

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: P902257

Luminaire Tested: DFN2DIP-4P3F0-060D020US830-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902257
REPORT IS A COMBINATION OF REPORTS P900558 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D020US830-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

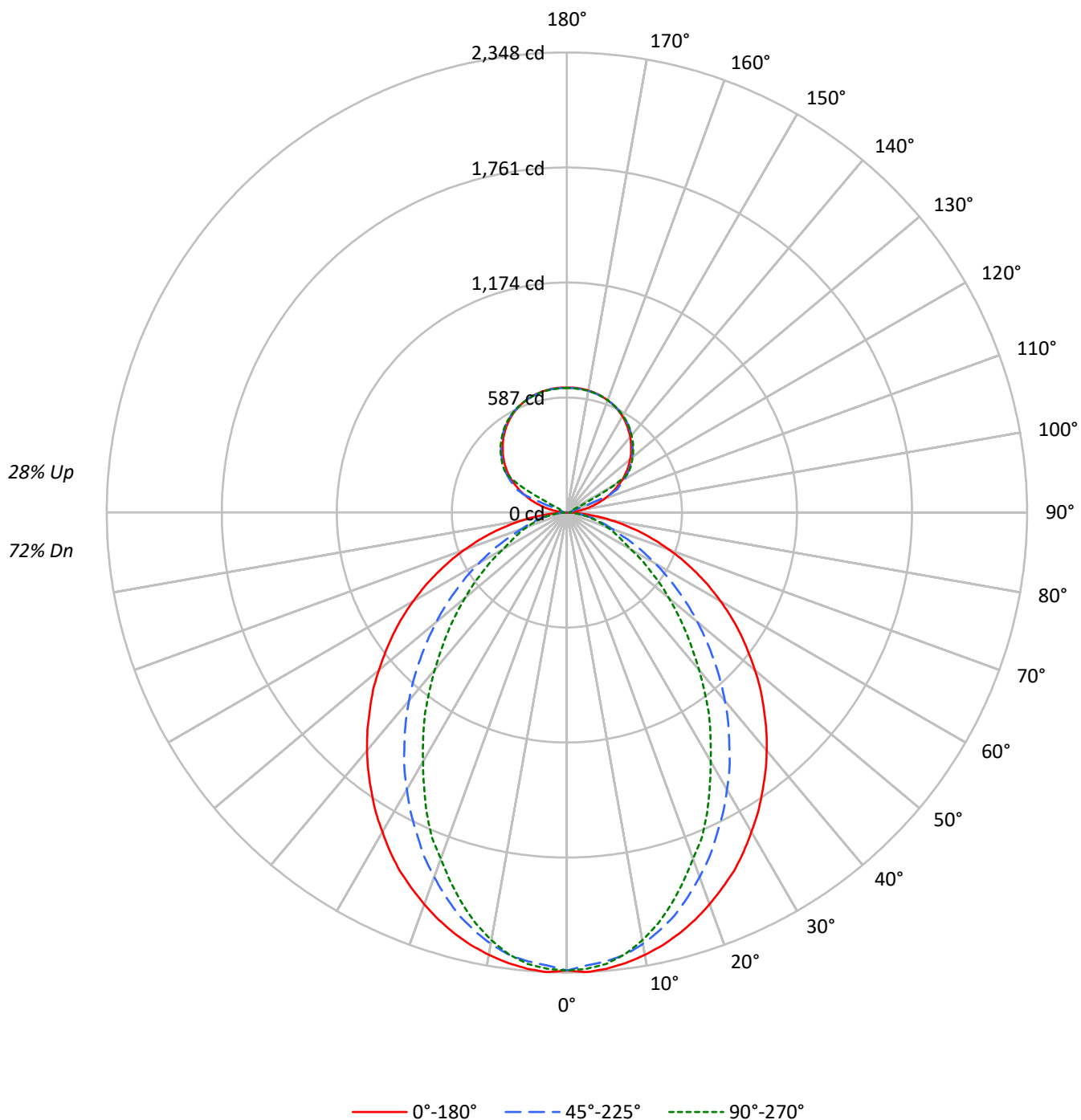
Lumens per Lamp: N/A
Luminaire Lumens: 6673.2 lumens
Efficiency: N/A
Efficacy: 86.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 77.4
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: P902257

CATALOG NUMBER: DFN2DIP-4P3F0-060D020US830-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P902257

CATALOG NUMBER: DFN2DIP-4P3F0-060D020US830-RLONL

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	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76
1	103	99	95	92	98	94	91	88	85	82	80	76	75	73	69	67	66
2	95	87	81	76	90	83	78	73	75	71	68	68	65	62	61	59	57
3	87	78	70	65	82	74	67	62	67	62	58	61	57	53	55	52	49
4	80	69	61	55	76	66	59	54	60	54	50	55	50	46	50	46	43
5	74	62	54	48	70	59	52	47	54	48	44	50	45	41	45	41	38
6	68	56	48	42	65	54	46	41	49	43	39	45	40	36	41	37	34
7	63	51	43	38	60	49	42	36	45	39	34	41	36	32	38	34	30
8	59	47	39	34	56	45	38	33	41	35	31	38	33	29	35	31	27
9	55	43	35	30	52	41	34	30	38	32	28	35	30	26	32	28	25
10	52	40	32	28	49	38	31	27	35	29	25	33	28	24	30	26	23

