

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: P918658

Luminaire Tested: DFN2DIP-4P4F0-030D070US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918658
REPORT IS A COMBINATION OF REPORTS P899127 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D070US935-FLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

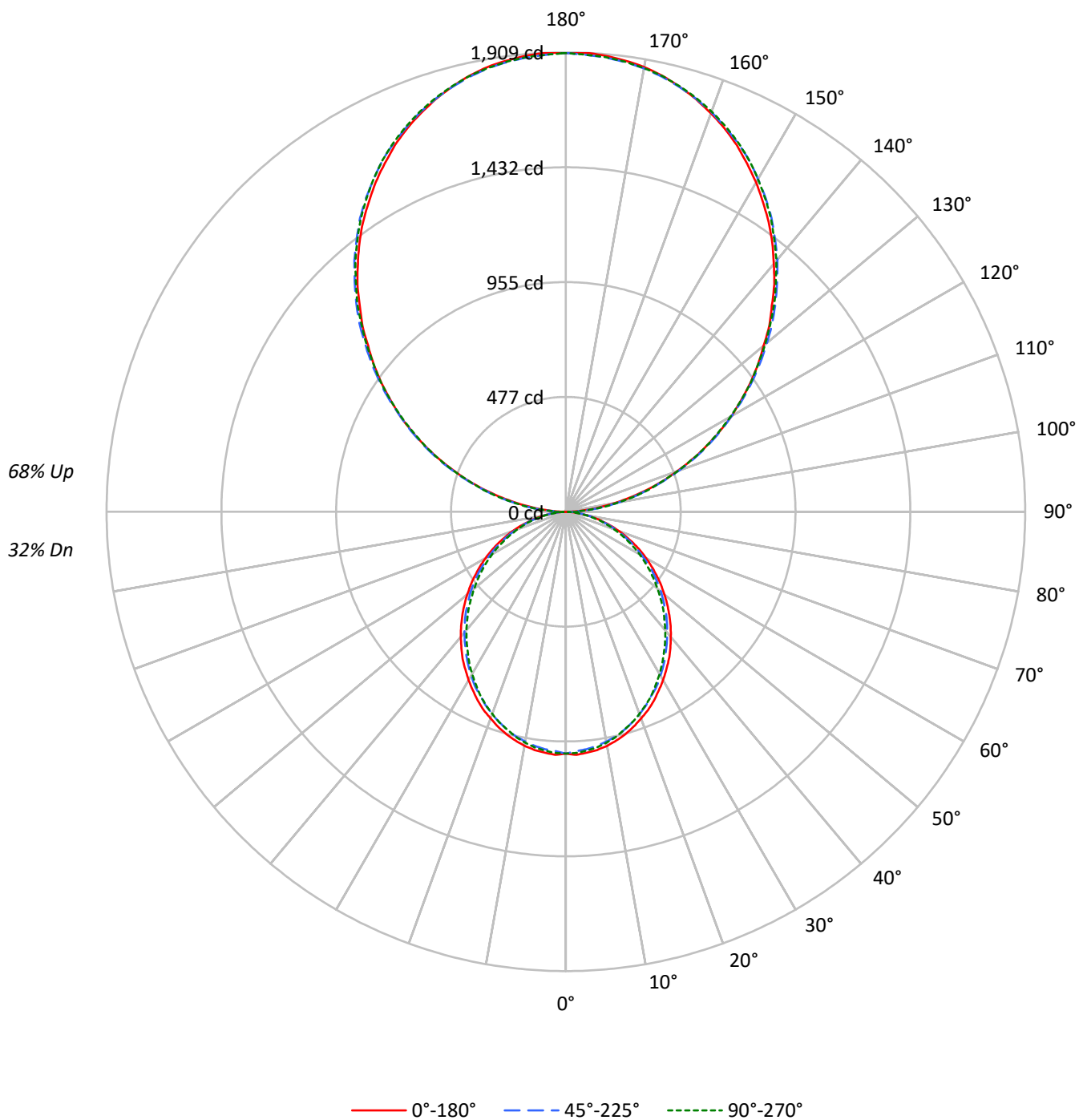
Lumens per Lamp: N/A
Luminaire Lumens: 7891.1 lumens
Efficiency: N/A
Efficacy: 88.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 88.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	82	84	81	78	75	64	62	60	49	48	47	35	34	34
2	85	78	72	67	77	71	66	61	56	53	50	43	41	39	31	30	28
3	78	69	62	56	70	62	56	51	50	45	42	38	35	33	28	26	24
4	71	61	53	47	64	55	48	43	44	39	36	34	31	28	25	23	21
5	65	54	46	40	59	49	42	37	39	34	31	30	27	24	22	20	18
6	60	48	40	35	54	44	37	32	35	30	27	27	24	21	20	18	16
7	55	43	36	30	50	40	33	28	32	27	23	25	21	19	18	16	14
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	14	13
9	48	36	29	24	43	33	26	22	27	22	18	21	17	15	15	13	11
10	44	33	26	21	40	30	24	20	24	20	16	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	652	652	652
5°	653	643	647
10°	648	635	639
15°	638	624	626
20°	626	610	612
25°	613	593	596
30°	597	577	575
35°	582	558	554
40°	563	539	533
45°	544	520	512
50°	524	500	488
55°	503	477	466
60°	479	450	440
65°	453	421	410
70°	419	387	378
75°	373	345	349
80°	317	292	292
85°	230	201	196

