

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: P902948

Luminaire Tested: DFN2DIP-PN3F0-030D030US830-FLLFLL

Issue Date: 11/21/2024

**Test Information**

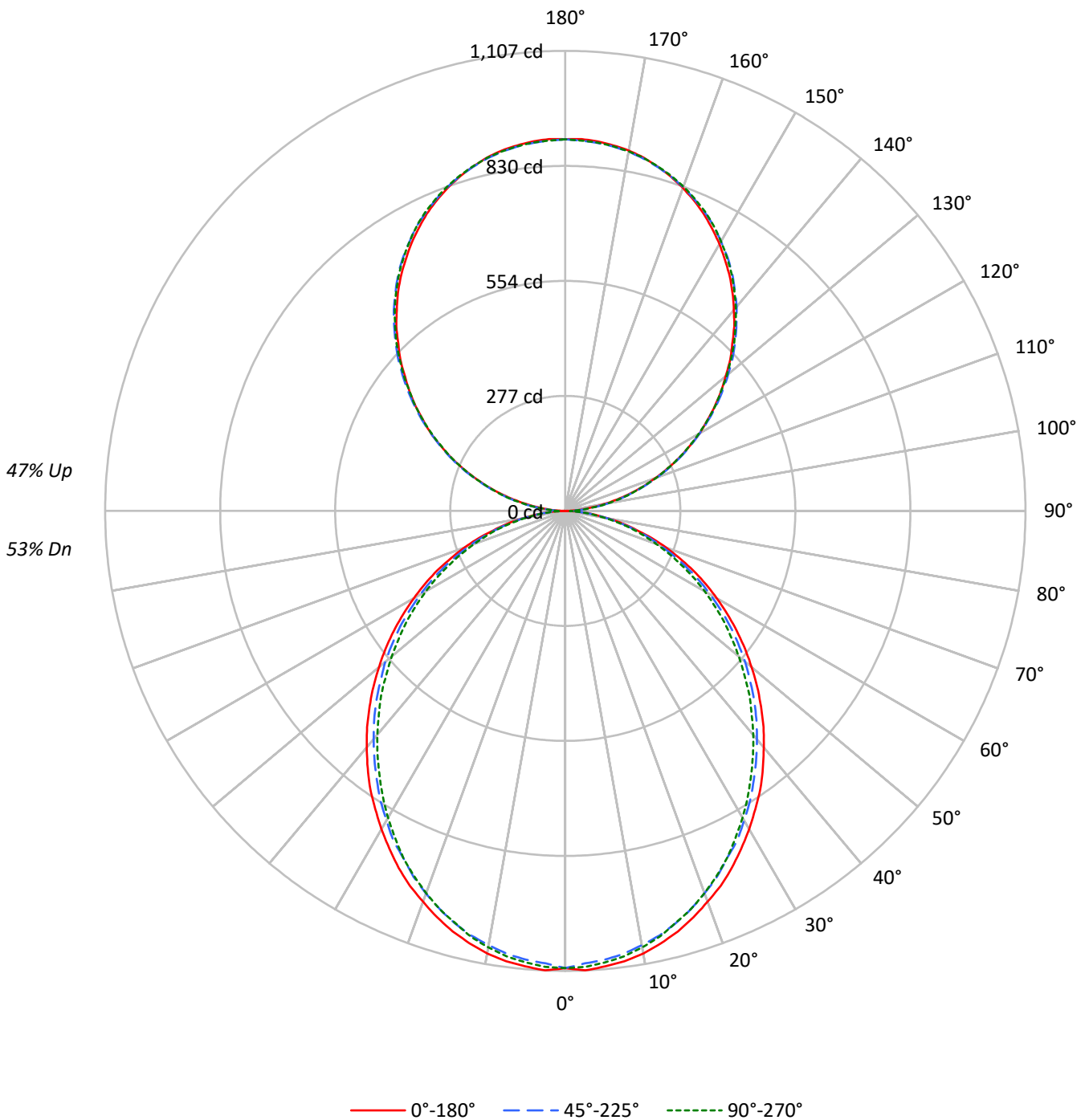
Test Method: LM-79-2019  
Report Number: P902948  
REPORT IS A COMBINATION OF REPORTS P899511 AND P896399  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-PN3F0-030D030US830-FLLFLL  
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5301.8 lumens  
Efficiency: N/A  
Efficacy: 112.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')  
CIE Type: General Diffuse  
  
Input Watts (W): 47.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.099  
Total Harmonic Distortion (THDi): 0.979  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P902948  
CATALOG NUMBER: DFN2DIP-PN3F0-030D030US830-FLLFLL

