

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: P916896

Luminaire Tested: DFN2DIP-PN4F0-070D050US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916896
REPORT IS A COMBINATION OF REPORTS P899633 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-070D050US930-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

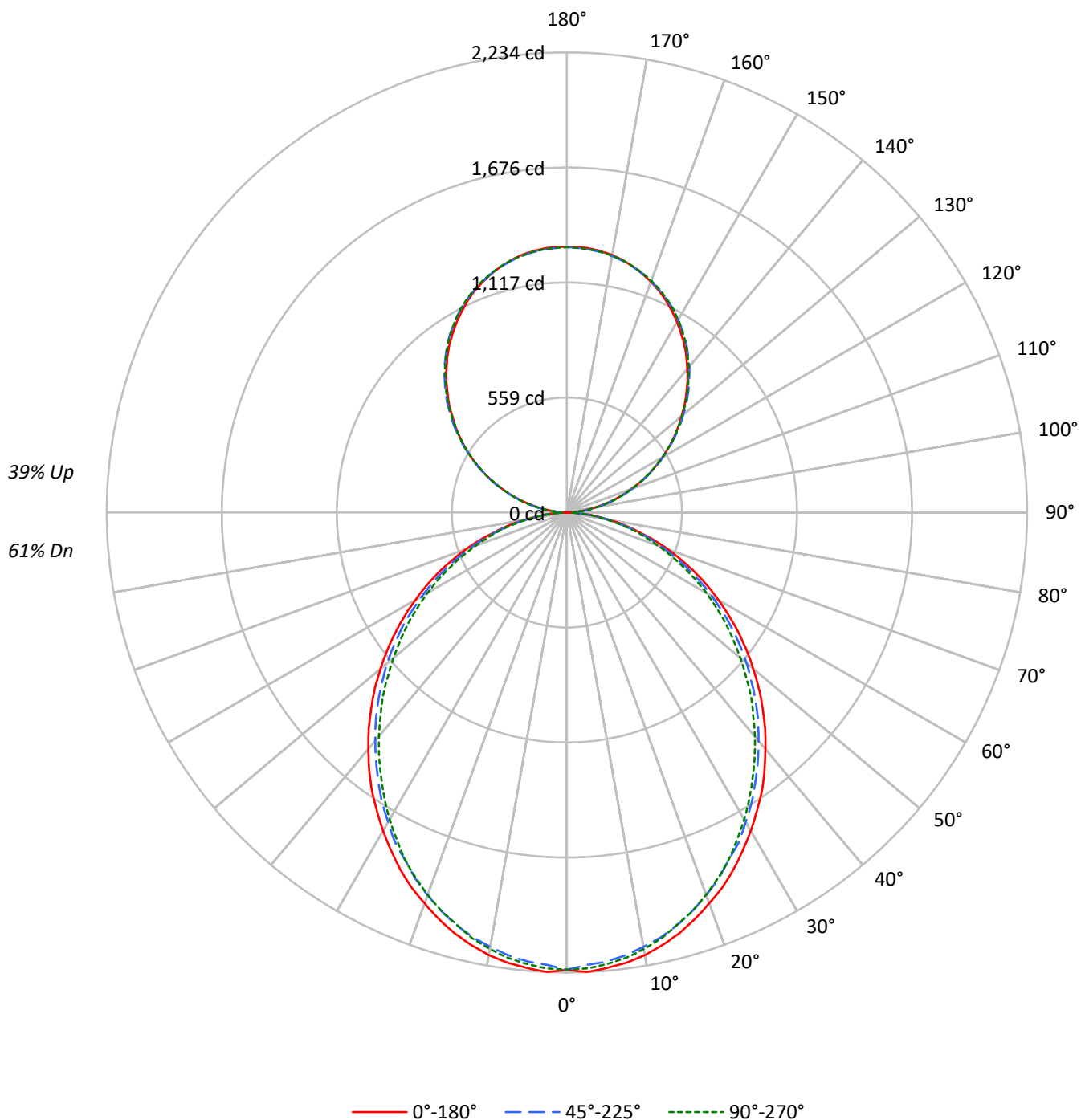
Lumens per Lamp: N/A
Luminaire Lumens: 9257.7 lumens
Efficiency: N/A
Efficacy: 88.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 104.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66
1	100	96	92	88	94	90	86	83	79	76	74	68	66	65	59	57	56
2	91	84	77	72	85	79	73	68	69	65	61	60	57	54	52	49	47
3	83	74	66	60	78	69	63	57	61	56	51	53	49	46	46	43	40
4	76	65	57	51	71	61	54	49	54	48	44	47	43	39	41	37	35
5	70	58	50	44	65	55	47	42	48	42	38	42	38	34	37	33	30
6	65	52	44	38	60	49	42	36	44	38	33	38	34	30	33	30	27
7	60	47	39	33	56	45	37	32	40	34	29	35	30	26	31	27	24
8	56	43	35	30	52	41	33	28	36	30	26	32	27	24	28	24	21
9	52	39	32	27	48	37	30	25	33	27	23	30	25	21	26	22	19
10	48	36	29	24	45	34	28	23	31	25	21	27	23	19	24	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1621	1621	1621
5°	1624	1599	1609
10°	1610	1577	1588
15°	1587	1552	1554
20°	1555	1516	1520
25°	1523	1473	1480
30°	1483	1433	1429
35°	1445	1386	1375
40°	1399	1338	1323
45°	1352	1290	1271
50°	1302	1240	1210
55°	1248	1182	1155
60°	1188	1114	1091
65°	1123	1043	1015
70°	1040	956	934
75°	924	852	860
80°	785	720	717
85°	568	492	480

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1352 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.0	2.3
10°-20°	588.1	6.4
20°-30°	864.2	9.3
30°-40°	1003.7	10.8
40°-50°	1002.5	10.8
50°-60°	874.2	9.4
60°-70°	646.2	7.0