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1443 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.6	1.2
10°-20°	266.2	3.4
20°-30°	391.1	5.0
30°-40°	454.3	5.8
40°-50°	453.7	5.7
50°-60°	395.6	5.0
60°-70°	292.5	3.7
70°-80°	165.5	2.1
80°-90°	49.1	0.6
90°-100°	117.9	1.5
100°-110°	374.8	4.7
110°-120°	641.3	8.1
120°-130°	843.5	10.7
130°-140°	946.7	12.0
140°-150°	928.4	11.8
150°-160°	778.8	9.9
160°-170°	516.5	6.5
170°-180°	180.5	2.3
0°-30°	751.9	9.5
0°-40°	1206.2	15.3
0°-60°	2055.6	26.0
0°-90°	2562.6	32.5
90°-120°	1134.1	14.4
90°-150°	3852.7	48.8
90°-180°	5328.0	67.5
0°-180°	7891.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1005	1005	1005	1005	1005	
5°	1005	1001	991	998	996	95
15°	957	951	938	942	938	269
25°	866	858	842	844	842	398
35°	747	737	722	716	711	467
45°	608	601	587	576	572	469
55°	460	454	443	431	426	411
65°	310	304	295	286	281	307
75°	162	160	156	150	152	173
85°	40	39	38	35	34	44
90°	2	21	56	53	55	8
95°	84	100	103	103	100	93
105°	346	350	354	357	357	365
115°	644	653	650	648	644	637
125°	936	950	946	941	939	837
135°	1211	1229	1232	1230	1226	936
145°	1470	1481	1491	1492	1486	918
155°	1681	1685	1691	1699	1694	774
165°	1828	1827	1827	1838	1830	516
175°	1903	1898	1895	1906	1896	181
180°	1906	1906	1906	1906	1906	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1005.0	1005.0	1005.0	1005.0	1005.0
2.5°	1010.9	1006.1	995.4	1005.0	1003.2
5°	1005.0	1001.3	990.6	998.3	996.4
7.5°	998.3	992.6	981.9	989.7	987.7
10°	987.7	980.9	969.4	977.1	974.2
12.5°	973.2	967.4	955.9	960.6	958.7
15°	956.7	951.1	938.4	942.3	937.5
17.5°	936.4	930.7	918.1	922.9	918.1
20°	914.2	908.4	894.9	897.8	894.0
22.5°	892.1	883.4	870.7	870.7	868.7
25°	865.9	858.2	841.8	843.7	841.8
27.5°	836.9	830.1	817.6	814.8	809.9
30°	808.0	800.2	785.7	782.8	778.9
32.5°	777.1	771.3	755.8	749.9	746.1
35°	747.1	737.4	721.9	716.1	711.3
37.5°	713.3	704.6	689.1	682.3	677.4
40°	678.5	670.7	655.2	646.6	642.7
42.5°	644.6	636.9	621.5	611.7	606.0
45°	608.0	601.1	586.6	576.0	572.1
47.5°	572.1	565.4	549.9	539.2	533.5
50°	534.4	529.6	516.1	502.6	497.7
52.5°	497.7	490.9	478.5	467.8	461.0
55°	460.1	454.3	442.6	431.1	426.3
57.5°	422.3	417.5	404.9	393.3	389.4
60°	384.6	380.8	367.3	356.6	353.8
62.5°	347.9	341.1	331.5	321.8	318.0
65°	310.3	304.4	294.8	286.1	281.3
67.5°	271.6	266.7	258.0	251.3	247.5
70°	235.8	232.0	223.3	216.5	212.7
72.5°	199.1	195.2	190.4	183.7	180.8
75°	162.3	160.5	155.6	149.8	151.8
77.5°	129.5	125.6	123.6	120.8	118.0
80°	96.7	95.7	93.7	90.8	88.9
82.5°	65.7	65.7	64.8	60.9	60.9
85°	39.6	38.7	37.7	34.8	33.8
87.5°	17.4	15.5	13.5	10.7	9.6
90°	1.7	20.7	56.3	52.9	54.6
92.5°	35.6	48.3	50.0	51.7	51.7
95°	83.9	100.0	102.9	102.9	100.0
97.5°	139.7	154.5	160.9	160.9	160.9
100°	204.0	217.2	221.8	221.8	220.1
102.5°	271.8	281.5	287.9	289.6	287.9
105°	345.9	350.5	354.0	356.9	356.9
107.5°	419.5	426.4	426.4	427.6	419.5
110°	490.8	500.0	500.0	500.0	495.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	567.7	577.6	575.8	571.2	567.7
115°	643.6	652.8	650.0	648.2	643.6
117.5°	718.8	731.5	723.5	718.8	714.3
120°	794.7	807.4	794.7	794.7	789.5
122.5°	863.7	879.8	871.8	867.1	863.7
125°	936.1	950.5	945.9	940.7	939.0
127.5°	1006.8	1024.6	1018.3	1011.4	1006.8
130°	1072.9	1093.6	1090.7	1087.3	1080.9
132.5°	1147.0	1163.1	1164.2	1156.2	1151.6
135°	1210.8	1228.6	1232.1	1230.3	1225.7
137.5°	1282.0	1296.4	1299.2	1298.1	1291.2
140°	1344.7	1359.1	1367.1	1367.1	1360.8
142.5°	1409.0	1423.4	1428.0	1429.7	1423.4
145°	1470.0	1481.4	1490.6	1492.4	1486.1
147.5°	1524.6	1538.9	1545.8	1548.7	1542.4
150°	1580.9	1590.6	1597.0	1602.1	1597.0
152.5°	1630.8	1640.6	1648.6	1655.0	1648.6
155°	1680.8	1685.4	1690.7	1698.7	1693.5
157.5°	1724.0	1727.4	1730.3	1741.8	1733.7
160°	1762.5	1765.9	1767.6	1777.4	1770.5
162.5°	1798.1	1798.1	1799.8	1810.7	1802.7
165°	1828.5	1826.8	1826.8	1838.3	1830.2
167.5°	1856.1	1851.0	1851.0	1862.4	1854.4
170°	1876.8	1872.2	1870.5	1882.0	1872.2
172.5°	1891.2	1886.5	1884.8	1896.3	1886.5
175°	1902.6	1898.1	1894.6	1906.1	1896.3
177.5°	1909.0	1904.4	1900.9	1910.7	1900.9
180°	1906.1	1906.1	1906.1	1906.1	1906.1

