

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: P916836

Luminaire Tested: DFN2DIP-PN4F0-050D080US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916836
REPORT IS A COMBINATION OF REPORTS P899683 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D080US930-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

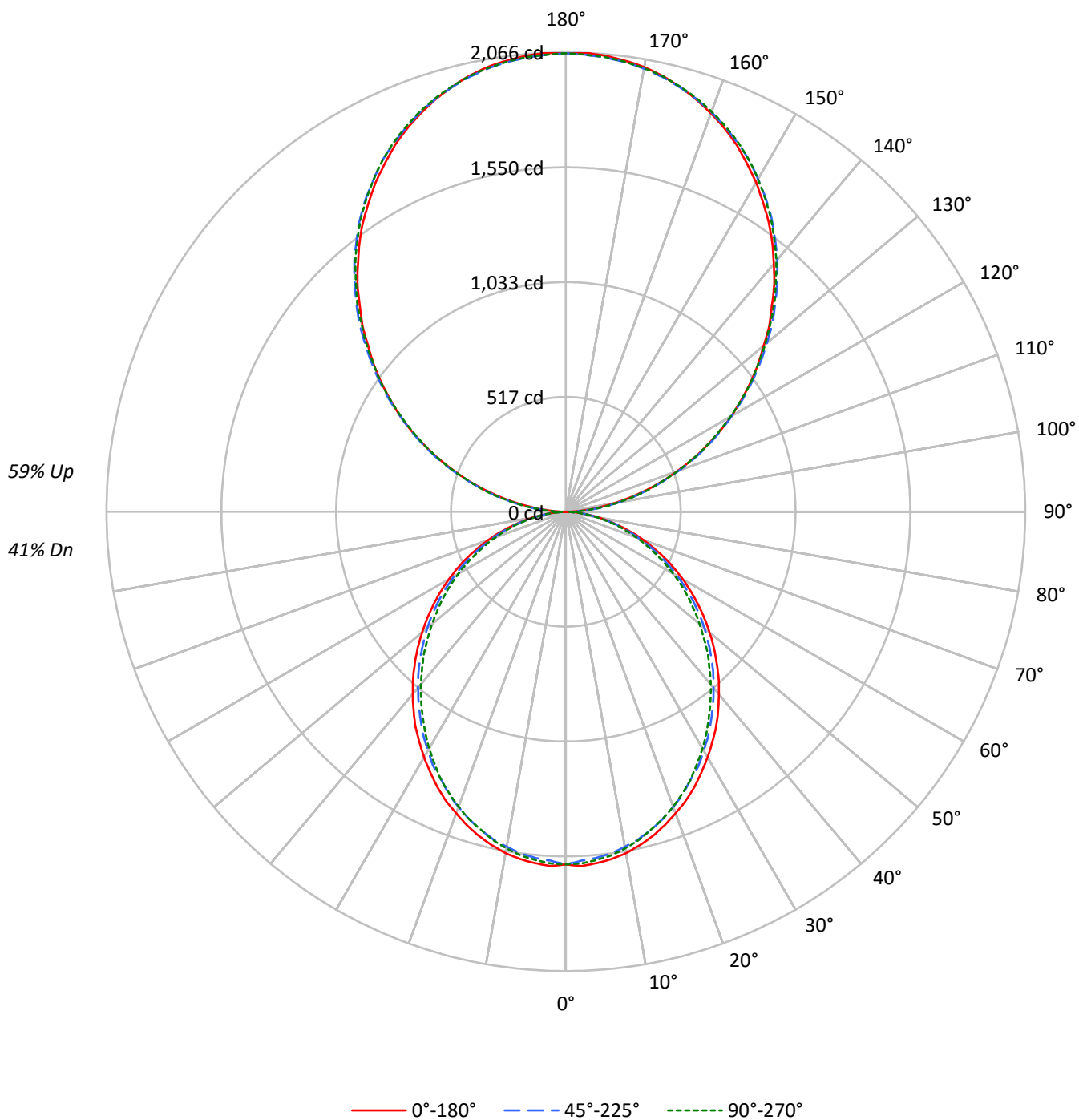
Lumens per Lamp: N/A
Luminaire Lumens: 9808.0 lumens
Efficiency: N/A
Efficacy: 96.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 102
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	105	105	105	105	96	96	96	96	78	78	78	63	63	63	48	48	48
1	96	92	88	84	87	84	80	77	69	66	64	55	53	52	42	41	41
2	87	80	74	69	79	73	68	63	60	56	53	48	46	43	37	36	34
3	80	70	63	57	72	64	58	53	53	48	45	43	39	37	33	31	29
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	30	27	25
5	67	55	47	41	61	51	44	38	42	37	33	34	30	27	27	24	22
6	61	50	42	36	56	46	38	33	38	33	29	31	27	24	24	21	19
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17
8	53	40	33	28	48	37	31	26	31	26	22	26	22	19	20	17	15
9	49	37	30	25	45	34	27	23	29	23	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1158	1158	1158
5°	1160	1142	1150
10°	1150	1127	1134
15°	1133	1108	1110
20°	1111	1083	1086
25°	1088	1052	1057
30°	1059	1023	1021
35°	1032	990	982
40°	999	956	945
45°	966	922	908
50°	930	886	865
55°	892	845	825
60°	849	796	779
65°	802	745	725
70°	743	683	667
75°	660	609	614
80°	561	514	512
85°	406	351	343

