

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: P905022

Luminaire Tested: DFN2DIP-4P4F0-030D080US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905022
REPORT IS A COMBINATION OF REPORTS P899139 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D080US835-FLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

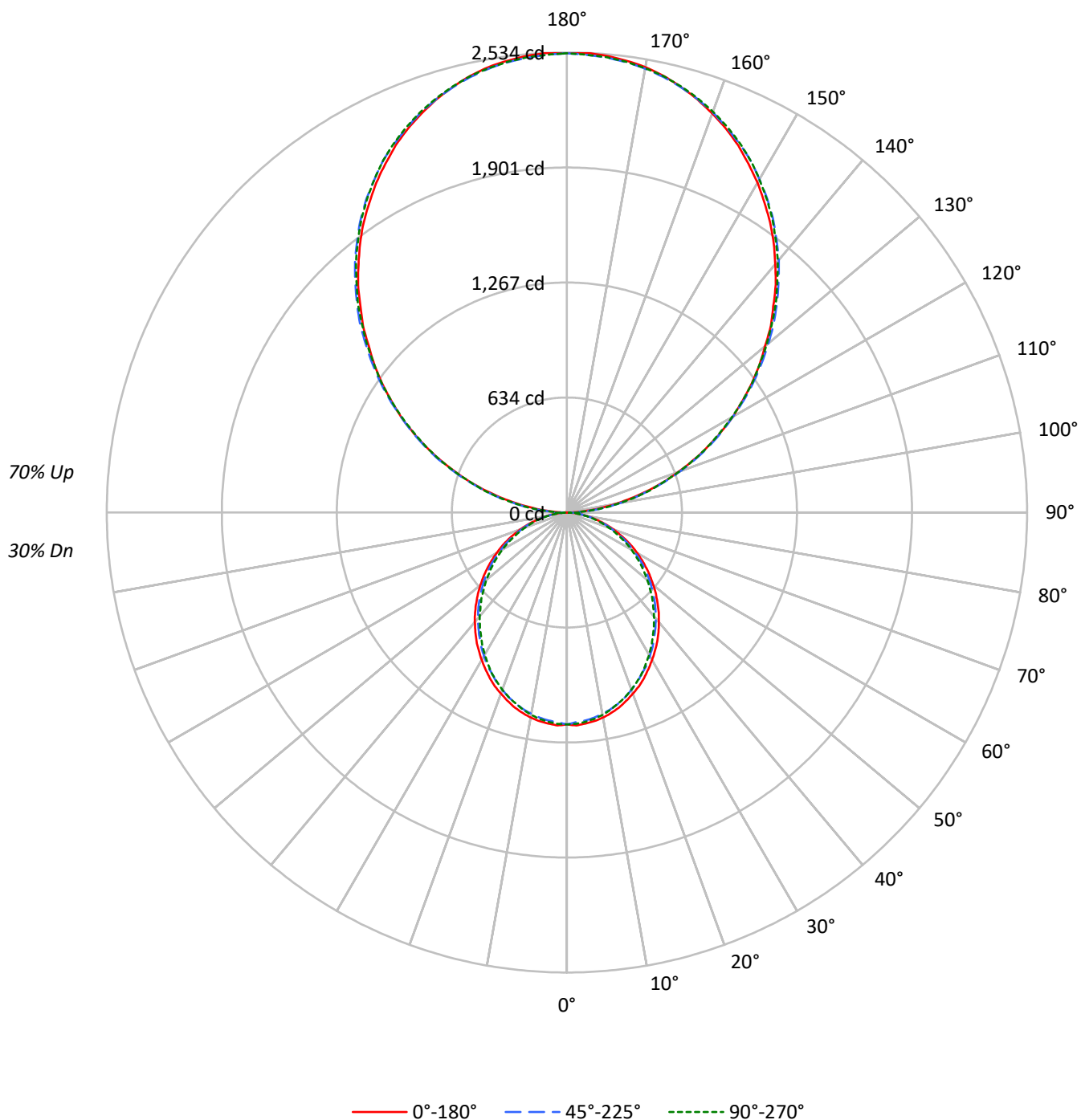
Lumens per Lamp: N/A
Luminaire Lumens: 10050.0 lumens
Efficiency: N/A
Efficacy: 99.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 101.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P905022

