

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: P905637

Luminaire Tested: DFN2DIP-PN2F0-050D020US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905637
REPORT IS A COMBINATION OF REPORTS P900987 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-050D020US835-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

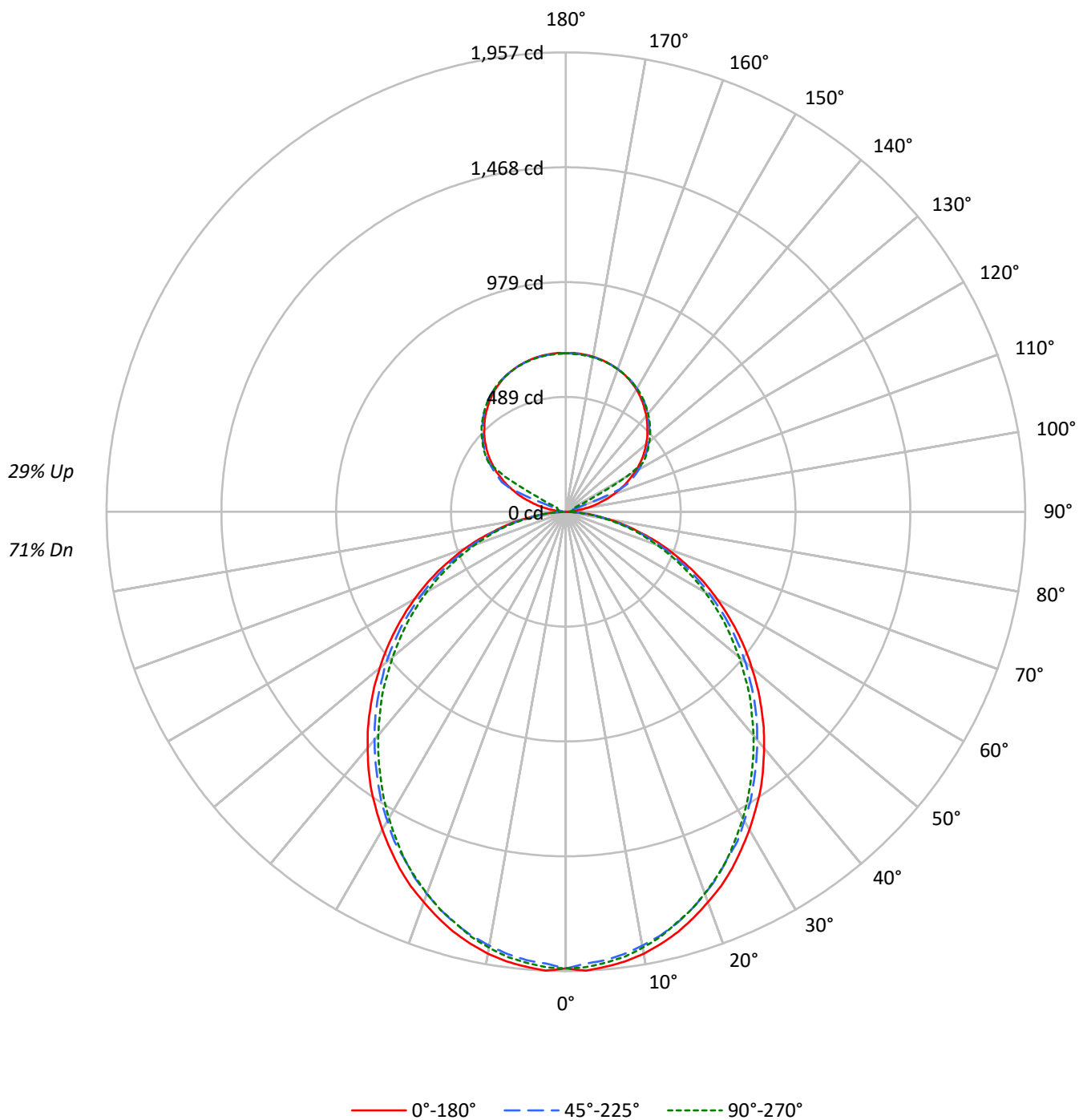
Lumens per Lamp: N/A
Luminaire Lumens: 6930.0 lumens
Efficiency: N/A
Efficacy: 103.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 67
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	112	112	112	112	106	106	106	106	95	95	95	85	85	85	76	76	76
1	103	98	94	90	97	93	90	86	84	81	78	75	73	71	67	66	64
2	93	86	79	74	88	81	76	71	73	69	65	66	62	59	59	56	54
3	85	75	68	62	80	72	65	59	65	59	55	58	54	50	52	49	46
4	78	67	59	52	74	64	56	50	58	52	47	52	47	43	47	43	40
5	72	60	51	45	68	57	49	44	52	45	40	47	42	38	42	38	35
6	66	54	45	39	63	51	44	38	47	40	35	42	37	33	38	34	31
7	61	49	40	35	58	47	39	34	42	36	31	39	33	29	35	31	27
8	57	44	36	31	54	42	35	30	39	33	28	35	30	26	32	28	24
9	53	41	33	28	50	39	32	27	36	30	25	33	27	24	30	25	22
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	28	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4214	4214	4214
5°	4214	4146	4177
10°	4173	4081	4114
15°	4105	4005	4020
20°	4015	3903	3923
25°	3926	3782	3812
30°	3815	3669	3674
35°	3710	3538	3527
40°	3582	3405	3387
45°	3453	3271	3243
50°	3313	3129	3077
55°	3165	2967	2924
60°	2998	2775	2747
65°	2814	2574	2540
70°	2581	2330	2315
75°	2260	2037	2098
80°	1871	1664	1702
85°	1269	1051	1067

