

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: P902264

Luminaire Tested: DFN2DIP-4P3F0-060D040US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902264
REPORT IS A COMBINATION OF REPORTS P899058 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D040US830-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

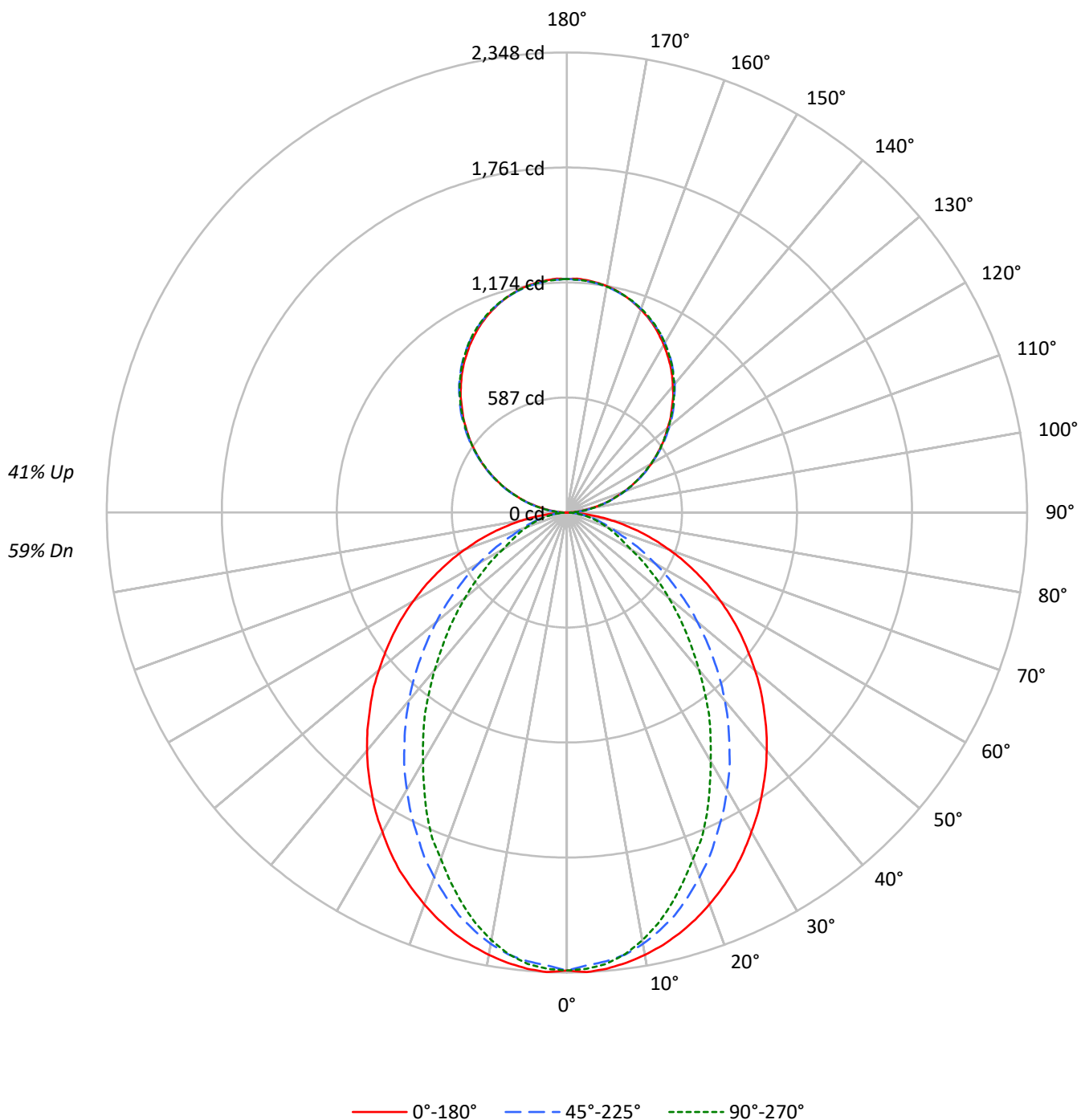
Lumens per Lamp: N/A
Luminaire Lumens: 8143.5 lumens
Efficiency: N/A
Efficacy: 88.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 91.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P902264

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902264

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US830-RLLFLL

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	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2664	2664	2664
5°	2666	2620	2637
10°	2638	2567	2551
15°	2600	2480	2417
20°	2550	2361	2254
25°	2500	2229	2096
30°	2432	2093	1896
35°	2365	1947	1720
40°	2297	1796	1519
45°	2219	1630	1337
50°	2137	1461	1159
55°	2052	1282	988
60°	1953	1094	812
65°	1840	903	730
70°	1701	725	660
75°	1528	636	598
80°	1277	528	516
85°	866	344	383

