

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: P916580

Luminaire Tested: DFN2DIP-PN2F0-060D050US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916580
REPORT IS A COMBINATION OF REPORTS P899499 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-060D050US930-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

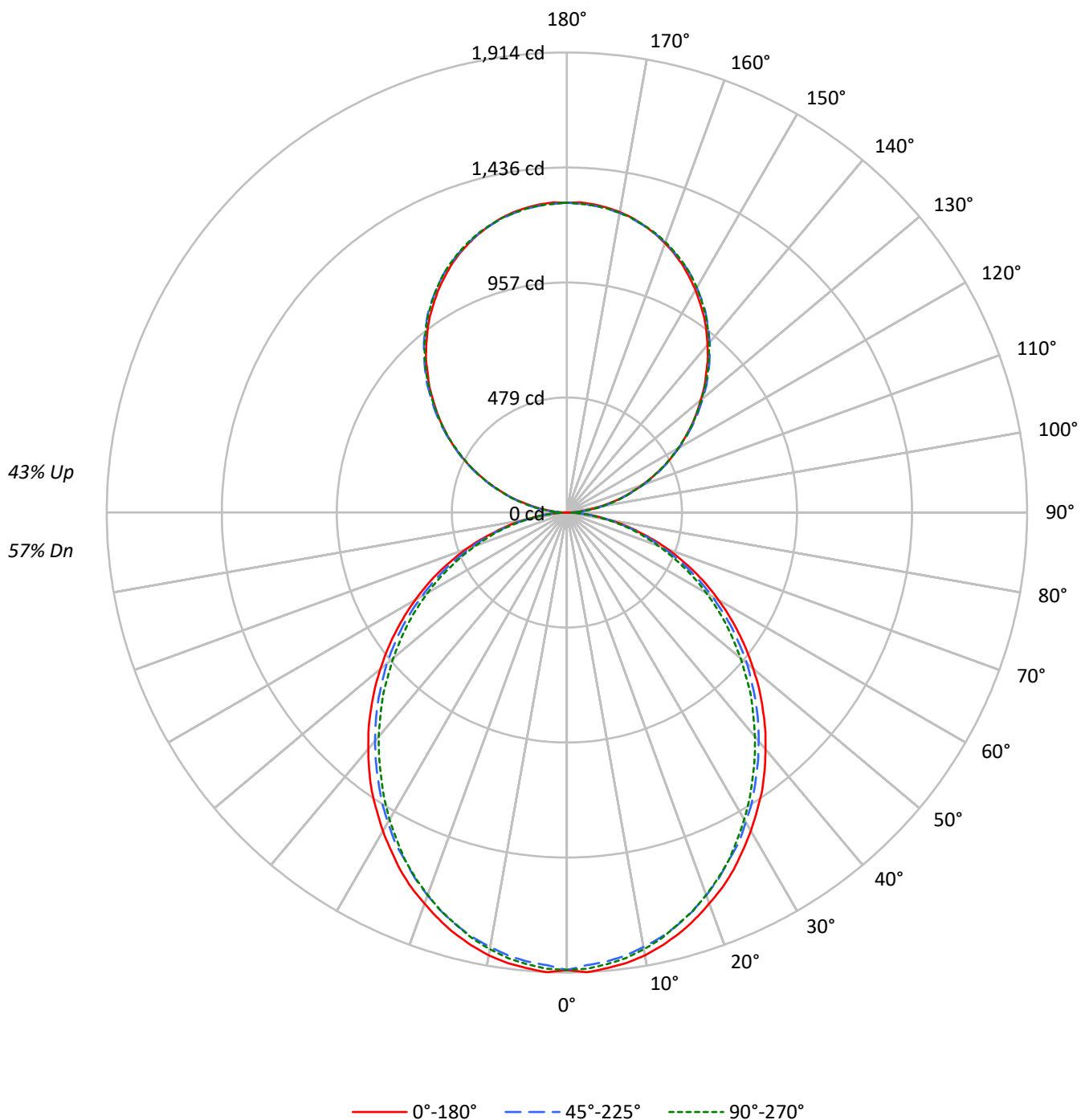
Lumens per Lamp: N/A
Luminaire Lumens: 8450.6 lumens
Efficiency: N/A
Efficacy: 79.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 105.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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	109	109	109	109		101	101	101	101		87	87	87		75	75	75		63	63	63
1	99	95	91	88		92	89	85	82		77	74	72		66	64	62		56	54	53
2	91	83	77	72		84	78	72	67		67	63	60		58	55	52		49	47	45
3	83	73	66	60		77	68	62	56		59	54	50		51	47	44		43	41	38
4	76	65	57	51		70	61	53	48		53	47	43		46	41	38		39	36	33
5	69	58	49	43		64	54	47	41		47	41	37		41	36	33		35	31	29
6	64	52	44	38		59	49	41	36		43	37	32		37	32	29		32	28	25
7	59	47	39	33		55	44	37	32		39	33	28		34	29	25		29	25	22
8	55	43	35	29		51	40	33	28		35	29	25		31	26	23		27	23	20
9	51	39	31	26		48	37	30	25		32	27	23		28	24	20		25	21	18
10	48	36	28	24		45	34	27	23		30	24	21		26	22	19		23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4123	4123	4123
5°	4122	4056	4086
10°	4082	3993	4025
15°	4016	3918	3933
20°	3928	3818	3838
25°	3841	3700	3730
30°	3733	3590	3594
35°	3630	3461	3450
40°	3504	3331	3314
45°	3379	3200	3173
50°	3241	3062	3011
55°	3097	2902	2860
60°	2933	2715	2688
65°	2753	2518	2484
70°	2525	2279	2265
75°	2211	1993	2053
80°	1830	1628	1666
85°	1241	1028	1044

