

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: P916756

Luminaire Tested: DFN2DIP-PN3F0-090D030US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916756
REPORT IS A COMBINATION OF REPORTS P899523 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-090D030US930-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

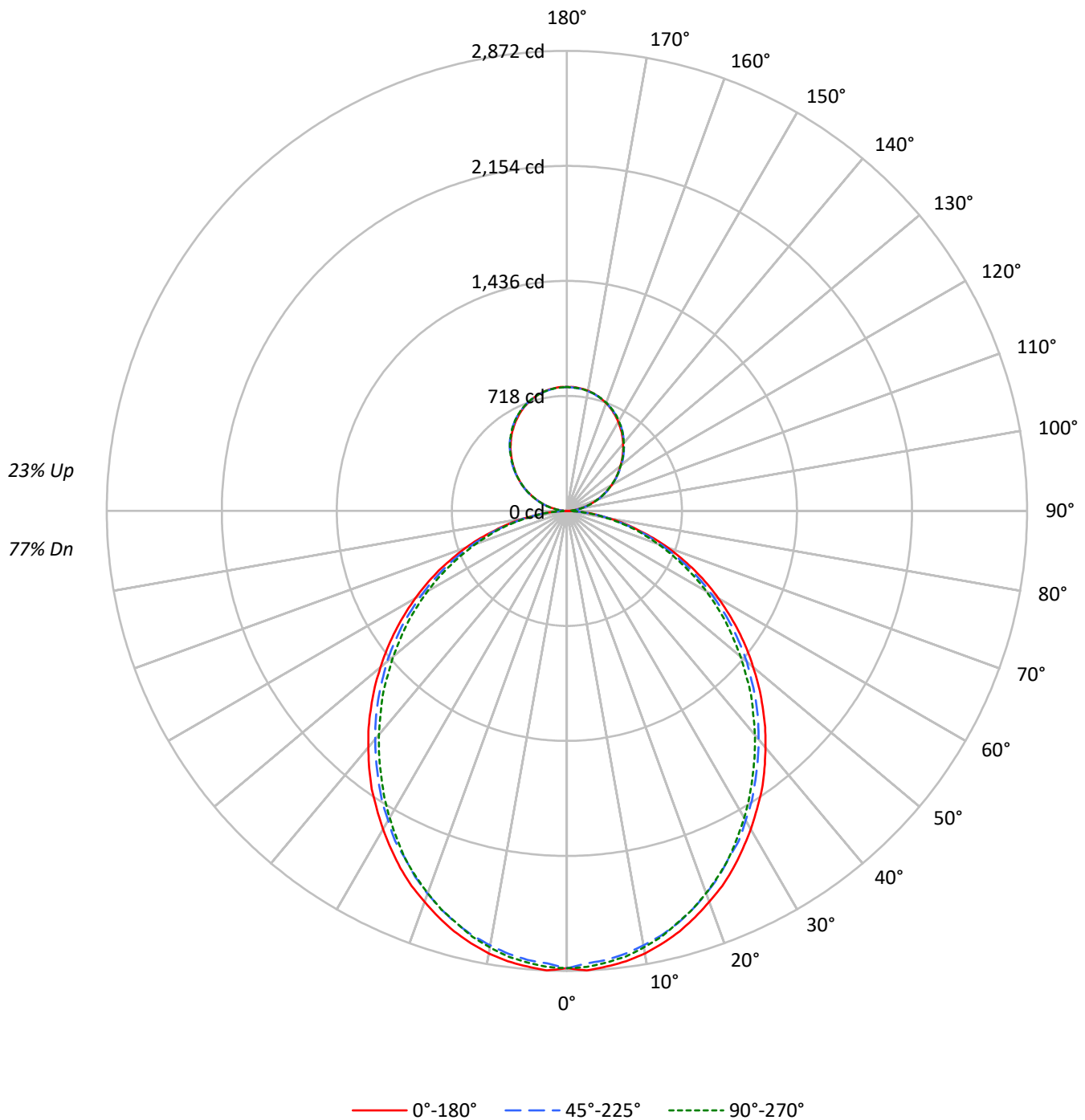
Lumens per Lamp: N/A
Luminaire Lumens: 9428.9 lumens
Efficiency: N/A
Efficacy: 81.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 116.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	114	114	114	114	108	108	108	108	98	98	98	89	89	89	81	81	81
1	104	99	95	92	99	95	91	88	86	84	81	79	77	75	72	70	68
2	95	87	80	75	90	83	77	72	76	71	67	69	66	62	63	60	58
3	86	76	69	63	82	73	66	61	67	61	57	61	57	53	56	52	49
4	79	68	59	53	75	65	57	52	60	53	48	55	50	45	50	46	42
5	73	61	52	46	69	58	50	44	53	47	42	49	44	39	45	41	37
6	67	55	46	40	64	52	45	39	48	42	37	45	39	35	41	36	33
7	62	49	41	35	59	48	40	34	44	37	33	41	35	31	37	33	29
8	58	45	37	31	55	43	36	31	40	34	29	37	32	28	34	30	26
9	54	41	33	28	52	40	32	27	37	31	26	34	29	25	32	27	24
10	51	38	30	25	48	37	30	25	34	28	24	32	26	23	30	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3338	3338	3338
5°	3341	3289	3312
10°	3312	3242	3265
15°	3261	3186	3194
20°	3193	3110	3121
25°	3126	3019	3037
30°	3042	2934	2930
35°	2962	2834	2817
40°	2864	2733	2709
45°	2766	2632	2599
50°	2659	2526	2472
55°	2547	2403	2354
60°	2420	2257	2220
65°	2281	2106	2061
70°	2104	1921	1889
75°	1860	1700	1729
80°	1564	1417	1427
85°	1103	938	930

