

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: P903062

Luminaire Tested: DFN2DIP-PN3F0-070D030US830-RLLFLL

Issue Date: 11/21/2024

**Test Information**

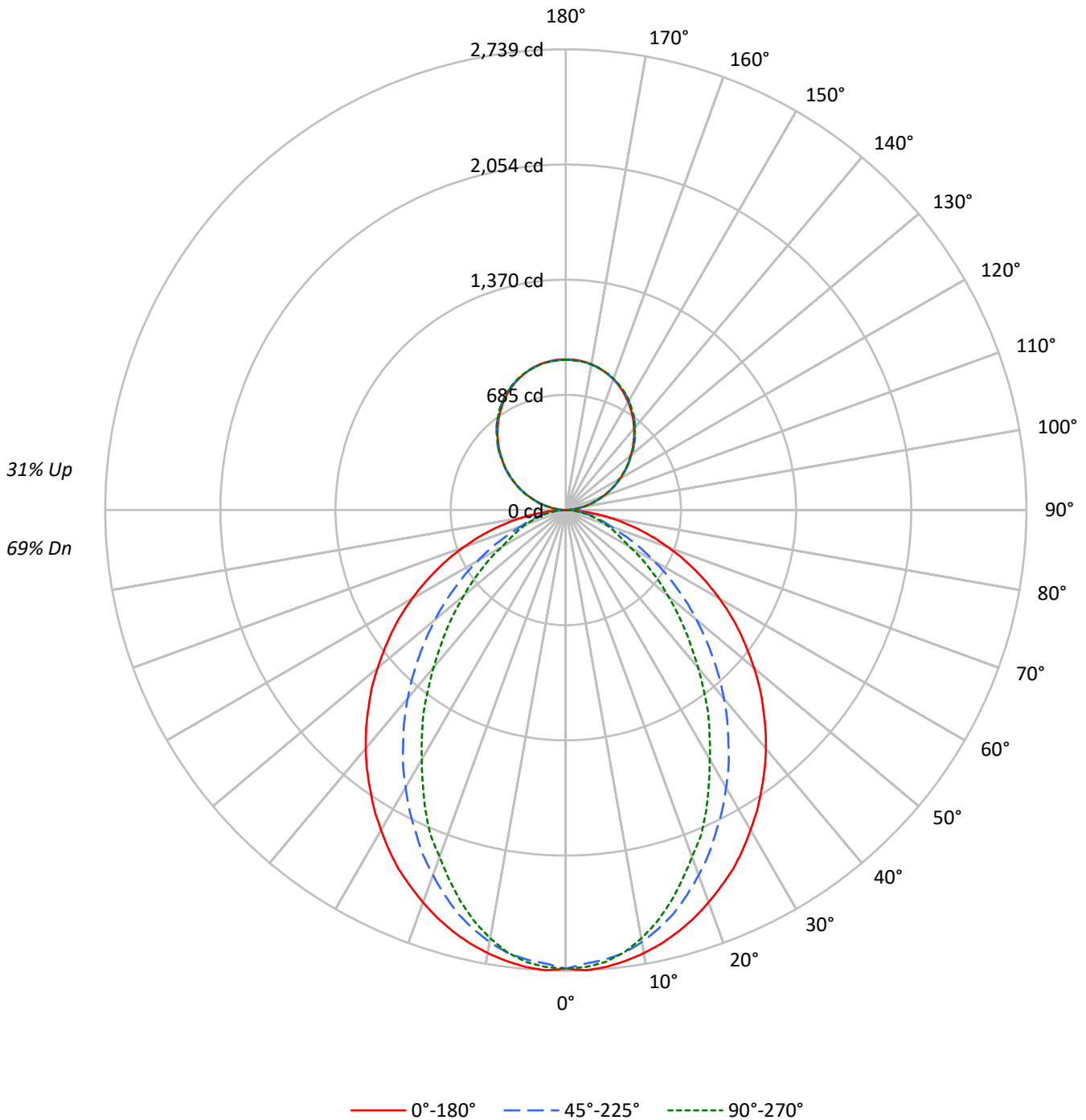
Test Method: LM-79-2019  
Report Number: P903062  
REPORT IS A COMBINATION OF REPORTS P899520 AND P896399  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-PN3F0-070D030US830-RLLFLL  
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8110.5 lumens  
Efficiency: N/A  
Efficacy: 87.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')  
CIE Type: Semi-Direct  
  