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3379 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.1	2.1
10°-20°	504.1	6.0
20°-30°	740.8	8.8
30°-40°	860.4	10.2
40°-50°	859.3	10.2
50°-60°	749.3	8.9
60°-70°	553.9	6.6
70°-80°	313.4	3.7
80°-90°	86.4	1.0
90°-100°	79.8	0.9
100°-110°	253.5	3.0
110°-120°	433.8	5.1
120°-130°	570.5	6.8
130°-140°	640.4	7.6
140°-150°	627.9	7.4
150°-160°	526.8	6.2
160°-170°	349.3	4.1
170°-180°	122.1	1.4
0°-30°	1424.0	16.9
0°-40°	2284.3	27.0
0°-60°	3892.9	46.1
0°-90°	4846.5	57.4
90°-120°	767.0	9.1
90°-150°	2605.8	30.8
90°-180°	3604.0	42.6
0°-180°	8450.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1903	1903	1903	1903	1903	
5°	1903	1896	1876	1891	1887	181
15°	1812	1801	1777	1785	1776	510
25°	1640	1625	1594	1598	1594	755
35°	1415	1397	1367	1356	1347	884
45°	1151	1138	1111	1091	1084	889
55°	871	860	838	816	807	779
65°	588	577	558	542	533	581
75°	307	304	295	284	287	328
85°	75	73	71	66	64	84
90°	1	14	38	36	37	8
95°	57	68	70	70	68	63
105°	234	237	240	241	241	247
115°	435	442	440	438	435	431
125°	633	643	640	636	635	566
135°	819	831	833	832	829	633
145°	994	1002	1008	1009	1005	621
155°	1137	1140	1144	1149	1145	523
165°	1237	1236	1236	1243	1238	349
175°	1287	1284	1282	1289	1283	122
180°	1289	1289	1289	1289	1289	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1903.4	1903.4	1903.4	1903.4	1903.4
2.5°	1914.5	1905.4	1885.1	1903.4	1899.9
5°	1903.4	1896.2	1876.0	1890.6	1887.1
7.5°	1890.6	1879.8	1859.5	1874.3	1870.6
10°	1870.6	1857.8	1835.8	1850.4	1844.9
12.5°	1843.1	1832.1	1810.2	1819.3	1815.7
15°	1811.9	1801.1	1777.2	1784.6	1775.5
17.5°	1773.5	1762.7	1738.8	1747.8	1738.8
20°	1731.4	1720.5	1694.8	1700.3	1693.1
22.5°	1689.5	1672.9	1649.0	1649.0	1645.4
25°	1639.9	1625.4	1594.2	1597.7	1594.2
27.5°	1584.9	1572.1	1548.4	1543.0	1533.9
30°	1530.2	1515.4	1488.1	1482.6	1475.2
32.5°	1471.5	1460.7	1431.3	1420.2	1412.9
35°	1414.9	1396.6	1367.3	1356.2	1347.0
37.5°	1350.8	1334.2	1305.0	1292.1	1283.0
40°	1284.9	1270.2	1240.9	1224.6	1217.2
42.5°	1220.8	1206.1	1177.0	1158.5	1147.6
45°	1151.4	1138.5	1110.9	1091.0	1083.5
47.5°	1083.5	1070.7	1041.5	1021.2	1010.3
50°	1012.1	1003.0	977.4	951.7	942.6
52.5°	942.6	929.8	906.0	885.9	873.1
55°	871.3	860.2	838.3	816.4	807.2
57.5°	799.9	790.8	766.9	744.9	737.5
60°	728.4	721.2	695.6	675.4	669.9
62.5°	658.8	646.0	627.8	609.5	602.2
65°	587.6	576.6	558.3	541.8	532.6
67.5°	514.4	505.1	488.8	476.0	468.6
70°	446.6	439.3	422.7	409.9	402.8
72.5°	377.1	369.7	360.6	347.8	342.3
75°	307.4	303.9	294.6	283.7	287.4
77.5°	245.2	237.9	234.2	228.8	223.3
80°	183.1	181.2	177.5	172.0	168.4
82.5°	124.5	124.5	122.7	115.4	115.4
85°	74.9	73.2	71.4	65.8	64.1
87.5°	33.0	29.4	25.6	20.2	18.3
90°	1.1	14.0	38.1	35.8	36.9
92.5°	24.1	32.6	33.8	35.0	35.0
95°	56.7	67.7	69.5	69.5	67.7
97.5°	94.4	104.5	108.8	108.8	108.8
100°	137.9	146.9	150.0	150.0	148.9
102.5°	183.8	190.5	194.7	195.9	194.7
105°	234.0	237.1	239.5	241.3	241.3
107.5°	283.7	288.4	288.4	289.2	283.7
110°	331.9	338.2	338.2	338.2	335.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	384.0	390.6	389.5	386.4	384.0
115°	435.3	441.6	439.6	438.5	435.3
117.5°	486.2	494.8	489.3	486.2	483.1
120°	537.5	546.1	537.5	537.5	534.0
122.5°	584.2	595.1	589.6	586.5	584.2
125°	633.2	642.9	639.8	636.3	635.1
127.5°	680.9	693.0	688.8	684.0	680.9
130°	725.7	739.6	737.7	735.4	731.1
132.5°	775.8	786.7	787.5	782.0	778.9
135°	819.0	831.0	833.3	832.2	829.1
137.5°	867.2	876.9	878.8	878.0	873.3
140°	909.5	919.2	924.6	924.6	920.4
142.5°	953.0	962.8	965.9	967.0	962.8
145°	994.3	1002.0	1008.2	1009.4	1005.1
147.5°	1031.2	1040.9	1045.5	1047.5	1043.2
150°	1069.3	1075.9	1080.1	1083.6	1080.1
152.5°	1103.1	1109.7	1115.1	1119.4	1115.1
155°	1136.9	1140.0	1143.5	1148.9	1145.4
157.5°	1166.0	1168.3	1170.3	1178.1	1172.6
160°	1192.0	1194.4	1195.6	1202.2	1197.5
162.5°	1216.2	1216.2	1217.3	1224.7	1219.3
165°	1236.8	1235.6	1235.6	1243.4	1237.9
167.5°	1255.4	1251.9	1251.9	1259.7	1254.3
170°	1269.4	1266.3	1265.2	1272.9	1266.3
172.5°	1279.1	1276.0	1274.9	1282.6	1276.0
175°	1286.9	1283.8	1281.5	1289.2	1282.6
177.5°	1291.2	1288.1	1285.7	1292.3	1285.7
180°	1289.2	1289.2	1289.2	1289.2	1289.2