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2766 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	268.7	2.9
10°-20°	756.1	8.0
20°-30°	1111.2	11.8
30°-40°	1290.5	13.7
40°-50°	1288.9	13.7
50°-60°	1123.9	11.9
60°-70°	830.8	8.8
70°-80°	470.1	5.0
80°-90°	126.2	1.3
90°-100°	47.9	0.5
100°-110°	152.1	1.6
110°-120°	260.3	2.8
120°-130°	342.3	3.6
130°-140°	384.2	4.1
140°-150°	376.8	4.0
150°-160°	316.1	3.4
160°-170°	209.6	2.2
170°-180°	73.3	0.8
0°-30°	2136.0	22.7
0°-40°	3426.5	36.3
0°-60°	5839.4	61.9
0°-90°	7266.5	77.1
90°-120°	460.2	4.9
90°-150°	1563.5	16.6
90°-180°	2162.0	22.9
0°-180°	9428.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2855	2855	2855	2855	2855	
5°	2855	2844	2814	2836	2831	271
15°	2718	2702	2666	2677	2663	765
25°	2460	2438	2391	2397	2391	1132
35°	2122	2095	2051	2034	2021	1325
45°	1727	1708	1666	1636	1625	1333
55°	1307	1290	1257	1225	1211	1169
65°	881	865	837	813	799	871
75°	461	456	442	426	431	492
85°	112	110	107	99	96	125
90°	1	8	23	21	22	9
95°	34	41	42	42	41	38
105°	140	142	144	145	145	148
115°	261	265	264	263	261	258
125°	380	386	384	382	381	339
135°	491	499	500	499	497	380
145°	597	601	605	606	603	373
155°	682	684	686	689	687	314
165°	742	741	741	746	743	209
175°	772	770	769	774	770	73
180°	774	774	774	774	774	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2855.1	2855.1	2855.1	2855.1	2855.1
2.5°	2871.7	2858.0	2827.8	2855.1	2849.9
5°	2855.1	2844.3	2814.1	2835.9	2830.6
7.5°	2835.9	2819.6	2789.3	2811.5	2805.9
10°	2805.9	2786.7	2753.8	2775.6	2767.4
12.5°	2764.5	2748.2	2715.4	2729.0	2723.5
15°	2718.0	2701.7	2665.8	2676.9	2663.2
17.5°	2660.2	2643.9	2608.1	2621.8	2608.1
20°	2597.1	2580.7	2542.3	2550.4	2539.7
22.5°	2534.1	2509.4	2473.5	2473.5	2468.0
25°	2459.8	2438.0	2391.4	2396.7	2391.4
27.5°	2377.4	2358.2	2322.7	2314.6	2300.9
30°	2295.3	2273.1	2232.0	2223.9	2212.9
32.5°	2207.3	2191.0	2147.0	2130.5	2119.4
35°	2122.3	2094.9	2050.9	2034.3	2020.6
37.5°	2026.2	2001.4	1957.4	1938.2	1924.5
40°	1927.4	1905.3	1861.2	1836.8	1825.8
42.5°	1831.2	1809.1	1765.4	1737.8	1721.5
45°	1727.0	1707.8	1666.4	1636.4	1625.4
47.5°	1625.4	1606.1	1562.1	1531.9	1515.6
50°	1518.2	1504.5	1466.0	1427.6	1413.9
52.5°	1413.9	1394.6	1359.1	1328.9	1309.6
55°	1307.0	1290.4	1257.4	1224.6	1210.9
57.5°	1199.8	1186.1	1150.3	1117.4	1106.3
60°	1092.6	1081.8	1043.3	1013.1	1004.9
62.5°	988.3	969.1	941.7	914.4	903.3
65°	881.4	864.8	837.4	812.7	799.0
67.5°	771.6	757.7	733.1	714.0	702.9
70°	669.9	658.8	634.1	614.9	604.1
72.5°	565.7	554.6	540.9	521.7	513.6
75°	461.1	455.8	441.9	425.6	431.1
77.5°	367.9	356.9	351.3	343.2	335.0
80°	274.7	271.7	266.2	258.0	252.6
82.5°	186.7	186.7	184.1	173.0	173.0
85°	112.4	109.8	107.2	98.7	96.1
87.5°	49.5	43.9	38.5	30.3	27.4
90°	0.7	8.4	22.8	21.4	22.2
92.5°	14.4	19.6	20.3	21.0	21.0
95°	34.1	40.6	41.7	41.7	40.6
97.5°	56.7	62.7	65.3	65.3	65.3
100°	82.8	88.1	90.0	90.0	89.4
102.5°	110.3	114.3	116.8	117.6	116.8
105°	140.4	142.3	143.7	144.8	144.8
107.5°	170.2	173.0	173.0	173.5	170.2
110°	199.2	202.9	202.9	202.9	201.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	230.4	234.4	233.7	231.8	230.4
115°	261.2	264.9	263.7	263.1	261.2
117.5°	291.7	296.9	293.6	291.7	289.8
120°	322.5	327.7	322.5	322.5	320.4
122.5°	350.5	357.0	353.8	351.9	350.5
125°	379.9	385.7	383.8	381.7	381.1
127.5°	408.5	415.8	413.3	410.4	408.5
130°	435.4	443.8	442.6	441.2	438.6
132.5°	465.5	472.0	472.5	469.2	467.3
135°	491.4	498.6	500.0	499.3	497.4
137.5°	520.2	526.1	527.3	526.8	524.0
140°	545.7	551.5	554.8	554.8	552.2
142.5°	571.9	577.6	579.5	580.2	577.6
145°	596.6	601.2	605.0	605.6	603.1
147.5°	618.7	624.5	627.3	628.5	625.9
150°	641.6	645.6	648.1	650.2	648.1
152.5°	661.9	665.8	669.0	671.6	669.0
155°	682.2	684.0	686.1	689.3	687.3
157.5°	699.6	701.0	702.2	706.9	703.6
160°	715.3	716.6	717.4	721.3	718.5
162.5°	729.7	729.7	730.4	734.8	731.6
165°	742.1	741.4	741.4	746.0	742.7
167.5°	753.3	751.1	751.1	755.8	752.5
170°	761.7	759.8	759.1	763.8	759.8
172.5°	767.4	765.6	764.9	769.6	765.6
175°	772.2	770.3	768.9	773.6	769.6
177.5°	774.7	772.8	771.4	775.4	771.4
180°	773.6	773.6	773.6	773.6	773.6

