

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: P902242

Luminaire Tested: DFN2DIP-4P3F0-050D040US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902242
REPORT IS A COMBINATION OF REPORTS P899055 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D040US830-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

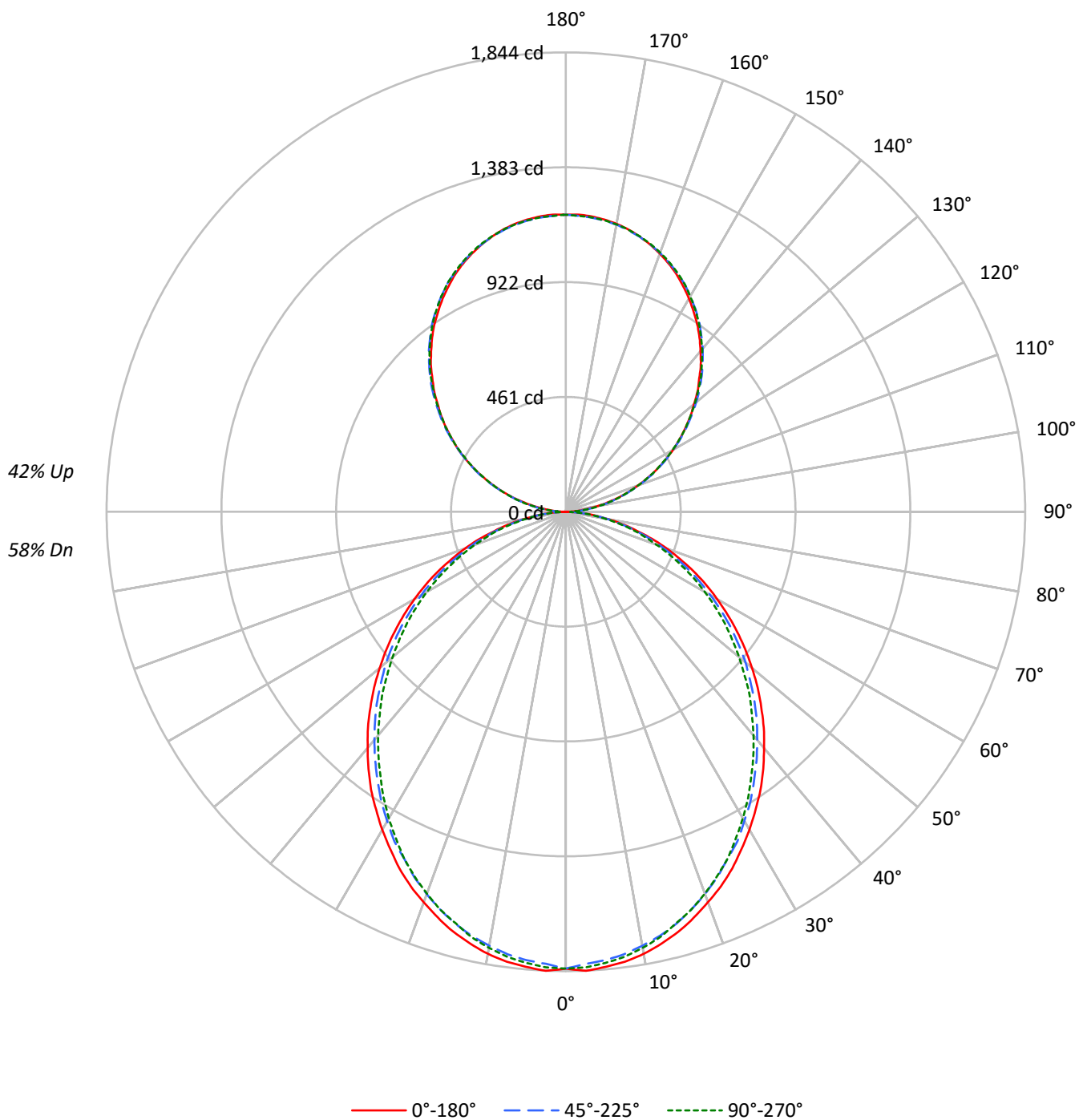
Lumens per Lamp: N/A
Luminaire Lumens: 8002.2 lumens
Efficiency: N/A
Efficacy: 101.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 78.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
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				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	109	109	109	109	102	102	102	102	88	88	88	75	75	75	64	64	64
1	100	95	91	88	93	89	86	82	77	75	72	66	65	63	56	55	54
2	91	83	77	72	84	78	72	68	68	64	60	58	55	52	50	47	45
3	83	73	66	60	77	69	62	57	60	55	50	52	48	44	44	41	39
4	76	65	57	51	70	61	54	48	53	47	43	46	42	38	39	36	33
5	70	58	50	43	65	54	47	41	48	42	37	41	37	33	35	32	29
6	64	52	44	38	60	49	41	36	43	37	32	37	33	29	32	29	26
7	59	47	39	33	55	44	37	32	39	33	29	34	29	26	29	26	23
8	55	43	35	29	51	40	33	28	36	30	26	31	26	23	27	23	20
9	51	39	31	26	48	37	30	25	33	27	23	29	24	21	25	21	18
10	48	36	28	24	45	34	27	23	30	25	21	27	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2090	2090	2090
5°	2092	2059	2074
10°	2073	2030	2045
15°	2042	1995	2000
20°	1999	1948	1955
25°	1957	1891	1902
30°	1904	1838	1836
35°	1854	1775	1765
40°	1793	1712	1698
45°	1731	1649	1629
50°	1664	1583	1550
55°	1594	1506	1477
60°	1514	1415	1393
65°	1427	1320	1293
70°	1316	1205	1187
75°	1163	1066	1087
80°	977	890	899
85°	688	590	588