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2219 cd/sqm

TEST NUMBER: P902264

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US830-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.1	2.7
10°-20°	601.3	7.4
20°-30°	844.3	10.4
30°-40°	920.3	11.3
40°-50°	845.9	10.4
50°-60°	664.3	8.2
60°-70°	432.4	5.3
70°-80°	222.6	2.7
80°-90°	60.2	0.7
90°-100°	73.8	0.9
100°-110°	234.4	2.9
110°-120°	401.2	4.9
120°-130°	527.6	6.5
130°-140°	592.2	7.3
140°-150°	580.8	7.1
150°-160°	487.2	6.0
160°-170°	323.1	4.0
170°-180°	112.9	1.4
0°-30°	1664.7	20.4
0°-40°	2585.0	31.7
0°-60°	4095.1	50.3
0°-90°	4810.3	59.1
90°-120°	709.4	8.7
90°-150°	2410.0	29.6
90°-180°	3333.0	40.9
0°-180°	8143.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2337	2337	2337	2337	2337	
5°	2337	2327	2299	2318	2312	222
15°	2223	2200	2128	2088	2067	626
25°	2018	1950	1811	1724	1692	928
35°	1739	1631	1445	1312	1265	1088
45°	1421	1280	1058	907	857	1098
55°	1081	916	687	561	520	966
65°	730	558	368	296	290	724
75°	389	241	169	154	152	412
85°	91	46	40	40	40	104
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	

TEST NUMBER: P902264

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US830-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2337.3	2337.3	2337.3	2337.3	2337.3
2.5°	2347.9	2337.3	2313.9	2335.2	2331.0
5°	2337.3	2326.8	2299.1	2318.3	2312.0
7.5°	2318.3	2305.6	2276.1	2284.3	2273.8
10°	2292.8	2278.0	2235.9	2229.4	2216.8
12.5°	2261.3	2242.1	2184.9	2172.4	2149.0
15°	2223.1	2199.7	2127.9	2087.7	2066.6
17.5°	2178.7	2144.8	2055.9	2009.4	1975.6
20°	2127.9	2085.5	1979.8	1927.0	1880.4
22.5°	2072.9	2024.2	1901.5	1829.7	1798.0
25°	2018.0	1950.2	1810.6	1724.0	1692.1
27.5°	1952.5	1880.4	1726.0	1626.5	1577.9
30°	1882.6	1802.0	1632.9	1525.1	1467.9
32.5°	1814.9	1717.5	1544.3	1417.2	1364.2
35°	1738.8	1630.9	1444.8	1311.5	1264.8
37.5°	1664.7	1548.2	1351.7	1205.6	1152.8
40°	1586.4	1459.6	1254.2	1104.1	1049.1
42.5°	1506.1	1370.7	1157.1	1000.4	947.7
45°	1421.4	1279.6	1057.7	907.3	856.6
47.5°	1341.1	1191.0	962.5	812.2	765.7
50°	1252.3	1102.1	869.4	723.3	679.1
52.5°	1165.4	1006.7	780.5	640.9	600.8
55°	1080.8	915.9	687.4	560.6	520.4
57.5°	994.2	824.9	605.0	486.5	452.6
60°	905.3	736.1	518.2	410.5	376.5
62.5°	818.7	649.5	444.1	342.7	325.8
65°	729.8	558.4	368.1	296.2	289.7
67.5°	645.2	473.7	296.2	260.1	253.8
70°	556.3	391.3	245.2	224.2	215.7
72.5°	471.7	315.1	205.1	188.3	184.0
75°	389.2	241.0	169.2	154.4	152.4
77.5°	306.8	171.3	133.3	124.8	120.6
80°	230.5	122.7	101.4	93.1	93.1
82.5°	160.7	82.6	69.7	65.5	65.5
85°	90.9	46.5	40.2	40.2	40.2
87.5°	33.9	16.9	16.9	14.8	14.8
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

TEST NUMBER: P902264

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US830-RLLFLL

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

TEST NUMBER: P902264

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US830-RLLFLL

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	11.32	12.23	12.21	13.13	14.27	7.28	8.19	8.17	9.09	10.23
	3H	13.00	13.82	13.90	14.72	15.89	8.47	9.29	9.37	10.19	11.36
	4H	13.61	14.38	14.52	15.29	16.47	8.92	9.69	9.83	10.60	11.78
	6H	14.03	14.74	14.96	15.66	16.85	9.24	9.95	10.16	10.87	12.06
	8H	14.16	14.83	15.09	15.77	16.96	9.33	10.00	10.26	10.94	12.13
	12H	14.22	14.86	15.16	15.79	17.00	9.37	10.01	10.31	10.94	12.15
4H	2H	11.35	12.12	12.26	13.03	14.21	7.89	8.66	8.80	9.57	10.74
	3H	13.18	13.82	14.11	14.76	15.95	9.24	9.88	10.16	10.82	12.01
	4H	13.87	14.45	14.81	15.39	16.61	9.78	10.36	10.72	11.30	12.52
	6H	14.39	14.89	15.34	15.85	17.07	10.20	10.70	11.15	11.66	12.88
	8H	14.56	15.03	15.51	15.99	17.21	10.33	10.79	11.28	11.75	12.98
	12H	14.66	15.08	15.63	16.05	17.29	10.39	10.81	11.36	11.79	13.02
8H	4H	13.84	14.31	14.80	15.27	16.50	10.07	10.53	11.02	11.49	12.72
	6H	14.41	14.79	15.39	15.79	17.02	10.58	10.96	11.56	11.96	13.19
	8H	14.62	14.96	15.61	15.95	17.20	10.77	11.11	11.75	12.09	13.34
	12H	14.76	15.06	15.75	16.04	17.33	10.88	11.18	11.87	12.16	13.46
12H	4H	13.80	14.22	14.77	15.19	16.43	10.07	10.49	11.04	11.47	12.70
	6H	14.38	14.72	15.37	15.71	16.96	10.63	10.97	11.61	11.96	13.20
	8H	14.60	14.90	15.59	15.88	17.18	10.84	11.14	11.82	12.12	13.41