CATALOG NUMBER: DFN2DIP-4P4F0-030D080US835-FLLFLL

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	92	92	92	92	72	72	72	54	54	54	37	37	37
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	32
2	85	78	72	67	76	70	65	61	55	52	49	42	39	37	29	28	27
3	77	68	61	56	69	61	55	51	49	44	41	37	34	32	26	24	23
4	71	60	53	47	63	54	48	43	43	38	35	33	30	27	23	21	19
5	65	54	46	40	58	48	42	37	38	34	30	29	26	23	21	19	17
6	60	48	40	34	53	43	37	32	35	30	26	26	23	20	19	17	15
7	55	43	35	30	49	39	32	28	31	26	23	24	20	18	17	15	13
8	51	39	32	26	46	35	29	24	28	24	20	22	18	16	16	13	12
9	47	35	28	23	42	32	26	22	26	21	18	20	17	14	14	12	11
10	44	32	25	21	40	29	23	19	24	19	16	18	15	13	13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	757	757	757
5°	759	747	752
10°	752	737	742
15°	741	725	726
20°	727	709	710
25°	712	689	692
30°	693	670	668
35°	676	648	643
40°	654	626	619
45°	632	604	595
50°	609	581	567
55°	584	554	541
60°	556	522	511
65°	526	489	476
70°	487	449	439
75°	433	401	405
80°	368	340	339
85°	267	233	228

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1916 cd/sqm

TEST NUMBER: P905022

CATALOG NUMBER: DFN2DIP-4P4F0-030D080US835-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.9	1.1
10°-20°	309.1	3.1
20°-30°	454.3	4.5
30°-40°	527.6	5.3
40°-50°	527.0	5.2
50°-60°	459.5	4.6
60°-70°	339.7	3.4
70°-80°	192.2	1.9
80°-90°	57.9	0.6
90°-100°	156.6	1.6
100°-110°	497.5	4.9
110°-120°	851.3	8.5
120°-130°	1119.6	11.1
130°-140°	1256.7	12.5
140°-150°	1232.3	12.3
150°-160°	1033.7	10.3
160°-170°	685.6	6.8
170°-180°	239.6	2.4
0°-30°	873.3	8.7
0°-40°	1400.9	13.9
0°-60°	2387.4	23.8
0°-90°	2977.2	29.6
90°-120°	1505.3	15.0
90°-150°	5113.9	50.9
90°-180°	7073.0	70.4
0°-180°	10050.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1167	1167	1167	1167	1167	
5°	1167	1163	1150	1160	1157	111
15°	1111	1105	1090	1094	1089	313
25°	1006	997	978	980	978	463
35°	868	856	838	832	826	542
45°	706	698	681	669	664	545
55°	534	528	514	501	495	478
65°	360	354	342	332	327	356
75°	188	186	181	174	176	201
85°	46	45	44	40	39	51
90°	2	28	75	70	72	10
95°	111	133	136	136	133	124
105°	459	465	470	474	474	485
115°	854	866	863	860	854	845
125°	1242	1262	1256	1249	1246	1110
135°	1607	1631	1635	1633	1627	1242
145°	1951	1966	1979	1981	1972	1219
155°	2231	2237	2244	2255	2248	1027
165°	2427	2425	2425	2440	2429	685
175°	2526	2519	2515	2530	2517	240
180°	2530	2530	2530	2530	2530	

TEST NUMBER: P905022

CATALOG NUMBER: DFN2DIP-4P4F0-030D080US835-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1167.3	1167.3	1167.3	1167.3	1167.3
2.5°	1174.1	1168.5	1156.1	1167.3	1165.2
5°	1167.3	1162.9	1150.5	1159.5	1157.3
7.5°	1159.5	1152.8	1140.4	1149.5	1147.2
10°	1147.2	1139.3	1125.9	1134.8	1131.5
12.5°	1130.3	1123.6	1110.2	1115.7	1113.5
15°	1111.2	1104.6	1089.9	1094.4	1088.8
17.5°	1087.6	1081.0	1066.3	1071.9	1066.3
20°	1061.8	1055.1	1039.4	1042.7	1038.3
22.5°	1036.1	1026.0	1011.3	1011.3	1009.0
25°	1005.7	996.8	977.7	979.9	977.7
27.5°	972.0	964.1	949.6	946.3	940.7
30°	938.4	929.4	912.6	909.2	904.7
32.5°	902.5	895.8	877.8	871.0	866.5
35°	867.7	856.5	838.5	831.7	826.1
37.5°	828.4	818.3	800.3	792.4	786.8
40°	788.0	779.0	761.0	751.0	746.5
42.5°	748.7	739.7	721.8	710.5	703.8
45°	706.1	698.2	681.3	669.0	664.5
47.5°	664.5	656.7	638.7	626.3	619.6
50°	620.7	615.1	599.4	583.7	578.1
52.5°	578.1	570.2	555.7	543.3	535.4
55°	534.4	527.6	514.1	500.7	495.1
57.5°	490.5	484.9	470.3	456.8	452.3
60°	446.7	442.3	426.6	414.2	410.9
62.5°	404.1	396.2	385.0	373.8	369.3
65°	360.4	353.6	342.4	332.3	326.7
67.5°	315.5	309.8	299.7	291.9	287.4
70°	273.9	269.4	259.3	251.4	247.0
72.5°	231.3	226.7	221.1	213.3	210.0
75°	188.5	186.4	180.7	174.0	176.3
77.5°	150.4	145.9	143.6	140.3	137.0
80°	112.3	111.1	108.8	105.5	103.3
82.5°	76.3	76.3	75.3	70.7	70.7
85°	46.0	44.9	43.8	40.4	39.3
87.5°	20.2	18.0	15.7	12.4	11.2
90°	2.3	27.5	74.8	70.2	72.5
92.5°	47.3	64.1	66.4	68.6	68.6
95°	111.4	132.7	136.5	136.5	132.7
97.5°	185.4	205.2	213.6	213.6	213.6
100°	270.8	288.3	294.4	294.4	292.1
102.5°	360.8	373.8	382.1	384.4	382.1
105°	459.2	465.3	469.9	473.7	473.7
107.5°	556.8	566.0	566.0	567.5	556.8
110°	651.4	663.6	663.6	663.6	657.5