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1731 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.6	2.2
10°-20°	485.6	6.1
20°-30°	713.7	8.9
30°-40°	828.9	10.4
40°-50°	827.8	10.3
50°-60°	721.8	9.0
60°-70°	533.6	6.7
70°-80°	301.9	3.8
80°-90°	83.1	1.0
90°-100°	73.8	0.9
100°-110°	234.4	2.9
110°-120°	401.2	5.0
120°-130°	527.6	6.6
130°-140°	592.2	7.4
140°-150°	580.8	7.3
150°-160°	487.2	6.1
160°-170°	323.1	4.0
170°-180°	112.9	1.4
0°-30°	1371.9	17.1
0°-40°	2200.7	27.5
0°-60°	3750.4	46.9
0°-90°	4669.0	58.3
90°-120°	709.4	8.9
90°-150°	2410.0	30.1
90°-180°	3333.0	41.7
0°-180°	8002.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1834	1834	1834	1834	1834	
5°	1834	1827	1807	1821	1818	174
15°	1746	1735	1712	1719	1710	492
25°	1580	1566	1536	1539	1536	727
35°	1363	1346	1317	1307	1298	851
45°	1109	1097	1070	1051	1044	856
55°	839	829	808	786	778	750
65°	566	555	538	522	513	560
75°	296	293	284	273	277	316
85°	72	70	69	63	62	81
90°	1	13	35	33	34	8
95°	52	63	64	64	63	58
105°	216	219	221	223	223	228
115°	403	408	406	406	403	398
125°	586	595	592	588	587	523
135°	757	768	771	770	767	585
145°	920	927	932	934	930	575
155°	1051	1054	1058	1063	1059	484
165°	1144	1143	1143	1150	1145	323
175°	1190	1187	1185	1192	1186	113
180°	1192	1192	1192	1192	1192	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1833.7	1833.7	1833.7	1833.7	1833.7
2.5°	1844.4	1835.6	1816.2	1833.7	1830.4
5°	1833.7	1826.8	1807.3	1821.4	1818.1
7.5°	1821.4	1810.9	1791.5	1805.7	1802.1
10°	1802.1	1789.8	1768.7	1782.6	1777.4
12.5°	1775.6	1765.1	1744.0	1752.8	1749.2
15°	1745.6	1735.1	1712.1	1719.3	1710.4
17.5°	1708.5	1698.1	1675.1	1683.9	1675.1
20°	1668.0	1657.6	1632.9	1638.0	1631.2
22.5°	1627.6	1611.7	1588.7	1588.7	1585.1
25°	1579.9	1565.8	1535.9	1539.3	1535.9
27.5°	1526.9	1514.6	1491.8	1486.5	1477.7
30°	1474.1	1460.0	1433.6	1428.3	1421.3
32.5°	1417.7	1407.2	1378.9	1368.3	1361.2
35°	1363.0	1345.5	1317.2	1306.6	1297.8
37.5°	1301.3	1285.4	1257.2	1244.8	1236.0
40°	1237.9	1223.7	1195.4	1179.7	1172.6
42.5°	1176.2	1162.0	1133.9	1116.1	1105.6
45°	1109.2	1096.8	1070.3	1051.0	1043.9
47.5°	1043.9	1031.5	1003.3	983.8	973.4
50°	975.1	966.3	941.6	916.9	908.0
52.5°	908.0	895.7	872.9	853.5	841.1
55°	839.4	828.8	807.6	786.5	777.7
57.5°	770.5	761.8	738.8	717.7	710.5
60°	701.7	694.8	670.1	650.6	645.5
62.5°	634.8	622.5	604.8	587.2	580.1
65°	566.1	555.4	537.8	522.0	513.1
67.5°	495.6	486.6	470.9	458.5	451.4
70°	430.3	423.2	407.3	394.9	388.0
72.5°	363.4	356.2	347.4	335.1	329.8
75°	296.1	292.8	283.8	273.3	276.9
77.5°	236.3	229.1	225.6	220.4	215.2
80°	176.4	174.6	171.0	165.8	162.2
82.5°	119.9	119.9	118.2	111.1	111.1
85°	72.2	70.5	68.8	63.4	61.7
87.5°	31.8	28.3	24.7	19.4	17.6
90°	1.0	12.9	35.3	33.1	34.1
92.5°	22.2	30.2	31.3	32.3	32.3
95°	52.5	62.6	64.4	64.4	62.6
97.5°	87.4	96.7	100.7	100.7	100.7
100°	127.6	135.9	138.7	138.7	137.7
102.5°	170.0	176.2	180.1	181.2	180.1
105°	216.4	219.2	221.4	223.2	223.2
107.5°	262.4	266.7	266.7	267.4	262.4
110°	307.0	312.7	312.7	312.7	309.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	355.1	361.3	360.1	357.3	355.1
115°	402.6	408.4	406.5	405.5	402.6
117.5°	449.7	457.6	452.6	449.7	446.9
120°	497.2	505.0	497.2	497.2	493.9
122.5°	540.3	550.4	545.4	542.4	540.3
125°	585.6	594.6	591.7	588.4	587.4
127.5°	629.8	640.9	637.0	632.6	629.8
130°	671.1	684.1	682.3	680.1	676.2
132.5°	717.5	727.5	728.3	723.2	720.4
135°	757.4	768.5	770.7	769.6	766.8
137.5°	802.0	811.0	812.8	812.0	807.8
140°	841.1	850.2	855.2	855.2	851.2
142.5°	881.5	890.4	893.2	894.4	890.4
145°	919.5	926.7	932.5	933.6	929.6
147.5°	953.7	962.6	967.0	968.7	964.8
150°	988.9	995.0	999.0	1002.2	999.0
152.5°	1020.2	1026.2	1031.3	1035.3	1031.3
155°	1051.4	1054.3	1057.5	1062.6	1059.3
157.5°	1078.5	1080.5	1082.3	1089.6	1084.5
160°	1102.5	1104.7	1105.7	1111.8	1107.5
162.5°	1124.7	1124.7	1125.9	1132.7	1127.7
165°	1143.9	1142.7	1142.7	1149.9	1144.9
167.5°	1161.1	1157.8	1157.8	1165.1	1160.0
170°	1174.0	1171.1	1170.1	1177.2	1171.1
172.5°	1183.0	1180.2	1179.0	1186.3	1180.2
175°	1190.2	1187.3	1185.2	1192.3	1186.3
177.5°	1194.2	1191.3	1189.1	1195.2	1189.1
180°	1192.3	1192.3	1192.3	1192.3	1192.3