Input Watts (W): 92.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.946  
Total Harmonic Distortion (THDi): 0.132  
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			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	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74	69			
1	103	99	95	91	97	93	90	87	84	81	79	75	73	71	66	65	64	60			
2	94	87	81	76	89	82	77	73	74	70	66	66	63	60	59	57	55	51			
3	86	77	70	64	81	73	67	62	66	61	57	59	55	52	53	50	47	44			
4	79	69	61	55	75	65	58	53	59	53	49	53	49	45	48	44	41	38			
5	73	62	54	48	69	59	51	46	53	47	43	48	43	40	43	40	36	34			
6	68	56	48	42	64	53	46	40	48	42	38	44	39	35	40	36	32	30			
7	63	51	43	37	59	48	41	36	44	38	34	40	35	31	36	32	29	27			
8	59	46	39	33	55	44	37	32	41	35	30	37	32	28	34	29	26	24			
9	55	43	35	30	52	41	34	29	37	31	27	34	29	26	31	27	24	22			
10	51	39	32	27	49	38	31	26	35	29	25	32	27	23	29	25	22	20			

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

	0°	45°	90°
0°	3188	3188	3188
5°	3191	3135	3156
10°	3157	3071	3052
15°	3112	2967	2892
20°	3053	2825	2696
25°	2992	2667	2507
30°	2911	2504	2267
35°	2831	2329	2057
40°	2750	2149	1816
45°	2656	1949	1598
50°	2559	1748	1385
55°	2457	1532	1181
60°	2339	1308	970
65°	2203	1080	872
70°	2038	867	787
75°	1831	759	713
80°	1531	630	614
85°	1040	409	453

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2656 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	255.6	3.2
10°-20°	701.6	8.7
20°-30°	985.0	12.1
30°-40°	1073.7	13.2
40°-50°	986.9	12.2
50°-60°	775.0	9.6
60°-70°	504.5	6.2
70°-80°	259.7	3.2
80°-90°	68.8	0.8
90°-100°	55.3	0.7
100°-110°	175.8	2.2
110°-120°	300.9	3.7
120°-130°	395.7	4.9
130°-140°	444.2	5.5
140°-150°	435.6	5.4
150°-160°	365.4	4.5
160°-170°	242.3	3.0
170°-180°	84.7	1.0
0°-30°	1942.1	23.9
0°-40°	3015.8	37.2
0°-60°	4777.7	58.9
0°-90°	5610.6	69.2
90°-120°	532.1	6.6
90°-150°	1807.5	22.3
90°-180°	2500.0	30.8
0°-180°	8110.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2727	2727	2727	2727	2727	
5°	2727	2714	2682	2705	2697	259
15°	2594	2566	2483	2436	2411	731
25°	2354	2275	2112	2011	1974	1083
35°	2028	1903	1686	1530	1476	1270
45°	1658	1493	1234	1059	999	1281
55°	1261	1068	802	654	607	1127
65°	851	651	429	346	338	844
75°	454	281	197	180	178	480
85°	106	54	47	47	47	122
90°	1	10	26	25	26	8
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	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2726.9	2726.9	2726.9	2726.9	2726.9
2.5°	2739.1	2726.9	2699.6	2724.5	2719.5
5°	2726.9	2714.5	2682.4	2704.6	2697.3
7.5°	2704.6	2689.9	2655.4	2665.0	2652.8
10°	2675.0	2657.8	2608.5	2600.9	2586.2
12.5°	2638.1	2615.8	2549.1	2534.4	2507.2
15°	2593.6	2566.4	2482.6	2435.7	2411.1
17.5°	2541.8	2502.3	2398.6	2344.3	2304.8
20°	2482.6	2433.1	2309.8	2248.2	2193.8
22.5°	2418.5	2361.6	2218.4	2134.6	2097.7
25°	2354.3	2275.2	2112.3	2011.3	1974.2
27.5°	2277.8	2193.8	2013.6	1897.7	1840.9
30°	2196.4	2102.4	1905.0	1779.3	1712.6
32.5°	2117.3	2003.8	1801.6	1653.4	1591.6
35°	2028.5	1902.6	1685.6	1530.1	1475.6
37.5°	1942.2	1806.3	1577.0	1406.5	1345.0
40°	1850.8	1702.9	1463.3	1288.2	1224.0
42.5°	1757.1	1599.2	1349.9	1167.2	1105.7
45°	1658.4	1492.9	1234.0	1058.6	999.4
47.5°	1564.6	1389.5	1122.9	947.5	893.3
50°	1460.9	1285.8	1014.3	843.9	792.3
52.5°	1359.6	1174.5	910.6	747.7	700.9
55°	1260.9	1068.5	801.9	654.0	607.2
57.5°	1159.9	962.4	705.9	567.6	528.1
60°	1056.2	858.8	604.5	478.9	439.3
62.5°	955.1	757.7	518.1	399.8	380.1
65°	851.4	651.4	429.4	345.6	338.0
67.5°	752.7	552.7	345.6	303.4	296.1
70°	649.0	456.6	286.2	261.6	251.6
72.5°	550.4	367.6	239.3	219.7	214.7
75°	454.0	281.2	197.4	180.1	177.8
77.5°	357.9	199.7	155.5	145.5	140.6
80°	268.9	143.2	118.4	108.7	108.7
82.5°	187.5	96.3	81.4	76.4	76.4
85°	106.0	54.2	46.8	46.8	46.8
87.5°	39.5	19.6	19.6	17.2	17.2
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