TEST NUMBER: P905022

CATALOG NUMBER: DFN2DIP-4P4F0-030D080US835-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	753.6	766.6	764.3	758.2	753.6
115°	854.3	866.5	862.7	860.4	854.3
117.5°	954.2	971.0	960.3	954.2	948.1
120°	1054.9	1071.7	1054.9	1054.9	1048.0
122.5°	1146.4	1167.8	1157.1	1151.0	1146.4
125°	1242.5	1261.6	1255.5	1248.6	1246.4
127.5°	1336.4	1360.0	1351.6	1342.5	1336.4
130°	1424.1	1451.5	1447.7	1443.2	1434.8
132.5°	1522.5	1543.8	1545.4	1534.7	1528.6
135°	1607.1	1630.8	1635.4	1633.1	1627.0
137.5°	1701.7	1720.8	1724.6	1723.1	1713.9
140°	1784.9	1803.9	1814.6	1814.6	1806.2
142.5°	1870.3	1889.4	1895.5	1897.8	1889.4
145°	1951.2	1966.4	1978.6	1980.9	1972.5
147.5°	2023.6	2042.7	2051.8	2055.7	2047.3
150°	2098.4	2111.3	2119.7	2126.6	2119.7
152.5°	2164.7	2177.7	2188.4	2196.8	2188.4
155°	2231.1	2237.2	2244.1	2254.7	2247.9
157.5°	2288.3	2292.9	2296.7	2311.9	2301.3
160°	2339.4	2344.0	2346.3	2359.2	2350.1
162.5°	2386.7	2386.7	2389.0	2403.5	2392.8
165°	2427.1	2424.8	2424.8	2440.1	2429.4
167.5°	2463.7	2456.9	2456.9	2472.1	2461.4
170°	2491.2	2485.1	2482.8	2498.1	2485.1
172.5°	2510.3	2504.2	2501.9	2517.1	2504.2
175°	2525.5	2519.4	2514.8	2530.1	2517.1
177.5°	2533.9	2527.8	2523.2	2536.2	2523.2
180°	2530.1	2530.1	2530.1	2530.1	2530.1

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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	4.06	4.76	5.17	5.87	7.40	3.61	4.32	4.73	5.42	6.96
	3H	5.71	6.34	6.83	7.46	9.01	5.22	5.85	6.34	6.97	8.52
	4H	6.29	6.89	7.43	8.01	9.57	5.80	6.40	6.93	7.52	9.07
	6H	6.69	7.24	7.83	8.36	9.93	6.19	6.74	7.33	7.86	9.43
	8H	6.79	7.32	7.94	8.45	10.01	6.29	6.82	7.43	7.95	9.51
	12H	6.84	7.34	7.99	8.47	10.05	6.33	6.83	7.48	7.96	9.54
4H	2H	4.50	5.10	5.64	6.22	7.77	4.14	4.74	5.28	5.86	7.42
	3H	6.36	6.86	7.50	8.00	9.57	5.95	6.45	7.09	7.59	9.16
	4H	7.07	7.53	8.22	8.66	10.25	6.64	7.10	7.79	8.24	9.83
	6H	7.58	7.97	8.73	9.13	10.71	7.15	7.54	8.30	8.70	10.28
	8H	7.73	8.10	8.88	9.24	10.84	7.29	7.66	8.45	8.81	10.40
	12H	7.80	8.13	8.97	9.29	10.89	7.35	7.68	8.52	8.84	10.44
8H	4H	7.25	7.62	8.41	8.77	10.36	6.88	7.24	8.03	8.39	9.99
	6H	7.88	8.19	9.06	9.38	10.97	7.50	7.80	8.68	8.99	10.59
	8H	8.11	8.37	9.29	9.54	11.15	7.71	7.98	8.89	9.15	10.76
	12H	8.24	8.47	9.42	9.63	11.28	7.82	8.06	9.01	9.22	10.87
12H	4H	7.23	7.56	8.40	8.72	10.33	6.86	7.20	8.03	8.36	9.96
	6H	7.91	8.18	9.09	9.35	10.96	7.54	7.81	8.72	8.98	10.59
	8H	8.15	8.38	9.34	9.55	11.20	7.77	8.00	8.96	9.17	10.82

END OF REPORT