### Luminous Intensity Polar Plot





TEST NUMBER: P902948

CATALOG NUMBER: DFN2DIP-PN3F0-030D030US830-FLLFLL

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	59	59	59	53
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50	52	51	50	45
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42	46	44	42	37
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36	41	38	36	32
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31	36	33	31	27
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27	33	29	27	24
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24	30	26	24	21
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21	27	24	21	18
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19	25	21	19	16
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17	23	20	17	15
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15	21	18	15	13

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1286	1286	1286
5°	1287	1267	1276
10°	1276	1249	1258
15°	1257	1228	1231
20°	1231	1198	1203
25°	1205	1163	1170
30°	1172	1131	1129
35°	1141	1092	1085
40°	1104	1053	1044
45°	1066	1014	1002
50°	1025	973	953
55°	982	926	907
60°	932	870	855
65°	879	811	794
70°	811	740	728
75°	717	655	667
80°	602	546	550
85°	426	361	358

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1066 cd/sqm



TEST NUMBER: P902948

CATALOG NUMBER: DFN2DIP-PN3F0-030D030US830-FLLFLL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	103.6	2.0
10°-20°	291.4	5.5
20°-30°	428.2	8.1
30°-40°	497.3	9.4
40°-50°	496.7	9.4
50°-60°	433.1	8.2
60°-70°	320.2	6.0
70°-80°	181.1	3.4
80°-90°	50.3	0.9
90°-100°	55.3	1.0
100°-110°	175.8	3.3
110°-120°	300.9	5.7
120°-130°	395.7	7.5
130°-140°	444.2	8.4
140°-150°	435.6	8.2
150°-160°	365.4	6.9
160°-170°	242.3	4.6
170°-180°	84.7	1.6
0°-30°	823.1	15.5
0°-40°	1320.4	24.9
0°-60°	2250.3	42.4
0°-90°	2801.9	52.8
90°-120°	532.1	10.0
90°-150°	1807.5	34.1
90°-180°	2500.0	47.2
0°-180°	5301.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1100	1100	1100	1100	1100	
5°	1100	1096	1084	1093	1091	104
15°	1047	1041	1027	1032	1026	295
25°	948	940	922	924	922	436
35°	818	807	790	784	779	511
45°	666	658	642	631	626	514
55°	504	497	485	472	467	450
65°	340	333	323	313	308	336
75°	178	176	170	164	166	190
85°	43	42	41	38	37	48
90°	1	10	26	25	26	5
95°	39	47	48	48	47	44
105°	162	164	166	167	167	171
115°	302	306	305	304	302	299
125°	439	446	444	441	440	392
135°	568	576	578	577	575	439
145°	690	695	699	700	697	431
155°	789	791	793	797	795	363
165°	858	857	857	862	859	242
175°	893	890	889	894	890	85
180°	894	894	894	894	894	



TEST NUMBER: P902948

CATALOG NUMBER: DFN2DIP-PN3F0-030D030US830-FLLFLL

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1100.2	1100.2	1100.2	1100.2	1100.2
2.5°	1106.6	1101.4	1089.7	1100.2	1098.3
5°	1100.2	1096.1	1084.4	1092.9	1090.8
7.5°	1092.9	1086.6	1074.9	1083.5	1081.3
10°	1081.3	1073.8	1061.2	1069.6	1066.5
12.5°	1065.4	1059.0	1046.4	1051.6	1049.5
15°	1047.4	1041.1	1027.3	1031.5	1026.2
17.5°	1025.1	1018.9	1005.0	1010.3	1005.0
20°	1000.8	994.5	979.7	982.8	978.6
22.5°	976.6	967.0	953.2	953.2	951.0
25°	947.9	939.5	921.5	923.6	921.5
27.5°	916.2	908.7	895.0	891.9	886.6
30°	884.5	876.0	860.2	857.0	852.7
32.5°	850.6	844.3	827.4	821.0	816.7
35°	817.8	807.3	790.3	783.9	778.6
37.5°	780.8	771.3	754.3	746.9	741.6
40°	742.7	734.2	717.3	707.8	703.6
42.5°	705.7	697.2	680.3	669.7	663.4
45°	665.5	658.1	642.2	630.6	626.3
47.5°	626.3	619.0	602.0	590.3	584.0
50°	585.0	579.8	565.0	550.2	544.9
52.5°	544.9	537.4	523.8	512.1	504.6
55°	503.7	497.3	484.6	471.9	466.7
57.5°	462.3	457.0	443.3	430.6	426.3
60°	421.0	416.9	402.1	390.4	387.3
62.5°	380.9	373.4	362.9	352.3	348.1
65°	339.7	333.3	322.7	313.2	307.9
67.5°	297.4	292.0	282.5	275.1	270.9
70°	258.2	253.9	244.4	237.0	232.8
72.5°	218.0	213.7	208.4	201.0	197.9
75°	177.7	175.7	170.3	164.0	166.2
77.5°	141.8	137.5	135.3	132.2	129.1
80°	105.8	104.7	102.5	99.4	97.4
82.5°	71.9	71.9	71.0	66.6	66.6
85°	43.4	42.3	41.3	38.1	37.0
87.5°	19.0	17.0	14.8	11.7	10.6
90°	0.8	9.7	26.4	24.8	25.6
92.5°	16.7	22.6	23.5	24.2	24.2
95°	39.4	46.9	48.3	48.3	46.9
97.5°	65.5	72.5	75.5	75.5	75.5
100°	95.7	101.9	104.1	104.1	103.3
102.5°	127.5	132.1	135.1	135.9	135.1
105°	162.3	164.5	166.1	167.4	167.4
107.5°	196.8	200.0	200.0	200.6	196.8
110°	230.3	234.6	234.6	234.6	232.4



