

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: P916686

Luminaire Tested: DFN2DIP-PN3F0-060D060US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916686
REPORT IS A COMBINATION OF REPORTS P899560 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-060D060US930-RLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

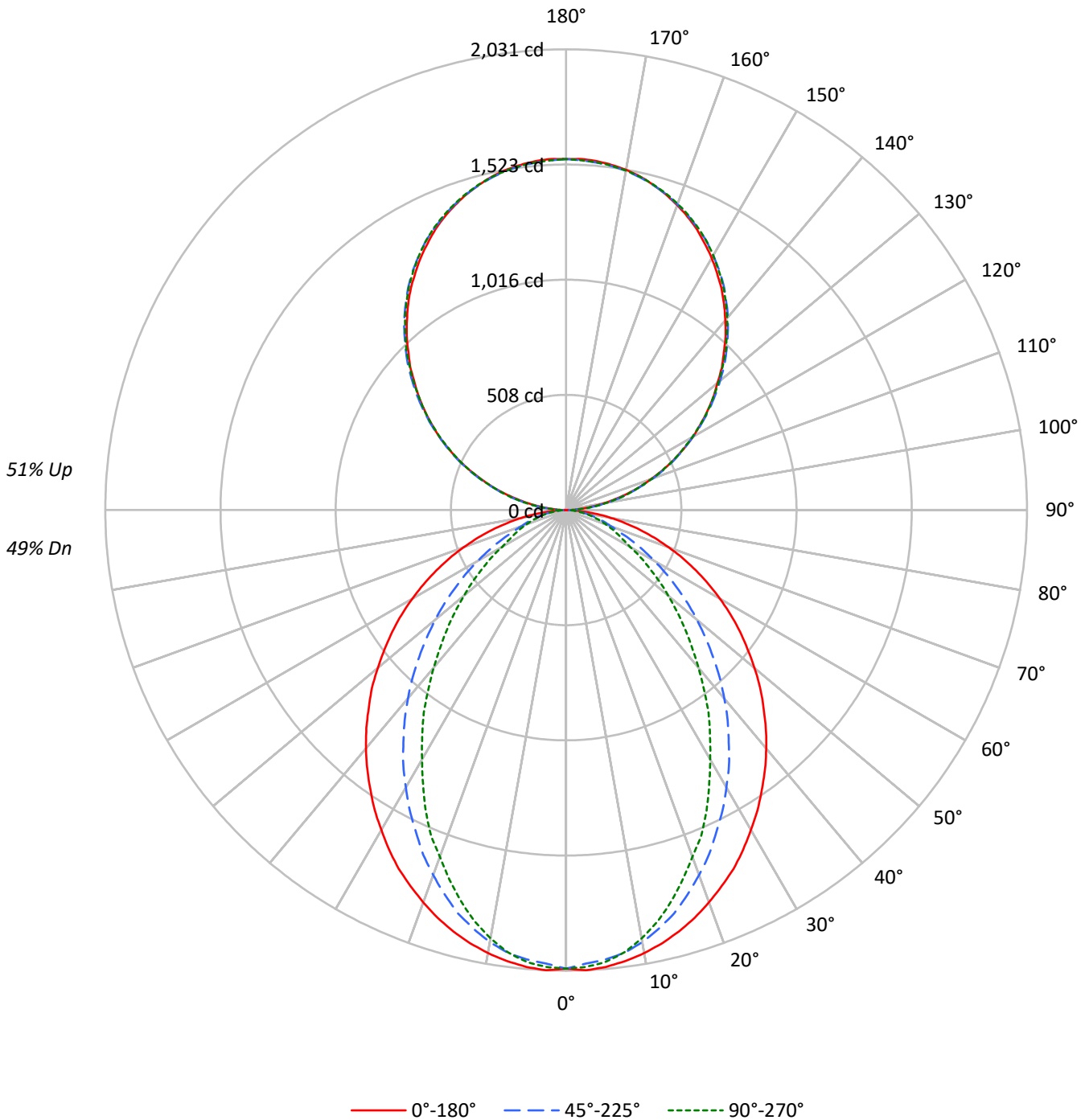
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8487.2 lumens
Efficiency: N/A
Efficacy: 82.4 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): 103
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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55	49			49
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48	42			42
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41	36			36
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35	31			31
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31	27			27
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27	24			24
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24	21			21
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22	19			19
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20	17			17
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18	16			16
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16	14			14

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	2.2
10°-20°	520.2	6.1
20°-30°	730.3	8.6
30°-40°	796.1	9.4
40°-50°	731.7	8.6
50°-60°	574.6	6.8
60°-70°	374.0	4.4
70°-80°	192.5	2.3
80°-90°	53.5	0.6
90°-100°	95.7	1.1
100°-110°	304.2	3.6
110°-120°	520.6	6.1
120°-130°	684.6	8.1
130°-140°	768.4	9.1
140°-150°	753.5	8.9
150°-160°	632.1	7.4
160°-170°	419.2	4.9
170°-180°	146.5	1.7
0°-30°	1439.9	17.0
0°-40°	2236.0	26.3
0°-60°	3542.3	41.7
0°-90°	4162.4	49.0
90°-120°	920.5	10.8
90°-150°	3127.0	36.8
90°-180°	4325.0	51.0
0°-180°	8487.2	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°	1	17	46	43	44	8
95°	68	81	84	84	81	76
105°	281	284	287	290	290	296
115°	522	530	528	526	522	517
125°	760	771	768	764	762	679
135°	983	997	1000	999	995	760
145°	1193	1202	1210	1211	1206	745
155°	1364	1368	1372	1379	1374	628
165°	1484	1483	1483	1492	1486	419
175°	1544	1541	1538	1547	1539	147
180°	1547	1547	1547	1547	1547	



