

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: P902912

Luminaire Tested: DFN2DIP-PN2F0-050D030US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902912
REPORT IS A COMBINATION OF REPORTS P899477 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-050D030US830-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

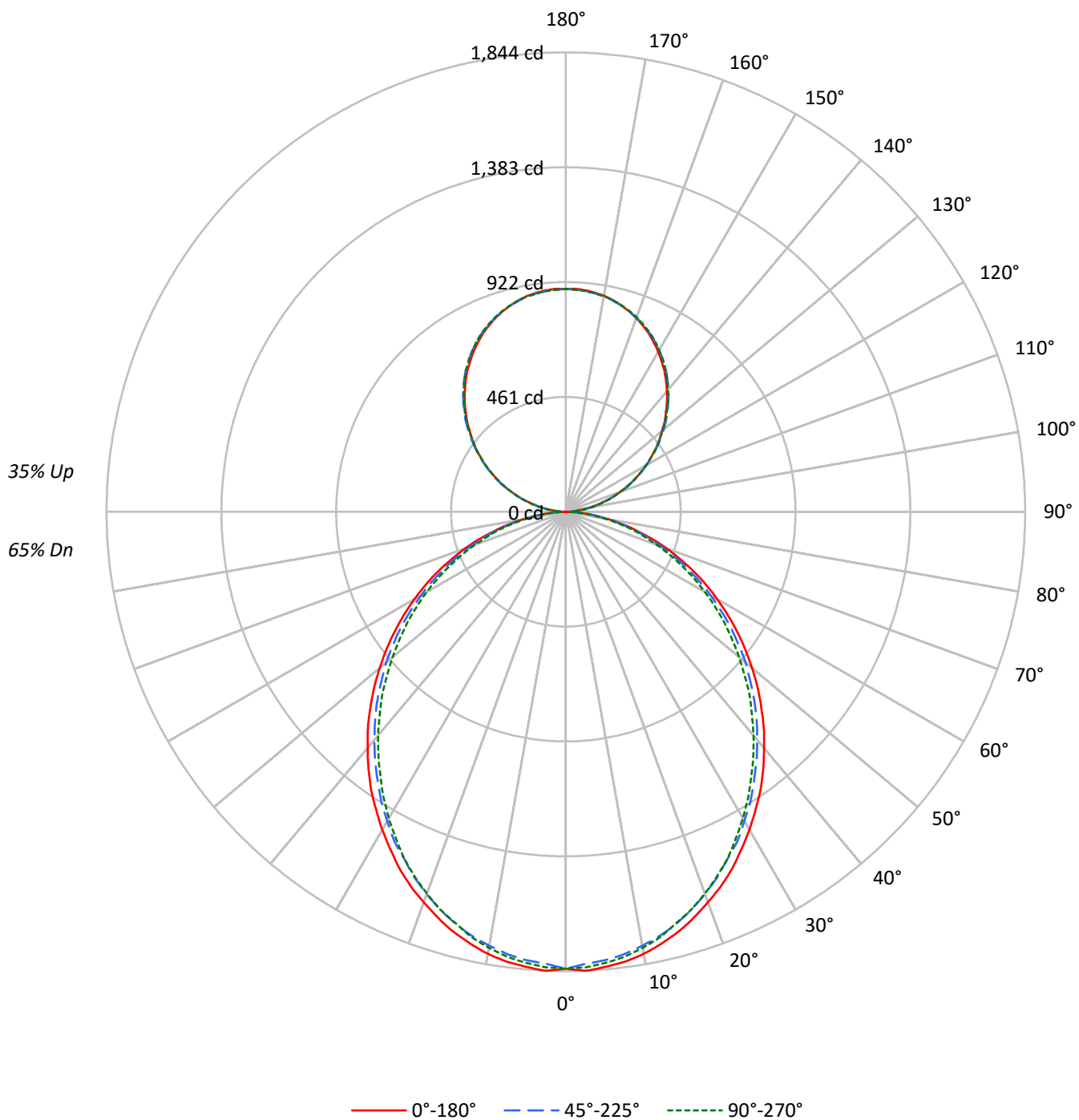
Lumens per Lamp: N/A
Luminaire Lumens: 7168.0 lumens
Efficiency: N/A
Efficacy: 102.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 69.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
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	111	111	111	111	104	104	104	104	92	92	92	80	80	80	70	70	70
1	101	97	93	89	95	91	88	84	81	78	75	71	69	67	62	60	59
2	92	85	78	73	86	80	74	69	71	66	63	62	59	56	55	52	50
3	84	74	67	61	79	70	63	58	62	57	53	55	51	47	48	45	42
4	77	66	58	52	72	62	55	49	55	50	45	49	44	41	43	40	37
5	71	59	50	44	66	56	48	42	50	44	39	44	39	35	39	35	32
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	35	31	28
7	60	48	40	34	57	45	38	33	41	35	30	36	31	28	32	28	25
8	56	44	36	30	53	41	34	29	37	31	27	33	28	25	30	26	22
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	27	23	20
10	49	37	29	24	46	35	28	23	32	26	22	28	24	20	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3972	3972	3972
5°	3972	3908	3937
10°	3933	3847	3878
15°	3869	3775	3788
20°	3784	3679	3698
25°	3700	3565	3593
30°	3596	3459	3463
35°	3497	3335	3324
40°	3376	3209	3192
45°	3255	3083	3057
50°	3123	2950	2901
55°	2983	2796	2756
60°	2825	2615	2590
65°	2652	2426	2393
70°	2433	2196	2181
75°	2130	1920	1978
80°	1763	1568	1605
85°	1196	991	1005

