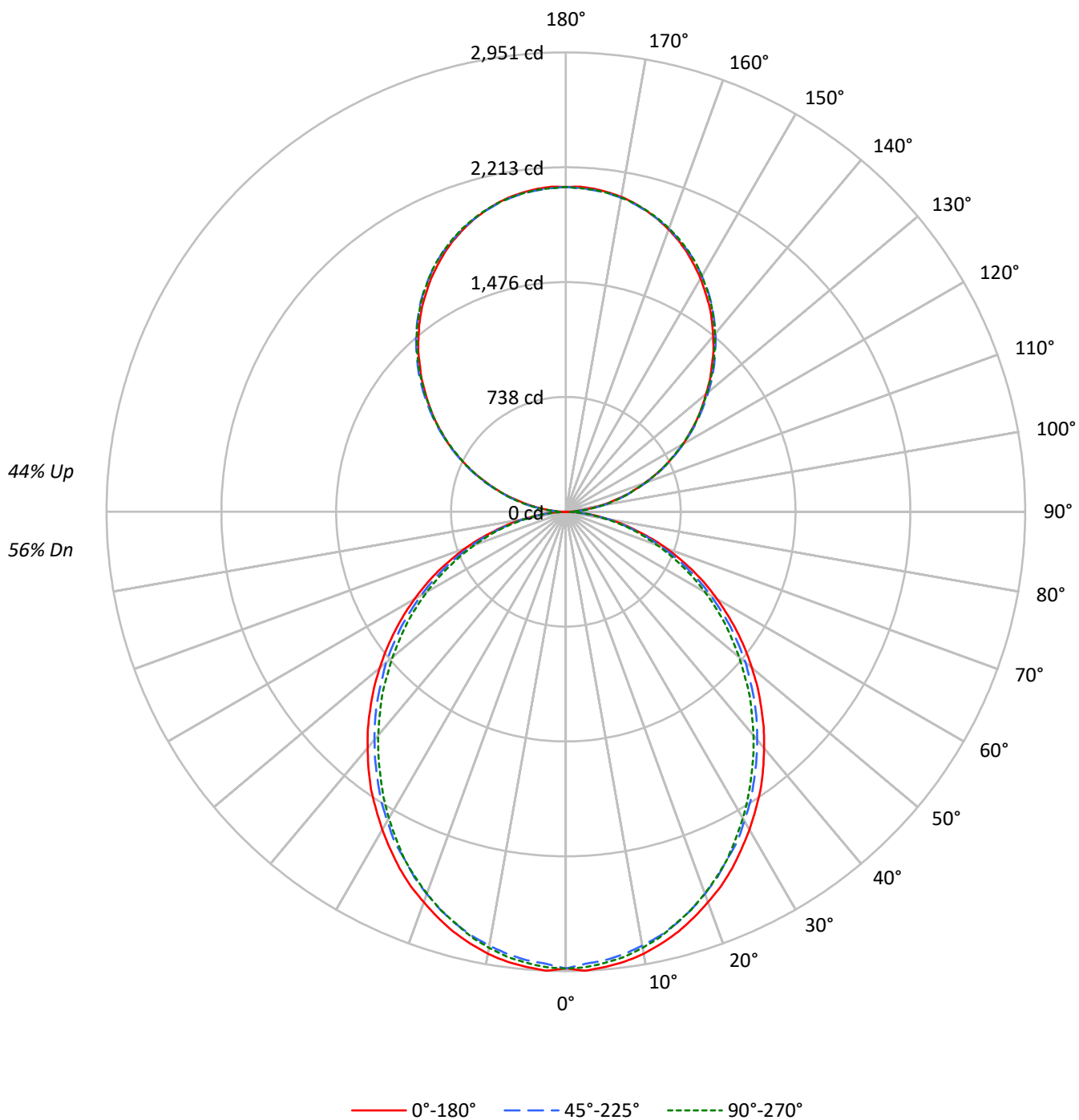
Lumens per Lamp: N/A
Luminaire Lumens: 13304.0 lumens
Efficiency: N/A
Efficacy: 104.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 127.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
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					0
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																					
0	109	109	109	109		101	101	101	101		87	87	87		74	74	74		62	62	62
1	99	95	91	87		92	88	85	82		76	74	71		65	63	61		55	53	52
2	90	83	77	71		84	77	72	67		67	63	59		57	54	51		48	46	44
3	82	73	65	59		76	68	61	56		59	54	50		50	47	43		43	40	37
4	75	64	56	50		70	60	53	48		52	47	42		45	41	37		38	35	32
5	69	57	49	43		64	54	46	41		47	41	37		40	36	32		34	31	28
6	64	52	43	38		59	48	41	36		42	36	32		37	32	28		31	28	25
7	59	47	39	33		55	44	37	31		38	32	28		33	29	25		28	25	22
8	55	42	35	29		51	40	33	28		35	29	25		30	26	22		26	23	20
9	51	39	31	26		47	36	30	25		32	26	23		28	23	20		24	21	18
10	48	36	28	23		44	34	27	22		30	24	20		26	21	18		22	19	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2331	2331	2331
5°	2335	2298	2314
10°	2316	2267	2282
15°	2282	2230	2233
20°	2236	2178	2183
25°	2190	2116	2125
30°	2133	2058	2051
35°	2078	1990	1973
40°	2011	1921	1899
45°	1945	1853	1823
50°	1872	1780	1735
55°	1795	1696	1654
60°	1709	1597	1562
65°	1615	1494	1452
70°	1495	1369	1335
75°	1329	1219	1226
80°	1130	1027	1019
85°	817	697	675

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1945 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.1	2.1
10°-20°	777.0	5.8
20°-30°	1141.8	8.6
30°-40°	1326.2	10.0
40°-50°	1324.5	10.0
50°-60°	1155.0	8.7
60°-70°	853.8	6.4
70°-80°	483.0	3.6
80°-90°	133.4	1.0
90°-100°	129.1	1.0
100°-110°	410.3	3.1
110°-120°	702.1	5.3
120°-130°	923.3	6.9
130°-140°	1036.4	7.8
140°-150°	1016.3	7.6
150°-160°	852.6	6.4
160°-170°	565.4	4.2
170°-180°	197.6	1.5
0°-30°	2195.0	16.5
0°-40°	3521.1	26.5
0°-60°	6000.6	45.1
0°-90°	7470.9	56.2
90°-120°	1241.5	9.3
90°-150°	4217.6	31.7
90°-180°	5833.0	43.8
0°-180°	13304.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2934	2934	2934	2934	2934	
5°	2934	2923	2892	2914	2909	279
15°	2793	2776	2739	2751	2737	787
25°	2528	2505	2458	2463	2458	1163
35°	2181	2153	2108	2090	2076	1362
45°	1775	1755	1712	1682	1670	1370
55°	1343	1326	1292	1258	1244	1201
65°	906	889	860	835	821	896