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1616 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.3	1.5
10°-20°	420.0	4.3
20°-30°	617.3	6.3
30°-40°	717.0	7.3
40°-50°	716.1	7.3
50°-60°	624.4	6.4
60°-70°	461.6	4.7
70°-80°	261.1	2.7
80°-90°	74.8	0.8
90°-100°	127.6	1.3
100°-110°	405.6	4.1
110°-120°	694.1	7.1
120°-130°	912.8	9.3
130°-140°	1024.6	10.4
140°-150°	1004.7	10.2
150°-160°	842.8	8.6
160°-170°	558.9	5.7
170°-180°	195.4	2.0
0°-30°	1186.6	12.1
0°-40°	1903.6	19.4
0°-60°	3244.1	33.1
0°-90°	4041.6	41.2
90°-120°	1227.3	12.5
90°-150°	4169.4	42.5
90°-180°	5766.0	58.8
0°-180°	9808.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1586	1586	1586	1586	1586	
5°	1586	1580	1563	1576	1573	151
15°	1510	1501	1481	1487	1480	425
25°	1367	1354	1328	1332	1328	629
35°	1179	1164	1139	1130	1123	736
45°	959	949	926	909	903	740
55°	726	717	698	680	673	649
65°	490	480	465	452	444	484
75°	256	253	246	236	240	273
85°	62	61	60	55	53	70
90°	2	22	61	57	59	10
95°	91	108	111	111	108	101
105°	374	379	383	386	386	395
115°	696	706	703	702	696	689
125°	1013	1029	1024	1018	1016	905
135°	1310	1330	1333	1332	1326	1013
145°	1591	1603	1613	1615	1608	994
155°	1819	1824	1830	1838	1833	837
165°	1979	1977	1977	1989	1981	558
175°	2059	2054	2050	2063	2052	196
180°	2063	2063	2063	2063	2063	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1586.2	1586.2	1586.2	1586.2	1586.2
2.5°	1595.4	1587.8	1571.0	1586.2	1583.3
5°	1586.2	1580.2	1563.3	1575.5	1572.6
7.5°	1575.5	1566.4	1549.6	1561.9	1558.9
10°	1558.9	1548.2	1529.9	1542.0	1537.5
12.5°	1535.9	1526.8	1508.5	1516.1	1513.0
15°	1509.9	1500.9	1481.0	1487.2	1479.5
17.5°	1477.9	1468.8	1448.9	1456.5	1448.9
20°	1442.8	1433.8	1412.4	1416.9	1411.0
22.5°	1407.9	1394.1	1374.2	1374.2	1371.1
25°	1366.6	1354.5	1328.5	1331.5	1328.5
27.5°	1320.8	1310.1	1290.4	1285.8	1278.2
30°	1275.1	1262.9	1240.1	1235.5	1229.4
32.5°	1226.3	1217.2	1192.8	1183.6	1177.5
35°	1179.0	1163.8	1139.4	1130.2	1122.6
37.5°	1125.6	1111.9	1087.4	1076.8	1069.2
40°	1070.8	1058.5	1034.0	1020.4	1014.3
42.5°	1017.4	1005.1	980.8	965.4	956.3
45°	959.4	948.8	925.8	909.1	902.9
47.5°	902.9	892.3	867.9	851.0	842.0
50°	843.4	835.8	814.5	793.1	785.5
52.5°	785.5	774.8	755.0	738.3	727.6
55°	726.1	716.9	698.5	680.3	672.7
57.5°	666.5	658.9	639.0	620.8	614.6
60°	607.0	601.0	579.7	562.8	558.3
62.5°	549.1	538.4	523.2	507.9	501.8
65°	489.7	480.5	465.2	451.5	443.8
67.5°	428.7	420.9	407.3	396.6	390.4
70°	372.2	366.1	352.3	341.6	335.7
72.5°	314.3	308.1	300.5	289.8	285.3
75°	256.2	253.2	245.5	236.4	239.5
77.5°	204.4	198.2	195.2	190.6	186.1
80°	152.6	151.0	147.9	143.4	140.3
82.5°	103.7	103.7	102.2	96.1	96.1
85°	62.5	61.0	59.5	54.9	53.4
87.5°	27.5	24.5	21.4	16.8	15.2
90°	1.9	22.4	61.0	57.2	59.1
92.5°	38.6	52.3	54.1	55.9	55.9
95°	90.8	108.2	111.3	111.3	108.2
97.5°	151.2	167.3	174.1	174.1	174.1
100°	220.8	235.1	240.0	240.0	238.1
102.5°	294.2	304.8	311.5	313.4	311.5
105°	374.4	379.4	383.1	386.2	386.2
107.5°	454.0	461.5	461.5	462.7	454.0
110°	531.1	541.0	541.0	541.0	536.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	614.4	625.0	623.1	618.2	614.4
115°	696.5	706.5	703.4	701.5	696.5
117.5°	778.0	791.7	782.9	778.0	773.0
120°	860.1	873.8	860.1	860.1	854.4
122.5°	934.7	952.1	943.4	938.4	934.7
125°	1013.0	1028.6	1023.6	1018.0	1016.2
127.5°	1089.6	1108.8	1102.0	1094.5	1089.6
130°	1161.1	1183.4	1180.3	1176.6	1169.8
132.5°	1241.3	1258.7	1260.0	1251.2	1246.3
135°	1310.3	1329.6	1333.3	1331.5	1326.5
137.5°	1387.4	1403.0	1406.1	1404.8	1397.3
140°	1455.2	1470.7	1479.4	1479.4	1472.6
142.5°	1524.9	1540.4	1545.4	1547.3	1540.4
145°	1590.8	1603.2	1613.1	1615.0	1608.2
147.5°	1649.8	1665.4	1672.8	1676.0	1669.2
150°	1710.8	1721.3	1728.2	1733.8	1728.2
152.5°	1764.9	1775.5	1784.2	1791.0	1784.2
155°	1819.0	1824.0	1829.6	1838.3	1832.7
157.5°	1865.6	1869.4	1872.5	1884.9	1876.2
160°	1907.3	1911.1	1912.9	1923.5	1916.0
162.5°	1945.9	1945.9	1947.7	1959.6	1950.8
165°	1978.8	1976.9	1976.9	1989.4	1980.7
167.5°	2008.7	2003.1	2003.1	2015.5	2006.8
170°	2031.1	2026.1	2024.2	2036.7	2026.1
172.5°	2046.6	2041.7	2039.8	2052.2	2041.7
175°	2059.0	2054.1	2050.3	2062.8	2052.2
177.5°	2065.9	2060.9	2057.2	2067.8	2057.2
180°	2062.8	2062.8	2062.8	2062.8	2062.8