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3453 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.1	2.6
10°-20°	515.2	7.4
20°-30°	757.2	10.9
30°-40°	879.4	12.7
40°-50°	878.3	12.7
50°-60°	765.8	11.1
60°-70°	566.1	8.2
70°-80°	320.3	4.6
80°-90°	85.7	1.2
90°-100°	22.3	0.3
100°-110°	83.0	1.2
110°-120°	220.1	3.2
120°-130°	365.0	5.3
130°-140°	387.7	5.6
140°-150°	360.3	5.2
150°-160°	289.7	4.2
160°-170°	186.7	2.7
170°-180°	64.2	0.9
0°-30°	1455.5	21.0
0°-40°	2334.9	33.7
0°-60°	3979.0	57.4
0°-90°	4951.2	71.4
90°-120°	325.3	4.7
90°-150°	1438.2	20.8
90°-180°	1979.0	28.6
0°-180°	6930.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1946	1946	1946	1946	1946	
5°	1946	1938	1918	1932	1929	185
15°	1852	1841	1816	1824	1815	522
25°	1676	1661	1630	1633	1630	771
35°	1446	1428	1398	1386	1377	903
45°	1177	1164	1136	1115	1108	908
55°	891	879	857	834	825	796
65°	601	589	571	554	544	594
75°	314	311	301	290	294	335
85°	77	75	73	67	66	85
90°	0	6	10	12	13	6
95°	32	16	19	22	21	38
105°	148	163	30	35	37	159
115°	281	289	301	75	40	276
125°	397	403	413	416	418	354
135°	491	499	504	508	508	380
145°	570	570	578	581	579	356
155°	628	623	629	632	628	289
165°	661	658	660	663	660	187
175°	676	673	674	677	672	64
180°	675	675	675	675	675	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1945.5	1945.5	1945.5	1945.5	1945.5
2.5°	1956.8	1947.5	1926.9	1945.5	1942.0
5°	1945.5	1938.2	1917.5	1932.4	1928.9
7.5°	1932.4	1921.3	1900.7	1915.8	1912.0
10°	1912.0	1898.9	1876.5	1891.3	1885.8
12.5°	1883.8	1872.7	1850.3	1859.6	1855.8
15°	1852.0	1840.9	1816.5	1824.1	1814.7
17.5°	1812.7	1801.6	1777.2	1786.5	1777.2
20°	1769.7	1758.6	1732.4	1737.9	1730.6
22.5°	1726.8	1709.9	1685.5	1685.5	1681.7
25°	1676.2	1661.3	1629.5	1633.1	1629.5
27.5°	1620.0	1606.9	1582.7	1577.1	1567.8
30°	1564.0	1549.0	1521.0	1515.4	1507.9
32.5°	1504.1	1493.0	1463.0	1451.7	1444.2
35°	1446.1	1427.5	1397.5	1386.2	1376.9
37.5°	1380.6	1363.8	1333.8	1320.7	1311.4
40°	1313.4	1298.3	1268.3	1251.6	1244.1
42.5°	1247.9	1232.8	1203.0	1184.1	1173.0
45°	1176.8	1163.7	1135.5	1115.1	1107.5
47.5°	1107.5	1094.4	1064.5	1043.8	1032.7
50°	1034.5	1025.2	999.0	972.8	963.4
52.5°	963.4	950.3	926.1	905.5	892.4
55°	890.6	879.3	856.8	834.4	825.1
57.5°	817.5	808.2	783.8	761.4	753.8
60°	744.5	737.2	711.0	690.3	684.8
62.5°	673.5	660.4	641.7	623.0	615.5
65°	600.6	589.3	570.6	553.8	544.4
67.5°	525.8	516.3	499.6	486.5	478.9
70°	456.5	449.0	432.1	419.0	411.7
72.5°	385.5	377.9	368.6	355.5	349.9
75°	314.2	310.6	301.1	290.0	293.8
77.5°	250.7	243.1	239.4	233.8	228.3
80°	187.2	185.2	181.4	175.9	172.1
82.5°	127.2	127.2	125.4	117.9	117.9
85°	76.6	74.8	73.0	67.3	65.5
87.5°	33.7	30.0	26.2	20.6	18.7
90°	0.5	5.9	9.7	12.2	13.2
92.5°	12.2	10.3	11.7	12.7	13.2
95°	31.7	15.6	19.0	21.5	21.0
97.5°	57.1	17.1	24.9	26.4	26.9
100°	86.5	19.5	27.8	31.7	32.7
102.5°	118.7	117.7	28.8	34.2	35.7
105°	148.5	163.1	29.8	35.1	37.1
107.5°	183.2	195.3	30.8	36.1	38.1
110°	216.4	226.6	85.5	36.7	38.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	247.6	256.4	248.1	37.6	39.1
115°	280.8	289.1	301.4	75.2	40.1
117.5°	309.6	319.4	327.7	257.9	129.9
120°	341.9	349.2	358.0	363.9	297.9
122.5°	369.2	377.0	386.8	389.7	390.3
125°	397.1	403.4	412.7	416.1	417.6
127.5°	422.5	429.3	436.7	441.5	442.0
130°	446.4	454.2	459.6	465.0	464.5
132.5°	470.8	477.2	482.5	486.9	486.5
135°	491.4	499.2	503.5	508.5	507.5
137.5°	512.8	518.7	523.6	528.5	527.0
140°	533.8	537.8	543.1	547.5	545.1
142.5°	551.4	554.9	561.2	565.1	562.6
145°	570.0	569.5	577.8	581.2	578.8
147.5°	586.1	584.6	592.9	595.3	593.4
150°	601.7	598.3	606.1	609.0	606.6
152.5°	614.9	611.0	618.3	621.3	617.8
155°	627.6	623.2	629.1	632.0	628.1
157.5°	637.9	634.0	638.4	641.8	637.9
160°	646.7	643.7	646.7	649.6	646.2
162.5°	654.4	651.5	654.0	657.4	653.0
165°	661.3	658.4	659.8	663.3	659.8
167.5°	666.7	663.7	665.2	668.7	664.2
170°	671.1	668.1	669.1	672.5	668.1
172.5°	674.0	671.1	672.1	675.5	671.1
175°	676.4	673.0	674.0	677.4	672.5
177.5°	677.4	674.0	674.5	677.9	673.5
180°	675.0	675.0	675.0	675.0	675.0