75°	474	468	454	437	443	506
85°	116	113	110	102	99	129
90°	2	23	62	58	60	13
95°	92	109	113	113	109	102
105°	379	384	388	391	391	400
115°	705	715	712	710	705	697
125°	1025	1040	1036	1030	1028	916
135°	1326	1345	1349	1347	1342	1025
145°	1609	1622	1632	1634	1627	1005
155°	1840	1845	1851	1860	1854	847
165°	2002	2000	2000	2012	2004	565
175°	2083	2078	2074	2087	2076	198
180°	2087	2087	2087	2087	2087	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2933.9	2933.9	2933.9	2933.9	2933.9
2.5°	2951.0	2937.0	2905.9	2933.9	2928.6
5°	2933.9	2922.9	2891.8	2914.2	2908.9
7.5°	2914.2	2897.5	2866.4	2889.1	2883.4
10°	2883.4	2863.6	2829.8	2852.2	2843.9
12.5°	2840.9	2824.1	2790.3	2804.3	2798.7
15°	2793.0	2776.3	2739.4	2750.8	2736.8
17.5°	2733.7	2717.0	2680.1	2694.3	2680.1
20°	2668.8	2652.0	2612.5	2620.9	2609.8
22.5°	2604.2	2578.7	2541.8	2541.8	2536.2
25°	2527.8	2505.4	2457.5	2462.9	2457.5
27.5°	2443.1	2423.4	2386.8	2378.4	2364.4
30°	2358.7	2335.9	2293.8	2285.4	2274.0
32.5°	2268.3	2251.5	2206.3	2189.2	2177.9
35°	2180.9	2152.8	2107.5	2090.5	2076.4
37.5°	2082.1	2056.6	2011.5	1991.7	1977.6
40°	1980.7	1957.8	1912.7	1887.5	1876.1
42.5°	1881.9	1859.1	1814.2	1785.7	1769.1
45°	1774.7	1754.9	1712.4	1681.6	1670.3
47.5°	1670.3	1650.5	1605.2	1574.1	1557.4
50°	1560.1	1546.1	1506.5	1467.0	1452.9
52.5°	1452.9	1433.1	1396.7	1365.6	1345.8
55°	1343.0	1326.0	1292.2	1258.4	1244.3
57.5°	1232.9	1218.9	1182.0	1148.2	1136.8
60°	1122.8	1111.7	1072.1	1041.0	1032.6
62.5°	1015.6	995.9	967.7	939.6	928.2
65°	905.8	888.7	860.5	835.1	821.0
67.5°	792.9	778.5	753.4	733.7	722.3
70°	688.4	677.0	651.7	631.9	620.8
72.5°	581.3	570.0	555.8	536.1	527.7
75°	473.8	468.4	454.1	437.3	443.0
77.5°	378.1	366.6	361.0	352.6	344.2
80°	282.3	279.3	273.6	265.2	259.5
82.5°	191.9	191.9	189.2	177.8	177.8
85°	115.6	112.8	110.2	101.5	98.8
87.5°	50.9	45.2	39.5	31.1	28.2
90°	1.9	22.6	61.6	57.9	59.8
92.5°	39.0	52.9	54.8	56.6	56.6
95°	91.8	109.4	112.6	112.6	109.4
97.5°	152.9	169.2	176.2	176.2	176.2
100°	223.3	237.8	242.8	242.8	240.9
102.5°	297.6	308.2	315.2	317.1	315.2
105°	378.7	383.7	387.5	390.7	390.7
107.5°	459.2	466.7	466.7	468.1	459.2
110°	537.2	547.3	547.3	547.3	542.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	621.5	632.3	630.4	625.3	621.5
115°	704.6	714.6	711.5	709.6	704.6
117.5°	786.9	800.8	792.0	786.9	781.9
120°	870.0	883.8	870.0	870.0	864.3