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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	12.73	13.66	13.62	14.57	15.73	12.29	13.22	13.18	14.13	15.30
	3H	14.37	15.21	15.28	16.13	17.32	13.89	14.73	14.80	15.65	16.84
	4H	14.95	15.74	15.87	16.67	17.86	14.47	15.26	15.39	16.19	17.38
	6H	15.34	16.07	16.27	17.00	18.21	14.85	15.58	15.78	16.51	17.72
	8H	15.44	16.13	16.37	17.08	18.29	14.95	15.64	15.89	16.59	17.80
	12H	15.48	16.14	16.42	17.09	18.32	14.99	15.65	15.93	16.59	17.83
4H	2H	13.19	13.98	14.11	14.91	16.10	12.84	13.63	13.76	14.55	15.75
	3H	15.04	15.70	15.97	16.65	17.86	14.64	15.30	15.57	16.25	17.46
	4H	15.74	16.34	16.68	17.29	18.53	15.32	15.93	16.27	16.88	18.11
	6H	16.24	16.76	17.19	17.73	18.97	15.82	16.34	16.77	17.31	18.55
	8H	16.38	16.86	17.34	17.83	19.08	15.95	16.44	16.91	17.41	18.66
	12H	16.45	16.88	17.42	17.87	19.13	16.01	16.45	16.99	17.44	18.69
8H	4H	15.93	16.41	16.89	17.38	18.63	15.56	16.05	16.52	17.01	18.26
	6H	16.54	16.94	17.52	17.95	19.20	16.16	16.57	17.15	17.58	18.83
	8H	16.75	17.10	17.74	18.10	19.37	16.37	16.72	17.36	17.72	18.99
	12H	16.87	17.18	17.87	18.17	19.49	16.47	16.78	17.47	17.78	19.09
12H	4H	15.92	16.35	16.89	17.34	18.60	15.55	15.99	16.53	16.98	18.23
	6H	16.56	16.92	17.56	17.92	19.19	16.20	16.56	17.20	17.56	18.82
	8H	16.79	17.11	17.79	18.10	19.41	16.42	16.74	17.42	17.73	19.04