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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	10.53	11.48	11.42	12.38	13.53	10.09	11.03	10.97	11.94	13.08
	3H	12.20	13.04	13.09	13.95	15.13	11.71	12.55	12.60	13.46	14.64
	4H	12.79	13.58	13.69	14.50	15.68	12.29	13.09	13.20	14.01	15.19
	6H	13.19	13.92	14.11	14.85	16.04	12.69	13.42	13.61	14.35	15.54
	8H	13.29	13.99	14.22	14.93	16.13	12.79	13.49	13.72	14.43	15.63
	12H	13.34	14.01	14.27	14.94	16.16	12.83	13.50	13.77	14.43	15.65
4H	2H	11.00	11.80	11.92	12.72	13.90	10.65	11.45	11.56	12.36	13.55
	3H	12.87	13.54	13.79	14.49	15.68	12.46	13.13	13.39	14.08	15.27
	4H	13.58	14.19	14.52	15.14	16.36	13.16	13.77	14.10	14.71	15.93
	6H	14.10	14.62	15.05	15.59	16.81	13.67	14.19	14.62	15.16	16.38
	8H	14.25	14.74	15.20	15.70	16.94	13.81	14.30	14.76	15.26	16.50
	12H	14.32	14.77	15.29	15.74	16.99	13.87	14.32	14.84	15.30	16.54
8H	4H	13.78	14.27	14.73	15.23	16.47	13.41	13.90	14.36	14.86	16.09
	6H	14.41	14.82	15.39	15.82	17.05	14.03	14.43	15.00	15.44	16.67
	8H	14.63	14.99	15.62	15.98	17.23	14.24	14.60	15.22	15.59	16.84
	12H	14.76	15.08	15.75	16.06	17.36	14.35	14.67	15.34	15.65	16.95
12H	4H	13.77	14.21	14.74	15.19	16.43	13.40	13.85	14.37	14.82	16.07
	6H	14.44	14.80	15.43	15.79	17.04	14.07	14.43	15.05	15.42	16.67
	8H	14.68	15.00	15.67	15.98	17.28	14.30	14.62	15.29	15.60	16.90