70°-80°	365.6	3.9
80°-90°	100.2	1.1
90°-100°	79.8	0.9
100°-110°	253.5	2.7
110°-120°	433.8	4.7
120°-130°	570.5	6.2
130°-140°	640.4	6.9
140°-150°	627.9	6.8
150°-160°	526.8	5.7
160°-170°	349.3	3.8
170°-180°	122.1	1.3
0°-30°	1661.3	17.9
0°-40°	2665.1	28.8
0°-60°	4541.7	49.1
0°-90°	5653.7	61.1
90°-120°	767.0	8.3
90°-150°	2605.8	28.1
90°-180°	3604.0	38.9
0°-180°	9257.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2221	2221	2221	2221	2221	
5°	2221	2212	2189	2206	2202	211
15°	2114	2101	2073	2082	2071	595
25°	1913	1896	1860	1864	1860	880
35°	1651	1629	1595	1582	1572	1031
45°	1343	1328	1296	1273	1264	1037
55°	1016	1004	978	952	942	909
65°	686	673	651	632	621	678
75°	359	355	344	331	335	383
85°	88	85	83	77	75	98
90°	1	14	38	36	37	9
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°	2220.6	2220.6	2220.6	2220.6	2220.6
2.5°	2233.6	2222.9	2199.3	2220.6	2216.6
5°	2220.6	2212.3	2188.7	2205.7	2201.6
7.5°	2205.7	2193.0	2169.4	2186.7	2182.4
10°	2182.4	2167.4	2141.8	2158.8	2152.5
12.5°	2150.2	2137.5	2111.9	2122.5	2118.2
15°	2114.0	2101.3	2073.4	2082.0	2071.3
17.5°	2069.1	2056.4	2028.5	2039.2	2028.5
20°	2019.9	2007.3	1977.3	1983.7	1975.3
22.5°	1971.0	1951.7	1923.9	1923.9	1919.5
25°	1913.3	1896.2	1860.0	1864.1	1860.0
27.5°	1849.1	1834.2	1806.5	1800.2	1789.5
30°	1785.3	1768.0	1736.1	1729.7	1721.1
32.5°	1716.8	1704.1	1669.9	1657.0	1648.4
35°	1650.7	1629.4	1595.1	1582.2	1571.6
37.5°	1575.9	1556.6	1522.4	1507.5	1496.8
40°	1499.1	1481.9	1447.6	1428.6	1420.0
42.5°	1424.3	1407.1	1373.1	1351.6	1338.9
45°	1343.2	1328.3	1296.1	1272.8	1264.1
47.5°	1264.1	1249.2	1215.0	1191.4	1178.8
50°	1180.8	1170.1	1140.2	1110.4	1099.7
52.5°	1099.7	1084.8	1057.1	1033.6	1018.6
55°	1016.5	1003.6	978.0	952.4	941.8
