

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: P916690

Luminaire Tested: DFN2DIP-PN3F0-060D070US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916690
REPORT IS A COMBINATION OF REPORTS P899574 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-060D070US930-RLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

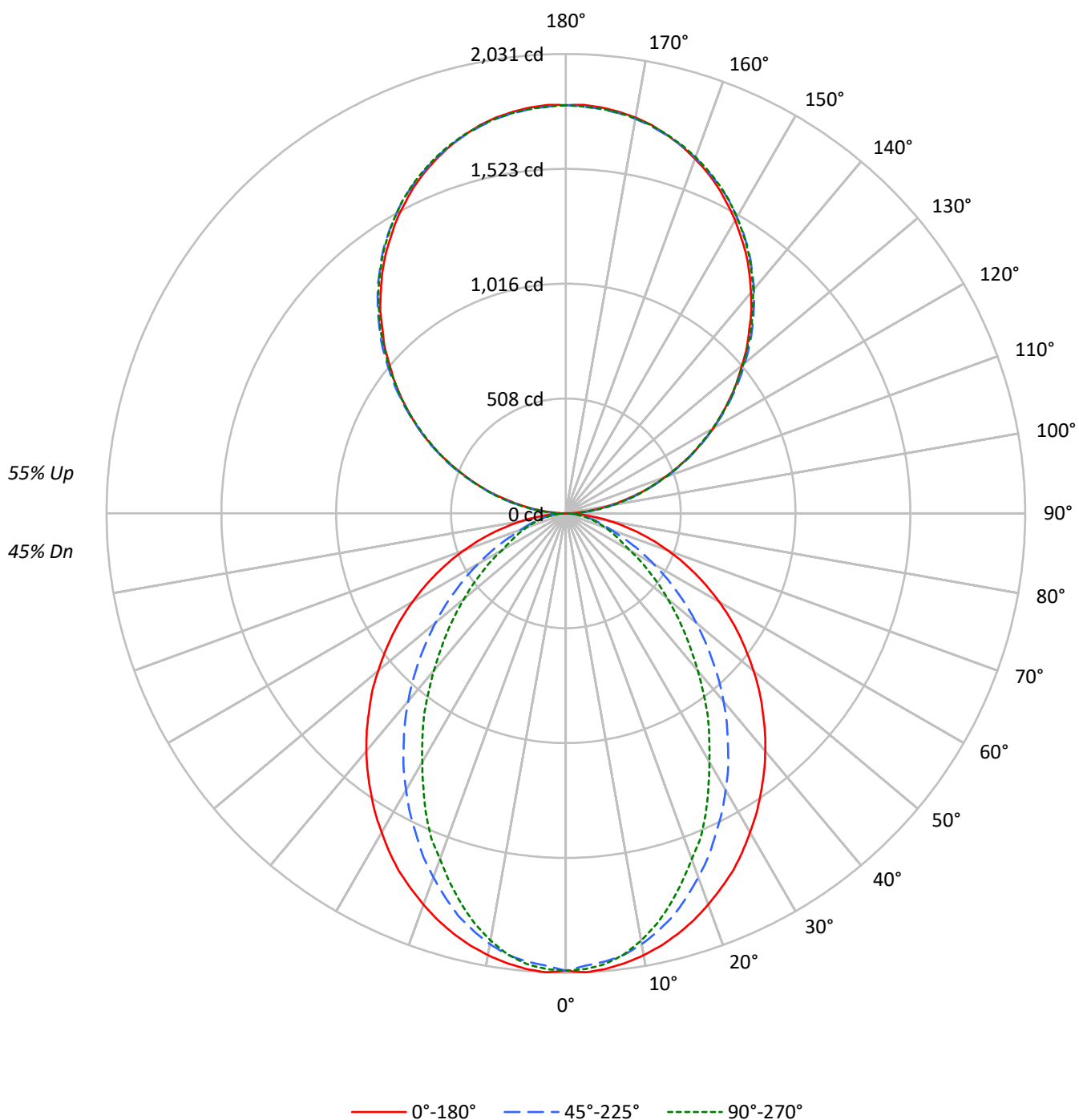
Lumens per Lamp: N/A
Luminaire Lumens: 9208.8 lumens
Efficiency: N/A
Efficacy: 82.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 111.3
Input Voltage (V):
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	50	30	10
RCR																				
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45		
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	44	39		
2	89	82	76	71	81	75	70	66	63	59	56	52	49	47	41	40	38	33		
3	81	72	65	60	74	67	60	56	56	51	48	46	43	40	37	35	33	29		
4	75	64	57	51	68	59	53	47	50	45	41	41	38	35	33	31	29	25		
5	69	57	50	44	63	53	46	41	45	40	36	37	33	30	30	28	25	22		
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20		
7	59	47	39	34	54	43	36	32	37	32	28	31	27	24	25	22	20	18		
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18	16		
9	51	39	32	27	47	36	30	25	31	26	22	26	22	19	22	19	17	14		
10	47	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15	13		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2363	2363	2363
5°	2366	2324	2340
10°	2341	2277	2263
15°	2307	2200	2144
20°	2263	2095	1999
25°	2218	1977	1859
30°	2158	1857	1681
35°	2099	1727	1525
40°	2039	1593	1347
45°	1969	1445	1185
50°	1897	1296	1027
55°	1822	1136	875
60°	1734	970	719
65°	1634	801	646
70°	1511	643	583
75°	1357	563	529
80°	1135	467	455
85°	771	304	336