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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	13.62	14.79	14.30	15.49	16.32	13.18	14.35	13.86	15.05	15.88
	3H	15.30	16.35	15.99	17.06	17.92	14.81	15.87	15.51	16.58	17.44
	4H	15.89	16.89	16.61	17.61	18.48	15.41	16.40	16.12	17.12	17.99
	6H	16.30	17.22	17.03	17.95	18.84	15.81	16.73	16.54	17.47	18.35
	8H	16.41	17.29	17.16	18.04	18.93	15.92	16.80	16.67	17.55	18.44
	12H	16.47	17.31	17.22	18.05	18.97	15.97	16.81	16.72	17.56	18.47
4H	2H	14.11	15.11	14.83	15.83	16.70	13.76	14.76	14.48	15.48	16.35
	3H	16.00	16.83	16.73	17.59	18.48	15.60	16.43	16.33	17.19	18.07
	4H	16.72	17.48	17.47	18.24	19.15	16.30	17.06	17.05	17.82	18.74
	6H	17.25	17.90	18.01	18.69	19.61	16.83	17.48	17.59	18.27	19.19
	8H	17.40	18.01	18.17	18.80	19.73	16.97	17.59	17.75	18.37	19.31
	12H	17.49	18.04	18.28	18.84	19.78	17.05	17.60	17.84	18.40	19.35
8H	4H	16.94	17.55	17.71	18.33	19.27	16.57	17.18	17.34	17.96	18.90
	6H	17.57	18.08	18.38	18.91	19.84	17.20	17.71	18.00	18.53	19.47
	8H	17.79	18.25	18.61	19.07	20.02	17.41	17.86	18.22	18.69	19.64
	12H	17.94	18.33	18.75	19.15	20.16	17.54	17.93	18.35	18.75	19.76
12H	4H	16.94	17.49	17.73	18.29	19.23	16.58	17.13	17.37	17.93	18.87
	6H	17.61	18.06	18.42	18.88	19.83	17.24	17.69	18.05	18.52	19.47
	8H	17.86	18.26	18.67	19.07	20.08	17.49	17.88	18.30	18.70	19.71