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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	13.93	15.03	14.68	15.80	16.72	13.49	14.59	14.24	15.36	16.29
	3H	15.59	16.57	16.35	17.35	18.31	15.11	16.09	15.87	16.87	17.83
	4H	16.17	17.10	16.95	17.89	18.86	15.69	16.62	16.47	17.41	18.38
	6H	16.57	17.43	17.36	18.22	19.21	16.08	16.94	16.88	17.74	18.72
	8H	16.67	17.49	17.48	18.31	19.29	16.19	17.00	16.99	17.82	18.81
	12H	16.72	17.50	17.53	18.31	19.32	16.23	17.01	17.04	17.82	18.83
4H	2H	14.41	15.34	15.19	16.13	17.10	14.06	14.99	14.84	15.78	16.75
	3H	16.27	17.05	17.07	17.87	18.86	15.87	16.65	16.67	17.47	18.46
	4H	16.98	17.69	17.79	18.51	19.52	16.57	17.27	17.38	18.10	19.11
	6H	17.49	18.10	18.32	18.95	19.97	17.07	17.68	17.90	18.53	19.55
	8H	17.64	18.21	18.47	19.05	20.08	17.21	17.78	18.04	18.63	19.66
	12H	17.71	18.22	18.56	19.09	20.13	17.28	17.79	18.13	18.65	19.69
8H	4H	17.19	17.76	18.02	18.60	19.63	16.82	17.39	17.65	18.23	19.26
	6H	17.80	18.27	18.66	19.16	20.19	17.43	17.90	18.29	18.79	19.82
	8H	18.01	18.43	18.88	19.31	20.36	17.63	18.05	18.50	18.93	19.98
	12H	18.14	18.51	19.01	19.38	20.49	17.74	18.11	18.62	18.99	20.09
12H	4H	17.18	17.69	18.03	18.56	19.60	16.82	17.33	17.67	18.20	19.23
	6H	17.83	18.25	18.70	19.13	20.18	17.47	17.89	18.34	18.77	19.82
	8H	18.07	18.44	18.94	19.31	20.41	17.70	18.07	18.57	18.94	20.04