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1969 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.5	2.1
10°-20°	520.2	5.6
20°-30°	730.3	7.9
30°-40°	796.1	8.6
40°-50°	731.7	7.9
50°-60°	574.6	6.2
60°-70°	374.0	4.1
70°-80°	192.5	2.1
80°-90°	54.3	0.6
90°-100°	111.7	1.2
100°-110°	354.9	3.9
110°-120°	607.3	6.6
120°-130°	798.7	8.7
130°-140°	896.5	9.7
140°-150°	879.1	9.5
150°-160°	737.5	8.0
160°-170°	489.1	5.3
170°-180°	170.9	1.9
0°-30°	1439.9	15.6
0°-40°	2236.0	24.3
0°-60°	3542.3	38.5
0°-90°	4163.1	45.2
90°-120°	1073.9	11.7
90°-150°	3648.2	39.6
90°-180°	5046.0	54.8
0°-180°	9208.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2022	2022	2022	2022	2022	
5°	2022	2013	1989	2005	2000	192
15°	1923	1903	1841	1806	1788	542
25°	1746	1687	1566	1491	1464	803
35°	1504	1411	1250	1134	1094	941
45°	1230	1107	915	785	741	950
55°	935	792	595	485	450	835
65°	631	483	318	256	251	626
75°	337	208	146	134	132	356
85°	79	40	35	35	35	90
90°	2	20	53	50	52	9
95°	79	95	97	97	95	88
105°	328	332	335	338	338	346
115°	609	618	616	614	609	603
125°	886	900	896	891	889	792
135°	1147	1163	1167	1165	1161	886
145°	1392	1403	1412	1413	1407	870
155°	1592	1596	1601	1608	1604	733
165°	1731	1730	1730	1741	1733	488
175°	1802	1797	1794	1805	1796	171
180°	1805	1805	1805	1805	1805	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2021.8	2021.8	2021.8	2021.8	2021.8
2.5°	2030.9	2021.8	2001.6	2020.0	2016.3
5°	2021.8	2012.6	1988.8	2005.3	1999.8
7.5°	2005.3	1994.4	1968.8	1976.0	1966.8
10°	1983.3	1970.5	1934.1	1928.4	1917.5
12.5°	1956.0	1939.4	1889.9	1879.1	1858.9
15°	1923.0	1902.7	1840.6	1805.9	1787.6
17.5°	1884.6	1855.2	1778.3	1738.1	1708.9
20°	1840.6	1803.9	1712.5	1666.9	1626.5
22.5°	1793.1	1750.9	1644.8	1582.7	1555.3
25°	1745.6	1686.9	1566.2	1491.3	1463.7
27.5°	1688.9	1626.5	1493.0	1407.0	1364.9
30°	1628.5	1558.8	1412.4	1319.2	1269.7
32.5°	1569.9	1485.6	1335.8	1225.9	1180.1
35°	1504.1	1410.7	1249.8	1134.4	1094.0
37.5°	1440.0	1339.2	1169.2	1042.8	997.2
40°	1372.2	1262.6	1084.9	955.0	907.5
42.5°	1302.8	1185.7	1000.9	865.4	819.8
45°	1229.6	1106.8	914.9	784.8	740.9
47.5°	1160.1	1030.2	832.6	702.5	662.3
50°	1083.2	953.3	752.0	625.7	587.4
52.5°	1008.0	870.8	675.1	554.4	519.7
55°	934.9	792.2	594.6	484.9	450.1
57.5°	860.0	713.5	523.3	420.9	391.5
60°	783.1	636.7	448.3	355.1	325.7
62.5°	708.2	561.8	384.2	296.4	281.8
65°	631.3	483.0	318.4	256.2	250.6
67.5°	558.1	409.8	256.2	225.0	219.6
70°	481.2	338.5	212.1	194.0	186.5
72.5°	408.1	272.6	177.4	162.9	159.1
75°	336.6	208.5	146.3	133.5	131.8
77.5°	265.4	148.1	115.3	107.9	104.3
80°	199.3	106.2	87.7	80.6	80.6
82.5°	139.0	71.4	60.3	56.7	56.7
85°	78.6	40.2	34.7	34.7	34.7
87.5°	29.4	14.6	14.6	12.8	12.8
90°	1.6	19.6	53.3	50.1	51.7
92.5°	33.8	45.7	47.4	49.0	49.0
95°	79.4	94.7	97.4	97.4	94.7
97.5°	132.2	146.3	152.4	152.4	152.4
100°	193.1	205.7	210.0	210.0	208.4
102.5°	257.4	266.6	272.6	274.3	272.6
105°	327.6	331.9	335.2	337.9	337.9
107.5°	397.2	403.7	403.7	404.9	397.2
110°	464.7	473.4	473.4	473.4	469.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	537.6	546.9	545.3	540.9	537.6
115°	609.4	618.2	615.5	613.8	609.4
117.5°	680.7	692.7	685.1	680.7	676.4
120°	752.5	764.5	752.5	752.5	747.6
122.5°	817.8	833.1	825.5	821.1	817.8
125°	886.4	900.0	895.7	890.8	889.2
127.5°	953.3	970.2	964.3	957.7	953.3
130°	1015.9	1035.5	1032.8	1029.6	1023.5
132.5°	1086.1	1101.4	1102.4	1094.9	1090.5
135°	1146.6	1163.3	1166.7	1165.0	1160.7
137.5°	1214.0	1227.6	1230.3	1229.2	1222.7
140°	1273.3	1286.9	1294.5	1294.5	1288.6
142.5°	1334.2	1347.9	1352.2	1353.8	1347.9
145°	1392.0	1402.8	1411.5	1413.2	1407.2
147.5°	1443.6	1457.3	1463.8	1466.5	1460.5
150°	1497.0	1506.2	1512.2	1517.1	1512.2
152.5°	1544.3	1553.6	1561.1	1567.2	1561.1
155°	1591.6	1595.9	1600.9	1608.5	1603.6
157.5°	1632.5	1635.7	1638.4	1649.3	1641.7
160°	1668.9	1672.2	1673.8	1683.0	1676.5
162.5°	1702.7	1702.7	1704.3	1714.6	1707.0
165°	1731.4	1729.8	1729.8	1740.7	1733.1
167.5°	1757.6	1752.7	1752.7	1763.6	1756.0
170°	1777.2	1772.9	1771.2	1782.1	1772.9
172.5°	1790.8	1786.4	1784.8	1795.7	1786.4
175°	1801.6	1797.3	1794.1	1804.9	1795.7
177.5°	1807.7	1803.3	1800.0	1809.3	1800.0
180°	1804.9	1804.9	1804.9	1804.9	1804.9

