

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: P915982

Luminaire Tested: DFN2DIP-4P4F0-050D080US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915982
REPORT IS A COMBINATION OF REPORTS P899143 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D080US930-FLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

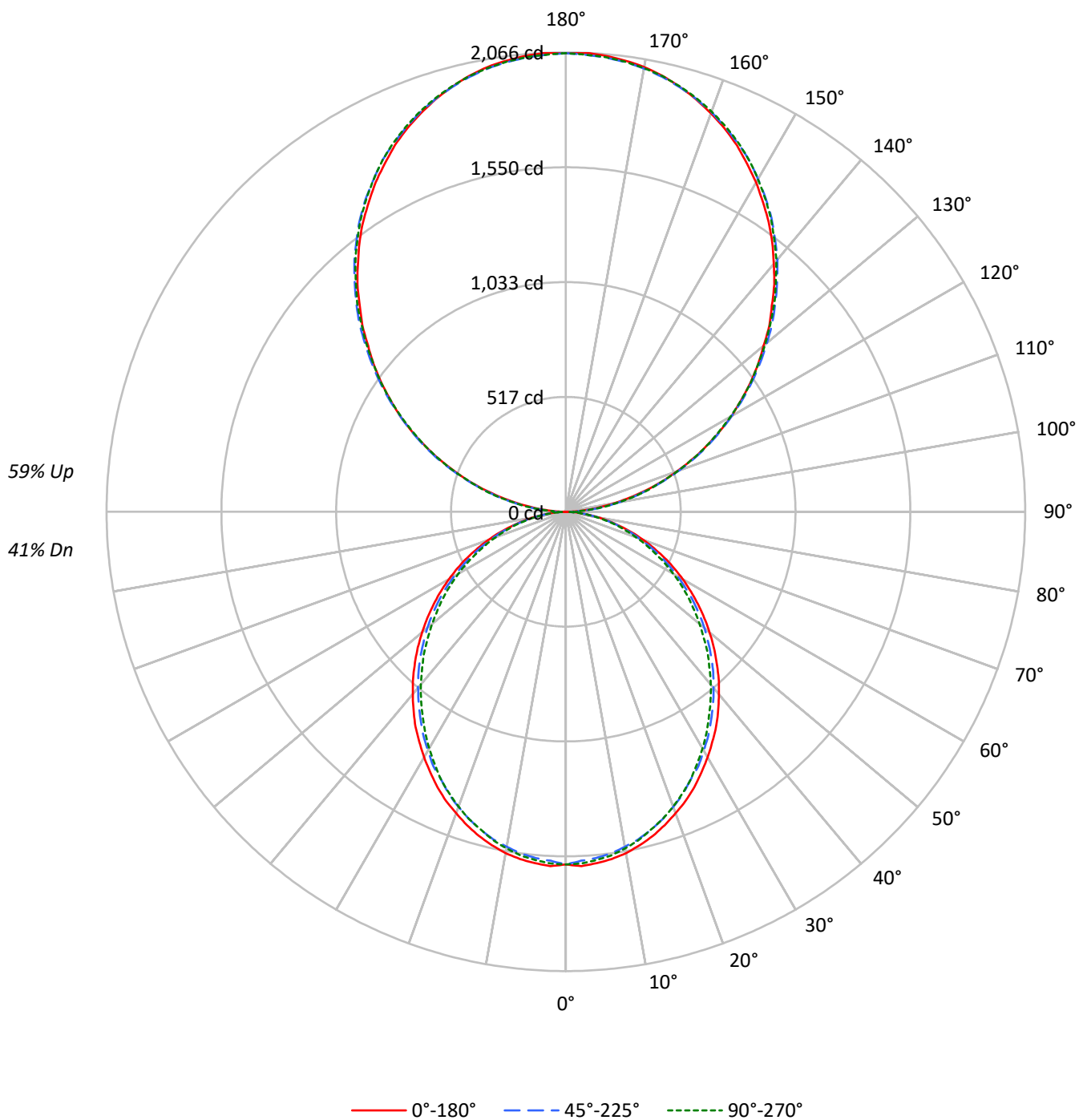
Lumens per Lamp: N/A
Luminaire Lumens: 9808.0 lumens
Efficiency: N/A
Efficacy: 79.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 123.6
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°	1029	1029	1029
5°	1031	1015	1022
10°	1022	1002	1008
15°	1007	986	987
20°	987	963	965
25°	967	936	940
30°	942	911	908
35°	918	881	874
40°	889	851	842
45°	859	821	809
50°	827	789	770
55°	793	753	735
60°	755	709	695
65°	714	665	647
70°	661	610	597
75°	588	545	550
80°	500	462	460
85°	363	317	310

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1562 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	6.52	7.30	7.55	8.34	9.73	6.07	6.86	7.10	7.90	9.29
	3H	8.18	8.88	9.22	9.93	11.34	7.69	8.39	8.73	9.44	10.85
	4H	8.76	9.43	9.82	10.48	11.90	8.27	8.94	9.32	9.99	11.41
	6H	9.17	9.78	10.23	10.83	12.26	8.67	9.28	9.73	10.33	11.76
	8H	9.27	9.86	10.34	10.92	12.35	8.77	9.36	9.83	10.42	11.85
	12H	9.32	9.88	10.39	10.94	12.39	8.81	9.37	9.88	10.43	11.88
4H	2H	6.97	7.64	8.03	8.69	10.10	6.62	7.28	7.67	8.33	9.75
	3H	8.84	9.39	9.90	10.47	11.90	8.43	8.99	9.49	10.06	11.49
	4H	9.55	10.06	10.62	11.13	12.58	9.13	9.64	10.20	10.71	12.16
	6H	10.07	10.51	11.15	11.60	13.04	9.63	10.07	10.72	11.16	12.61
	8H	10.22	10.63	11.30	11.71	13.17	9.78	10.19	10.86	11.27	12.74
	12H	10.29	10.66	11.39	11.76	13.23	9.84	10.21	10.94	11.31	12.78
8H	4H	9.74	10.15	10.82	11.24	12.70	9.37	9.78	10.45	10.86	12.32
	6H	10.38	10.72	11.48	11.84	13.30	9.99	10.33	11.10	11.46	12.92
	8H	10.60	10.90	11.71	12.00	13.48	10.21	10.51	11.32	11.61	13.09
	12H	10.73	10.99	11.85	12.10	13.61	10.32	10.58	11.44	11.69	13.20
12H	4H	9.72	10.10	10.82	11.19	12.66	9.36	9.73	10.46	10.82	12.29
	6H	10.41	10.71	11.52	11.81	13.29	10.04	10.33	11.15	11.44	12.92
	8H	10.65	10.91	11.76	12.01	13.53	10.27	10.53	11.38	11.63	13.15

END OF REPORT