122.5°	945.5	963.1	954.3	949.2	945.5
125°	1024.7	1040.5	1035.5	1029.8	1027.9
127.5°	1102.1	1121.6	1114.7	1107.2	1102.1
130°	1174.5	1197.1	1194.0	1190.2	1183.3
132.5°	1255.7	1273.3	1274.5	1265.7	1260.7
135°	1325.5	1344.9	1348.8	1346.8	1341.8
137.5°	1403.4	1419.2	1422.3	1421.1	1413.5
140°	1472.1	1487.8	1496.6	1496.6	1489.7
142.5°	1542.5	1558.2	1563.2	1565.1	1558.2
145°	1609.2	1621.7	1631.8	1633.7	1626.8
147.5°	1669.0	1684.7	1692.2	1695.4	1688.5
150°	1730.6	1741.3	1748.2	1753.9	1748.2
152.5°	1785.3	1796.0	1804.8	1811.8	1804.8
155°	1840.0	1845.0	1850.8	1859.5	1853.9
157.5°	1887.3	1891.0	1894.1	1906.8	1897.9
160°	1929.4	1933.2	1935.0	1945.7	1938.1
162.5°	1968.4	1968.4	1970.3	1982.2	1973.4
165°	2001.7	1999.8	1999.8	2012.4	2003.6
167.5°	2031.9	2026.3	2026.3	2038.8	2030.0
170°	2054.6	2049.6	2047.7	2060.2	2049.6
172.5°	2070.3	2065.2	2063.3	2075.9	2065.2
175°	2082.8	2077.8	2074.1	2086.6	2075.9
177.5°	2089.8	2084.7	2080.9	2091.7	2080.9
180°	2086.6	2086.6	2086.6	2086.6	2086.6

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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	10.76	11.68	11.66	12.60	13.78	10.32	11.24	11.23	12.17	13.35
	3H	12.42	13.25	13.33	14.18	15.38	11.95	12.77	12.86	13.70	14.91
	4H	13.01	13.79	13.94	14.73	15.94	12.54	13.32	13.47	14.25	15.47
	6H	13.41	14.13	14.35	15.07	16.30	12.94	13.66	13.88	14.60	15.83
	8H	13.52	14.20	14.47	15.16	16.39	13.04	13.73	13.99	14.69	15.92
	12H	13.57	14.22	14.52	15.18	16.43	13.09	13.74	14.04	14.69	15.95
4H	2H	11.22	12.00	12.16	12.94	14.16	10.88	11.66	11.81	12.60	13.81
	3H	13.10	13.75	14.04	14.71	15.94	12.70	13.35	13.65	14.32	15.55
	4H	13.81	14.41	14.77	15.37	16.62	13.41	14.00	14.36	14.96	16.22
	6H	14.33	14.84	15.30	15.83	17.08	13.92	14.43	14.89	15.42	16.67
	8H	14.48	14.96	15.45	15.94	17.21	14.07	14.55	15.04	15.53	16.79
	12H	14.56	14.99	15.55	15.99	17.26	14.14	14.57	15.12	15.56	16.84
8H	4H	14.01	14.49	14.98	15.47	16.74	13.65	14.13	14.62	15.11	16.38
	6H	14.65	15.04	15.64	16.06	17.33	14.28	14.68	15.28	15.70	16.97
	8H	14.87	15.22	15.87	16.23	17.51	14.50	14.85	15.50	15.86	17.14
	12H	15.00	15.31	16.01	16.31	17.64	14.62	14.93	15.63	15.93	17.26
12H	4H	14.00	14.43	14.99	15.43	16.70	13.65	14.08	14.64	15.08	16.35
	6H	14.68	15.03	15.68	16.04	17.32	14.33	14.68	15.33	15.68	16.97
	8H	14.92	15.23	15.93	16.23	17.56	14.57	14.87	15.57	15.88	17.21