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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	6.91	7.70	7.94	8.74	10.13	6.47	7.26	7.50	8.30	9.69
	3H	8.57	9.28	9.61	10.32	11.73	8.09	8.79	9.13	9.84	11.25
	4H	9.16	9.83	10.21	10.88	12.29	8.67	9.34	9.72	10.39	11.81
	6H	9.56	10.17	10.62	11.22	12.65	9.06	9.68	10.13	10.73	12.16
	8H	9.66	10.25	10.73	11.31	12.74	9.17	9.75	10.23	10.82	12.25
	12H	9.71	10.26	10.78	11.33	12.78	9.21	9.76	10.28	10.83	12.28
4H	2H	7.37	8.04	8.42	9.08	10.50	7.02	7.69	8.07	8.73	10.15
	3H	9.23	9.79	10.29	10.86	12.29	8.83	9.39	9.89	10.46	11.89
	4H	9.94	10.45	11.01	11.52	12.97	9.53	10.04	10.60	11.10	12.56
	6H	10.46	10.90	11.54	11.99	13.43	10.03	10.47	11.11	11.56	13.01
	8H	10.61	11.02	11.69	12.10	13.56	10.18	10.59	11.26	11.67	13.13
	12H	10.68	11.05	11.78	12.14	13.61	10.24	10.61	11.34	11.70	13.17
8H	4H	10.13	10.54	11.21	11.63	13.09	9.76	10.17	10.84	11.26	12.72
	6H	10.77	11.10	11.87	12.23	13.69	10.39	10.73	11.49	11.85	13.31
	8H	10.99	11.29	12.10	12.39	13.87	10.60	10.90	11.71	12.01	13.49
	12H	11.12	11.38	12.23	12.48	14.00	10.72	10.98	11.83	12.08	13.60
12H	4H	10.12	10.49	11.21	11.58	13.05	9.75	10.13	10.85	11.22	12.69
	6H	10.79	11.09	11.90	12.20	13.68	10.43	10.73	11.54	11.83	13.31
	8H	11.04	11.30	12.15	12.40	13.92	10.66	10.92	11.78	12.03	13.54

END OF REPORT