57.5°	933.2	922.5	894.6	869.0	860.5
60°	849.8	841.4	811.5	788.0	781.6
62.5°	768.7	753.7	732.5	711.2	702.5
65°	685.6	672.6	651.3	632.1	621.4
67.5°	600.1	589.3	570.2	555.3	546.7
70°	521.1	512.5	493.2	478.3	469.9
72.5°	439.9	431.4	420.7	405.8	399.4
75°	358.6	354.6	343.6	331.0	335.3
77.5°	286.2	277.5	273.2	266.8	260.6
80°	213.6	211.4	207.1	200.7	196.4
82.5°	145.2	145.2	143.2	134.6	134.6
85°	87.5	85.4	83.4	76.8	74.8
87.5°	38.5	34.2	29.9	23.6	21.3
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	9.92	10.89	10.77	11.77	12.87	9.48	10.45	10.33	11.33	12.43
	3H	11.59	12.46	12.46	13.35	14.48	11.11	11.98	11.97	12.86	13.99
	4H	12.18	13.01	13.07	13.90	15.04	11.70	12.52	12.58	13.41	14.56
	6H	12.59	13.35	13.49	14.25	15.41	12.10	12.86	13.00	13.76	14.91
	8H	12.70	13.43	13.61	14.34	15.50	12.21	12.93	13.11	13.85	15.00
	12H	12.76	13.44	13.67	14.36	15.53	12.26	12.94	13.17	13.86	15.03
4H	2H	10.39	11.22	11.28	12.11	13.25	10.04	10.87	10.93	11.76	12.90
	3H	12.27	12.96	13.17	13.89	15.04	11.87	12.56	12.77	13.48	14.64
	4H	12.99	13.62	13.91	14.54	15.72	12.58	13.20	13.49	14.12	15.31
	6H	13.52	14.06	14.44	15.00	16.19	13.09	13.64	14.02	14.58	15.76
	8H	13.67	14.18	14.60	15.12	16.31	13.24	13.75	14.17	14.69	15.88
	12H	13.75	14.21	14.70	15.16	16.37	13.31	13.77	14.26	14.72	15.93
8H	4H	13.20	13.71	14.13	14.64	15.84	12.83	13.33	13.76	14.27	15.47
	6H	13.84	14.26	14.79	15.24	16.43	13.46	13.88	14.42	14.86	16.06
	8H	14.06	14.43	15.03	15.40	16.62	13.68	14.05	14.64	15.02	16.23
	12H	14.20	14.53	15.17	15.49	16.75	13.80	14.13	14.77	15.09	16.35
12H	4H	13.19	13.65	14.14	14.60	15.81	12.83	13.28	13.78	14.24	15.44
	6H	13.87	14.24	14.83	15.21	16.42	13.50	13.88	14.47	14.85	16.06
	8H	14.12	14.45	15.09	15.41	16.67	13.75	14.07	14.71	15.04	16.30