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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	3.91	4.64	5.01	5.73	7.23	3.47	4.19	4.56	5.29	6.79
	3H	5.57	6.22	6.67	7.32	8.84	5.08	5.73	6.18	6.83	8.35
	4H	6.16	6.77	7.27	7.87	9.40	5.66	6.28	6.77	7.38	8.90
	6H	6.55	7.12	7.67	8.22	9.76	6.05	6.62	7.17	7.72	9.26
	8H	6.66	7.19	7.78	8.31	9.84	6.15	6.69	7.28	7.81	9.34
	12H	6.70	7.21	7.83	8.33	9.88	6.19	6.70	7.32	7.82	9.37
4H	2H	4.36	4.98	5.48	6.08	7.60	4.01	4.62	5.13	5.72	7.25
	3H	6.22	6.73	7.35	7.86	9.40	5.81	6.33	6.94	7.45	8.99
	4H	6.93	7.40	8.06	8.52	10.08	6.51	6.98	7.64	8.10	9.66
	6H	7.45	7.85	8.58	8.99	10.54	7.01	7.42	8.15	8.56	10.11
	8H	7.59	7.97	8.73	9.10	10.67	7.16	7.54	8.29	8.67	10.23
	12H	7.66	8.01	8.82	9.15	10.72	7.21	7.56	8.37	8.70	10.27
8H	4H	7.12	7.50	8.26	8.63	10.19	6.74	7.12	7.88	8.25	9.82
	6H	7.75	8.06	8.91	9.24	10.80	7.37	7.68	8.53	8.85	10.42
	8H	7.97	8.25	9.14	9.40	10.98	7.58	7.85	8.75	9.01	10.59
	12H	8.10	8.34	9.27	9.49	11.11	7.69	7.93	8.86	9.08	10.70
12H	4H	7.10	7.44	8.25	8.58	10.15	6.73	7.07	7.88	8.22	9.79
	6H	7.78	8.05	8.94	9.21	10.79	7.41	7.68	8.57	8.84	10.42
	8H	8.02	8.26	9.19	9.41	11.03	7.64	7.88	8.81	9.03	10.65

END OF REPORT