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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°	1.4	16.8	45.7	42.9	44.3
92.5°	28.9	39.2	40.6	42.0	42.0
95°	68.1	81.1	83.5	83.5	81.1
97.5°	113.3	125.5	130.6	130.6	130.6
100°	165.6	176.3	180.0	180.0	178.6
102.5°	220.6	228.5	233.7	235.1	233.7
105°	280.8	284.5	287.3	289.7	289.7
107.5°	340.5	346.1	346.1	347.0	340.5
110°	398.4	405.8	405.8	405.8	402.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	460.8	468.7	467.3	463.6	460.8
115°	522.4	529.9	527.5	526.1	522.4
117.5°	583.5	593.8	587.2	583.5	579.8
120°	645.1	655.3	645.1	645.1	640.8
122.5°	701.0	714.0	707.5	703.8	701.0
125°	759.8	771.4	767.7	763.5	762.1
127.5°	817.2	831.6	826.5	820.9	817.2
130°	870.8	887.6	885.3	882.5	877.3
132.5°	931.0	944.0	944.9	938.4	934.7
135°	982.8	997.2	1000.0	998.6	994.8
137.5°	1040.6	1052.2	1054.6	1053.6	1048.1
140°	1091.4	1103.1	1109.6	1109.6	1104.5
142.5°	1143.6	1155.3	1159.0	1160.4	1155.3
145°	1193.1	1202.4	1209.9	1211.3	1206.2
147.5°	1237.4	1249.0	1254.7	1256.9	1251.8
150°	1283.1	1291.0	1296.2	1300.3	1296.2
152.5°	1323.6	1331.6	1338.1	1343.3	1338.1
155°	1364.2	1368.0	1372.1	1378.8	1374.5
157.5°	1399.2	1402.1	1404.4	1413.7	1407.2
160°	1430.5	1433.3	1434.7	1442.6	1437.0
162.5°	1459.4	1459.4	1460.8	1469.7	1463.1
165°	1484.1	1482.7	1482.7	1492.1	1485.6
167.5°	1506.5	1502.4	1502.4	1511.6	1505.1
170°	1523.3	1519.6	1518.2	1527.5	1519.6
172.5°	1535.0	1531.2	1529.8	1539.1	1531.2
175°	1544.3	1540.6	1537.7	1547.1	1539.1
177.5°	1549.4	1545.7	1542.9	1550.8	1542.9
180°	1547.1	1547.1	1547.1	1547.1	1547.1



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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	10.00	10.83	10.98	11.81	13.10	5.97	6.79	6.94	7.77	9.06
	3H	11.68	12.41	12.66	13.40	14.71	7.15	7.89	8.14	8.88	10.19
	4H	12.28	12.97	13.28	13.97	15.29	7.60	8.29	8.60	9.29	10.61
	6H	12.70	13.34	13.70	14.33	15.66	7.91	8.55	8.92	9.55	10.88
	8H	12.82	13.43	13.83	14.44	15.77	8.00	8.61	9.01	9.63	10.95
	12H	12.88	13.46	13.90	14.47	15.82	8.04	8.62	9.06	9.63	10.98
4H	2H	10.02	10.72	11.02	11.71	13.03	6.56	7.26	7.57	8.25	9.57
	3H	11.84	12.42	12.85	13.44	14.77	7.91	8.48	8.92	9.51	10.84
	4H	12.53	13.06	13.55	14.07	15.43	8.45	8.98	9.47	9.99	11.35
	6H	13.04	13.49	14.07	14.53	15.88	8.86	9.31	9.89	10.35	11.70
	8H	13.21	13.63	14.24	14.66	16.03	8.99	9.41	10.02	10.44	11.81
	12H	13.30	13.68	14.35	14.73	16.10	9.05	9.43	10.09	10.48	11.85
8H	4H	12.49	12.92	13.52	13.95	15.32	8.72	9.15	9.75	10.18	11.54
	6H	13.05	13.40	14.11	14.48	15.84	9.23	9.58	10.29	10.66	12.02
	8H	13.27	13.57	14.33	14.63	16.01	9.42	9.73	10.48	10.79	12.17
	12H	13.40	13.67	14.46	14.72	16.15	9.53	9.80	10.60	10.86	12.28
12H	4H	12.45	12.83	13.49	13.87	15.25	8.73	9.11	9.77	10.16	11.53
	6H	13.03	13.34	14.09	14.39	15.78	9.28	9.59	10.34	10.65	12.03
	8H	13.24	13.51	14.31	14.57	15.99	9.49	9.76	10.55	10.81	12.23