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**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



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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	12.76	13.78	13.54	14.58	15.55	8.73	9.75	9.51	10.54	11.51
	3H	14.45	15.36	15.24	16.17	17.17	9.93	10.84	10.72	11.64	12.64
	4H	15.06	15.92	15.87	16.73	17.75	10.38	11.24	11.19	12.05	13.07
	6H	15.49	16.28	16.31	17.10	18.13	10.71	11.50	11.53	12.32	13.34
	8H	15.62	16.37	16.45	17.21	18.24	10.80	11.55	11.63	12.39	13.42
	12H	15.68	16.40	16.52	17.23	18.28	10.85	11.56	11.68	12.40	13.45
4H	2H	12.80	13.66	13.62	14.47	15.49	9.34	10.20	10.16	11.02	12.03
	3H	14.64	15.35	15.47	16.20	17.23	10.70	11.42	11.53	12.27	13.29
	4H	15.34	15.98	16.18	16.83	17.89	11.25	11.90	12.09	12.75	13.80
	6H	15.86	16.41	16.71	17.28	18.35	11.68	12.23	12.53	13.11	14.17
	8H	16.03	16.55	16.89	17.42	18.49	11.81	12.33	12.67	13.19	14.27
	12H	16.13	16.60	17.01	17.49	18.56	11.88	12.34	12.75	13.23	14.31
8H	4H	15.32	15.84	16.18	16.70	17.78	11.54	12.06	12.40	12.93	14.00
	6H	15.88	16.31	16.77	17.22	18.29	12.06	12.49	12.95	13.40	14.47
	8H	16.10	16.48	16.99	17.38	18.47	12.25	12.63	13.15	13.53	14.62
	12H	16.24	16.57	17.14	17.47	18.61	12.37	12.71	13.27	13.60	14.74
12H	4H	15.28	15.74	16.16	16.63	17.71	11.56	12.02	12.44	12.91	13.99
	6H	15.86	16.24	16.76	17.14	18.23	12.11	12.49	13.01	13.39	14.48
	8H	16.08	16.42	16.98	17.31	18.46	12.32	12.66	13.22	13.55	14.70