TEST NUMBER: P902948

CATALOG NUMBER: DFN2DIP-PN3F0-030D030US830-FLLFLL

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	266.4	271.0	270.1	268.0	266.4
115°	302.0	306.2	304.9	304.2	302.0
117.5°	337.2	343.2	339.4	337.2	335.1
120°	372.9	378.8	372.9	372.9	370.4
122.5°	405.2	412.7	409.0	406.8	405.2
125°	439.2	445.9	443.7	441.3	440.5
127.5°	472.3	480.7	477.8	474.5	472.3
130°	503.3	513.0	511.7	510.1	507.1
132.5°	538.1	545.6	546.2	542.4	540.3
135°	568.1	576.4	578.1	577.2	575.0
137.5°	601.4	608.2	609.5	609.1	605.8
140°	630.8	637.6	641.4	641.4	638.4
142.5°	661.1	667.8	670.0	670.8	667.8
145°	689.7	695.0	699.4	700.1	697.2
147.5°	715.3	722.0	725.2	726.6	723.6
150°	741.7	746.3	749.2	751.7	749.2
152.5°	765.2	769.7	773.5	776.5	773.5
155°	788.6	790.7	793.1	796.9	794.6
157.5°	808.8	810.4	811.8	817.2	813.4
160°	826.9	828.5	829.3	833.9	830.7
162.5°	843.6	843.6	844.4	849.5	845.7
165°	857.9	857.1	857.1	862.4	858.7
167.5°	870.8	868.4	868.4	873.7	870.0
170°	880.5	878.4	877.6	883.0	878.4
172.5°	887.2	885.1	884.3	889.7	885.1
175°	892.7	890.5	888.9	894.3	889.7
177.5°	895.6	893.4	891.8	896.5	891.8
180°	894.3	894.3	894.3	894.3	894.3



TEST NUMBER: P902948  
 CATALOG NUMBER: DFN2DIP-PN3F0-030D030US830-FLLFLL

**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	8.36	9.25	9.30	10.20	11.43	7.93	8.81	8.86	9.76	10.99
	3H	10.02	10.82	10.97	11.78	13.03	9.54	10.34	10.48	11.29	12.55
	4H	10.61	11.36	11.56	12.32	13.59	10.12	10.88	11.08	11.84	13.10
	6H	11.00	11.70	11.97	12.67	13.94	10.51	11.21	11.48	12.18	13.45
	8H	11.11	11.77	12.08	12.75	14.03	10.62	11.28	11.59	12.26	13.54
	12H	11.15	11.78	12.13	12.76	14.06	10.66	11.29	11.64	12.27	13.56
4H	2H	8.83	9.58	9.79	10.54	11.80	8.48	9.23	9.44	10.19	11.45
	3H	10.69	11.32	11.66	12.31	13.59	10.29	10.92	11.26	11.91	13.18
	4H	11.40	11.97	12.38	12.96	14.26	10.98	11.56	11.96	12.54	13.84
	6H	11.91	12.40	12.90	13.41	14.71	11.49	11.98	12.48	12.99	14.29
	8H	12.06	12.52	13.05	13.52	14.84	11.63	12.09	12.63	13.10	14.41
	12H	12.13	12.55	13.14	13.57	14.88	11.69	12.11	12.71	13.13	14.45
8H	4H	11.59	12.06	12.59	13.06	14.37	11.22	11.69	12.22	12.69	14.00
	6H	12.22	12.60	13.24	13.65	14.96	11.84	12.23	12.86	13.27	14.58
	8H	12.43	12.77	13.46	13.80	15.13	12.05	12.39	13.08	13.42	14.75
	12H	12.56	12.86	13.60	13.89	15.26	12.16	12.46	13.20	13.49	14.86
12H	4H	11.58	12.00	12.59	13.02	14.33	11.22	11.64	12.23	12.65	13.97
	6H	12.25	12.58	13.28	13.62	14.95	11.88	12.22	12.91	13.25	14.58
	8H	12.48	12.78	13.52	13.81	15.18	12.11	12.41	13.15	13.44	14.81