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: P902257

CATALOG NUMBER: DFN2DIP-4P3F0-060D020US830-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.1	3.3
10°-20°	601.3	9.0
20°-30°	844.3	12.7
30°-40°	920.3	13.8
40°-50°	845.9	12.7
50°-60°	664.3	10.0
60°-70°	432.4	6.5
70°-80°	222.6	3.3
80°-90°	57.9	0.9
90°-100°	21.0	0.3
100°-110°	78.2	1.2
110°-120°	207.4	3.1
120°-130°	344.0	5.2
130°-140°	365.4	5.5
140°-150°	339.6	5.1
150°-160°	273.0	4.1
160°-170°	175.9	2.6
170°-180°	60.6	0.9
0°-30°	1664.7	24.9
0°-40°	2585.0	38.7
0°-60°	4095.1	61.4
0°-90°	4808.1	72.1
90°-120°	306.6	4.6
90°-150°	1355.6	20.3
90°-180°	1865.0	27.9
0°-180°	6673.2	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°	0	6	9	12	12	6
95°	30	15	18	20	20	35
105°	140	154	28	33	35	150
115°	265	272	284	71	38	261
125°	374	380	389	392	394	334
135°	463	470	475	479	478	358
145°	537	537	545	548	546	336
155°	592	587	593	596	592	273
165°	623	621	622	625	622	176
175°	638	634	635	638	634	61
180°	636	636	636	636	636	

TEST NUMBER: P902257

CATALOG NUMBER: DFN2DIP-4P3F0-060D020US830-RLLONL

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°	0.5	5.6	9.1	11.5	12.4
92.5°	11.5	9.7	11.0	12.0	12.4
95°	29.9	14.7	17.9	20.3	19.8
97.5°	53.8	16.1	23.5	24.9	25.4
100°	81.5	18.4	26.2	29.9	30.8
102.5°	111.9	110.9	27.1	32.2	33.6
105°	140.0	153.7	28.1	33.1	35.0
107.5°	172.7	184.1	29.0	34.0	35.9
110°	204.0	213.6	80.6	34.6	36.4

TEST NUMBER: P902257

CATALOG NUMBER: DFN2DIP-4P3F0-060D020US830-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	233.4	241.7	233.8	35.4	36.9
115°	264.7	272.5	284.1	70.9	37.8
117.5°	291.8	301.0	308.9	243.1	122.4
120°	322.3	329.1	337.4	343.0	280.8
122.5°	348.0	355.3	364.6	367.3	367.9
125°	374.3	380.2	389.0	392.2	393.6
127.5°	398.2	404.6	411.6	416.1	416.6
130°	420.8	428.1	433.2	438.3	437.8
132.5°	443.7	449.8	454.8	458.9	458.5
135°	463.2	470.5	474.6	479.3	478.3
137.5°	483.3	488.9	493.5	498.1	496.7
140°	503.1	506.9	511.9	516.0	513.8
142.5°	519.7	523.0	529.0	532.6	530.3
145°	537.2	536.8	544.6	547.8	545.5
147.5°	552.4	551.0	558.8	561.1	559.3
150°	567.1	563.9	571.3	574.0	571.7
152.5°	579.6	575.9	582.8	585.6	582.3
155°	591.5	587.4	593.0	595.7	592.0
157.5°	601.2	597.6	601.7	604.9	601.2
160°	609.5	606.7	609.5	612.3	609.1
162.5°	616.8	614.1	616.4	619.6	615.5
165°	623.3	620.6	621.9	625.2	621.9
167.5°	628.4	625.6	627.0	630.3	626.0
170°	632.5	629.7	630.7	633.9	629.7
172.5°	635.3	632.5	633.5	636.7	632.5
175°	637.5	634.3	635.3	638.5	633.9
177.5°	638.5	635.3	635.7	638.9	634.8
180°	636.2	636.2	636.2	636.2	636.2

TEST NUMBER: P902257

CATALOG NUMBER: DFN2DIP-4P3F0-060D020US830-RLONL

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	12.37	13.42	13.12	14.18	15.10	8.33	9.38	9.08	10.14	11.06
	3H	14.06	15.00	14.82	15.77	16.72	9.53	10.47	10.29	11.24	12.19
	4H	14.67	15.56	15.45	16.34	17.31	9.98	10.87	10.76	11.65	12.62
	6H	15.10	15.92	15.90	16.71	17.69	10.31	11.13	11.10	11.92	12.89
	8H	15.23	16.01	16.04	16.82	17.80	10.40	11.18	11.21	11.99	12.97
	12H	15.30	16.04	16.11	16.84	17.85	10.45	11.19	11.26	12.00	13.00
4H	2H	12.41	13.30	13.20	14.08	15.04	8.95	9.83	9.73	10.62	11.58
	3H	14.26	14.99	15.05	15.81	16.79	10.31	11.05	11.11	11.87	12.84
	4H	14.95	15.62	15.76	16.44	17.45	10.86	11.53	11.67	12.35	13.36
	6H	15.47	16.05	16.30	16.89	17.91	11.29	11.86	12.11	12.71	13.72
	8H	15.65	16.19	16.48	17.03	18.05	11.42	11.95	12.25	12.79	13.82
	12H	15.75	16.24	16.60	17.10	18.13	11.49	11.97	12.34	12.83	13.86
8H	4H	14.93	15.47	15.77	16.31	17.34	11.16	11.69	11.99	12.53	13.56
	6H	15.50	15.95	16.36	16.83	17.85	11.67	12.12	12.53	13.00	14.02
	8H	15.72	16.11	16.59	16.99	18.03	11.86	12.25	12.73	13.13	14.17
	12H	15.86	16.21	16.73	17.08	18.18	11.98	12.33	12.86	13.20	14.30
12H	4H	14.90	15.38	15.75	16.24	17.27	11.17	11.65	12.02	12.51	13.54
	6H	15.48	15.87	16.35	16.75	17.79	11.72	12.12	12.59	12.99	14.04
	8H	15.71	16.05	16.58	16.92	18.02	11.94	12.28	12.81	13.15	14.25