

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: P902871

Luminaire Tested: DFN2DIP-PN2F0-030D020US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902871
REPORT IS A COMBINATION OF REPORTS P900984 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-030D020US830-RLLONL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

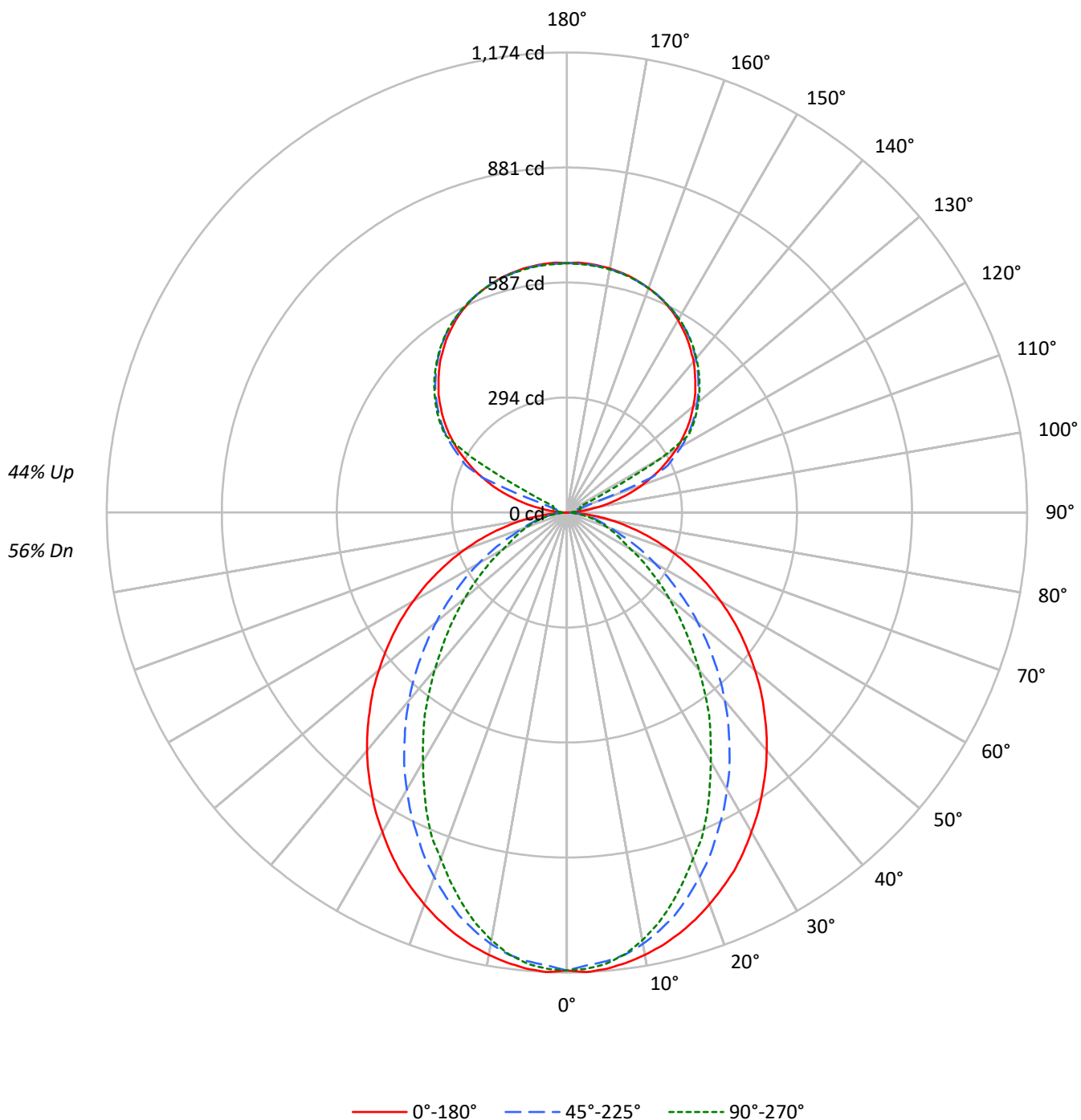
Lumens per Lamp: N/A
Luminaire Lumens: 4269.7 lumens
Efficiency: N/A
Efficacy: 97.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 43.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P902871