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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	9.63	10.42	10.63	11.43	12.77	5.60	6.39	6.60	7.40	8.74
	3H	11.30	12.01	12.31	13.03	14.39	6.78	7.48	7.79	8.50	9.87
	4H	11.90	12.57	12.93	13.59	14.96	7.22	7.89	8.25	8.91	10.28
	6H	12.32	12.93	13.35	13.96	15.34	7.53	8.15	8.57	9.18	10.56
	8H	12.44	13.03	13.48	14.07	15.44	7.62	8.21	8.66	9.25	10.63
	12H	12.50	13.05	13.54	14.09	15.49	7.66	8.22	8.71	9.25	10.65
4H	2H	9.64	10.31	10.67	11.33	12.70	6.18	6.85	7.22	7.88	9.25
	3H	11.46	12.02	12.50	13.07	14.45	7.52	8.08	8.56	9.13	10.51
	4H	12.15	12.66	13.19	13.70	15.10	8.06	8.57	9.11	9.62	11.02
	6H	12.65	13.09	13.71	14.16	15.56	8.48	8.91	9.53	9.98	11.38
	8H	12.82	13.23	13.88	14.29	15.71	8.60	9.01	9.66	10.07	11.48
	12H	12.91	13.28	13.99	14.36	15.78	8.66	9.03	9.74	10.10	11.52
8H	4H	12.11	12.52	13.17	13.58	14.99	8.34	8.75	9.40	9.80	11.22
	6H	12.67	13.01	13.75	14.10	15.52	8.85	9.18	9.93	10.28	11.70
	8H	12.88	13.18	13.97	14.26	15.69	9.03	9.33	10.12	10.41	11.85
	12H	13.01	13.27	14.10	14.35	15.82	9.15	9.41	10.24	10.48	11.96
12H	4H	12.06	12.43	13.14	13.50	14.92	8.34	8.71	9.42	9.78	11.20
	6H	12.64	12.94	13.73	14.02	15.45	8.89	9.19	9.98	10.27	11.71
	8H	12.86	13.12	13.95	14.20	15.67	9.10	9.36	10.19	10.44	11.91

END OF REPORT