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3255 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.6	2.4
10°-20°	485.6	6.8
20°-30°	713.7	10.0
30°-40°	828.9	11.6
40°-50°	827.8	11.5
50°-60°	721.8	10.1
60°-70°	533.6	7.4
70°-80°	301.9	4.2
80°-90°	82.2	1.1
90°-100°	55.3	0.8
100°-110°	175.8	2.5
110°-120°	300.9	4.2
120°-130°	395.7	5.5
130°-140°	444.2	6.2
140°-150°	435.6	6.1
150°-160°	365.4	5.1
160°-170°	242.3	3.4
170°-180°	84.7	1.2
0°-30°	1371.9	19.1
0°-40°	2200.7	30.7
0°-60°	3750.4	52.3
0°-90°	4668.1	65.1
90°-120°	532.1	7.4
90°-150°	1807.5	25.2
90°-180°	2500.0	34.9
0°-180°	7168.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1834	1834	1834	1834	1834	
5°	1834	1827	1807	1821	1818	174
15°	1746	1735	1712	1719	1710	492
25°	1580	1566	1536	1539	1536	727
35°	1363	1346	1317	1307	1298	851
45°	1109	1097	1070	1051	1044	856
55°	839	829	808	786	778	750
65°	566	555	538	522	513	560
75°	296	293	284	273	277	316
85°	72	70	69	63	62	81
90°	1	10	26	25	26	7
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°	1833.7	1833.7	1833.7	1833.7	1833.7
2.5°	1844.4	1835.6	1816.2	1833.7	1830.4
5°	1833.7	1826.8	1807.3	1821.4	1818.1
7.5°	1821.4	1810.9	1791.5	1805.7	1802.1
10°	1802.1	1789.8	1768.7	1782.6	1777.4
12.5°	1775.6	1765.1	1744.0	1752.8	1749.2
15°	1745.6	1735.1	1712.1	1719.3	1710.4
17.5°	1708.5	1698.1	1675.1	1683.9	1675.1
20°	1668.0	1657.6	1632.9	1638.0	1631.2
22.5°	1627.6	1611.7	1588.7	1588.7	1585.1
25°	1579.9	1565.8	1535.9	1539.3	1535.9
27.5°	1526.9	1514.6	1491.8	1486.5	1477.7
30°	1474.1	1460.0	1433.6	1428.3	1421.3
32.5°	1417.7	1407.2	1378.9	1368.3	1361.2
35°	1363.0	1345.5	1317.2	1306.6	1297.8
37.5°	1301.3	1285.4	1257.2	1244.8	1236.0
40°	1237.9	1223.7	1195.4	1179.7	1172.6
42.5°	1176.2	1162.0	1133.9	1116.1	1105.6
45°	1109.2	1096.8	1070.3	1051.0	1043.9
47.5°	1043.9	1031.5	1003.3	983.8	973.4
50°	975.1	966.3	941.6	916.9	908.0
52.5°	908.0	895.7	872.9	853.5	841.1
55°	839.4	828.8	807.6	786.5	777.7
57.5°	770.5	761.8	738.8	717.7	710.5
60°	701.7	694.8	670.1	650.6	645.5
62.5°	634.8	622.5	604.8	587.2	580.1
65°	566.1	555.4	537.8	522.0	513.1
67.5°	495.6	486.6	470.9	458.5	451.4
70°	430.3	423.2	407.3	394.9	388.0
72.5°	363.4	356.2	347.4	335.1	329.8
75°	296.1	292.8	283.8	273.3	276.9
77.5°	236.3	229.1	225.6	220.4	215.2
80°	176.4	174.6	171.0	165.8	162.2
82.5°	119.9	119.9	118.2	111.1	111.1
85°	72.2	70.5	68.8	63.4	61.7
87.5°	31.8	28.3	24.7	19.4	17.6
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

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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	13.24	14.25	14.05	15.09	16.13	12.80	13.81	13.61	14.65	15.69
	3H	14.89	15.80	15.72	16.65	17.71	14.41	15.32	15.24	16.17	17.23
	4H	15.47	16.33	16.31	17.19	18.26	14.99	15.85	15.83	16.70	17.78
	6H	15.86	16.66	16.72	17.52	18.61	15.37	16.17	16.23	17.03	18.12
	8H	15.96	16.72	16.83	17.60	18.69	15.48	16.23	16.34	17.11	18.20
	12H	16.01	16.73	16.88	17.60	18.72	15.52	16.24	16.39	17.11	18.23
4H	2H	13.71	14.57	14.56	15.42	16.50	13.36	14.22	14.21	15.07	16.15
	3H	15.56	16.28	16.42	17.17	18.26	15.16	15.88	16.02	16.77	17.86
	4H	16.27	16.92	17.14	17.81	18.93	15.85	16.51	16.73	17.39	18.51
	6H	16.77	17.34	17.66	18.25	19.37	16.35	16.92	17.24	17.83	18.95
	8H	16.91	17.44	17.81	18.35	19.48	16.49	17.02	17.38	17.92	19.06
	12H	16.99	17.46	17.90	18.38	19.53	16.55	17.03	17.46	17.95	19.09
8H	4H	16.46	16.99	17.36	17.90	19.03	16.10	16.63	16.99	17.53	18.66
	6H	17.08	17.52	18.00	18.46	19.60	16.70	17.14	17.62	18.09	19.22
	8H	17.29	17.67	18.21	18.61	19.76	16.91	17.29	17.83	18.23	19.38
	12H	17.41	17.75	18.34	18.68	19.89	17.01	17.36	17.95	18.29	19.49
12H	4H	16.45	16.93	17.37	17.85	18.99	16.09	16.57	17.01	17.49	18.63
	6H	17.10	17.49	18.03	18.43	19.58	16.74	17.13	17.67	18.07	19.22
	8H	17.34	17.68	18.27	18.61	19.81	16.97	17.31	17.90	18.24	19.44