CATALOG NUMBER: DFN2DIP-PN2F0-030D020US830-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P902871

CATALOG NUMBER: DFN2DIP-PN2F0-030D020US830-RLLONL

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	101	101	101	101	87	87	87	74	74	74	62	62	62
1	100	96	92	88	93	89	86	83	77	75	72	66	64	63	56	54	53
2	91	84	78	73	85	79	73	69	68	64	61	58	56	53	50	48	46
3	84	74	67	62	78	70	63	58	61	56	52	52	49	46	44	42	40
4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35
5	71	59	51	46	66	56	49	43	49	43	39	42	38	35	36	33	31
6	65	54	46	40	61	50	43	38	44	39	34	39	34	31	33	30	27
7	61	49	41	35	56	46	39	34	40	35	30	35	31	27	30	27	24
8	56	44	37	31	52	42	35	30	37	31	27	32	28	25	28	25	22
9	53	41	33	28	49	38	32	27	34	28	25	30	25	22	26	23	20
10	49	37	30	25	46	35	29	24	31	26	22	28	23	20	24	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2531	2531	2531
5°	2531	2486	2503
10°	2502	2431	2418
15°	2463	2346	2289
20°	2414	2230	2131
25°	2363	2101	1979
30°	2296	1970	1788
35°	2230	1829	1620
40°	2163	1684	1428
45°	2086	1523	1254
50°	2005	1362	1084
55°	1921	1190	922
60°	1822	1011	755
65°	1710	830	676
70°	1572	661	606
75°	1399	572	544
80°	1152	465	461
85°	752	290	327

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2086 cd/sqm

TEST NUMBER: P902871

CATALOG NUMBER: DFN2DIP-PN2F0-030D020US830-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.5	2.6
10°-20°	300.7	7.0
20°-30°	422.1	9.9
30°-40°	460.2	10.8
40°-50°	422.9	9.9
50°-60°	332.2	7.8
60°-70°	216.2	5.1
70°-80°	111.3	2.6
80°-90°	29.5	0.7
90°-100°	21.0	0.5
100°-110°	78.2	1.8
110°-120°	207.4	4.9
120°-130°	344.0	8.1
130°-140°	365.4	8.6
140°-150°	339.6	8.0
150°-160°	273.0	6.4
160°-170°	175.9	4.1
170°-180°	60.6	1.4
0°-30°	832.3	19.5
0°-40°	1292.5	30.3
0°-60°	2047.6	48.0
0°-90°	2404.6	56.3
90°-120°	306.6	7.2
90°-150°	1355.6	31.7
90°-180°	1865.0	43.7
0°-180°	4269.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1169	1169	1169	1169	1169	
5°	1169	1163	1150	1159	1156	111
15°	1112	1100	1064	1044	1033	313
25°	1009	975	905	862	846	464
35°	869	815	722	656	632	544
45°	711	640	529	454	428	549
55°	540	458	344	280	260	483
65°	365	279	184	148	145	362
75°	194	121	85	77	76	206
85°	45	23	20	20	20	52
90°	0	6	9	12	12	4
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: P902871

CATALOG NUMBER: DFN2DIP-PN2F0-030D020US830-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1168.7	1168.7	1168.7	1168.7	1168.7
2.5°	1173.9	1168.7	1157.0	1167.6	1165.5
5°	1168.7	1163.4	1149.6	1159.1	1155.9
7.5°	1159.1	1152.8	1138.0	1142.2	1136.9
10°	1146.4	1139.1	1117.9	1114.7	1108.4
12.5°	1130.6	1121.1	1092.5	1086.2	1074.5
15°	1111.5	1099.9	1063.9	1043.9	1033.3
17.5°	1089.3	1072.4	1027.9	1004.8	987.8
20°	1063.9	1042.7	989.9	963.6	940.2
22.5°	1036.5	1012.1	950.7	914.8	899.0
25°	1009.0	975.1	905.3	862.0	846.0
27.5°	976.2	940.2	863.0	813.3	788.9
30°	941.3	901.1	816.4	762.6	734.0
32.5°	907.4	858.8	772.1	708.6	682.1
35°	869.4	815.4	722.4	655.7	632.4
37.5°	832.4	774.1	675.8	602.8	576.5
40°	793.2	729.8	627.2	552.0	524.6
42.5°	753.0	685.4	578.5	500.2	473.8
45°	710.8	639.8	528.9	453.6	428.3
47.5°	670.5	595.5	481.3	406.0	382.9
50°	626.1	551.0	434.7	361.7	339.5
52.5°	582.7	503.4	390.3	320.5	300.4
55°	540.4	457.9	343.7	280.3	260.2
57.5°	497.1	412.5	302.6	243.3	226.3
60°	452.6	368.1	259.1	205.2	188.3
62.5°	409.3	324.7	222.1	171.4	163.0
65°	364.9	279.2	184.0	148.1	144.9
67.5°	322.6	236.9	148.1	130.1	126.9
70°	278.1	195.7	122.6	112.1	107.8
72.5°	235.8	157.5	102.5	94.2	92.0
75°	194.5	120.6	84.6	77.2	76.2
77.5°	153.4	85.6	66.6	62.4	60.2
80°	115.3	61.4	50.7	46.6	46.6
82.5°	80.3	41.3	34.9	32.8	32.8
85°	45.4	23.2	20.1	20.1	20.1
87.5°	17.0	8.4	8.4	7.4	7.4
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: P902871

CATALOG NUMBER: DFN2DIP-PN2F0-030D020US830-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: P902871

CATALOG NUMBER: DFN2DIP-PN2F0-030D020US830-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	10.83	11.71	11.74	12.63	13.82	6.80	7.68	7.70	8.60	9.78
	3H	12.49	13.28	13.41	14.21	15.42	7.97	8.76	8.89	9.69	10.90
	4H	13.09	13.83	14.02	14.77	15.99	8.41	9.16	9.35	10.10	11.31
	6H	13.49	14.18	14.44	15.12	16.35	8.72	9.41	9.67	10.35	11.58
	8H	13.61	14.27	14.57	15.23	16.45	8.81	9.46	9.76	10.42	11.65
	12H	13.67	14.29	14.63	15.24	16.49	8.84	9.47	9.80	10.42	11.67
4H	2H	10.85	11.60	11.79	12.53	13.75	7.39	8.13	8.33	9.07	10.29
	3H	12.66	13.28	13.61	14.25	15.48	8.72	9.34	9.67	10.31	11.54
	4H	13.34	13.90	14.30	14.86	16.12	9.26	9.82	10.22	10.79	12.04
	6H	13.84	14.32	14.81	15.31	16.56	9.66	10.15	10.63	11.13	12.39
	8H	14.00	14.46	14.98	15.43	16.70	9.78	10.24	10.76	11.22	12.48
	12H	14.09	14.50	15.08	15.49	16.76	9.84	10.25	10.83	11.25	12.52
8H	4H	13.31	13.76	14.28	14.74	16.01	9.53	9.98	10.50	10.96	12.23
	6H	13.85	14.23	14.85	15.25	16.51	10.03	10.40	11.03	11.42	12.69
	8H	14.05	14.38	15.06	15.39	16.68	10.21	10.54	11.21	11.55	12.83
	12H	14.18	14.47	15.19	15.47	16.80	10.31	10.60	11.32	11.61	12.94
12H	4H	13.26	13.67	14.25	14.66	15.94	9.53	9.94	10.53	10.94	12.21
	6H	13.82	14.16	14.83	15.16	16.45	10.07	10.40	11.08	11.41	12.69
	8H	14.03	14.32	15.04	15.33	16.66	10.27	10.56	11.28	11.56	12.89

END OF REPORT