

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: P905628

Luminaire Tested: DFN2DIP-PN2F0-040D050US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905628
REPORT IS A COMBINATION OF REPORTS P899495 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-040D050US835-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

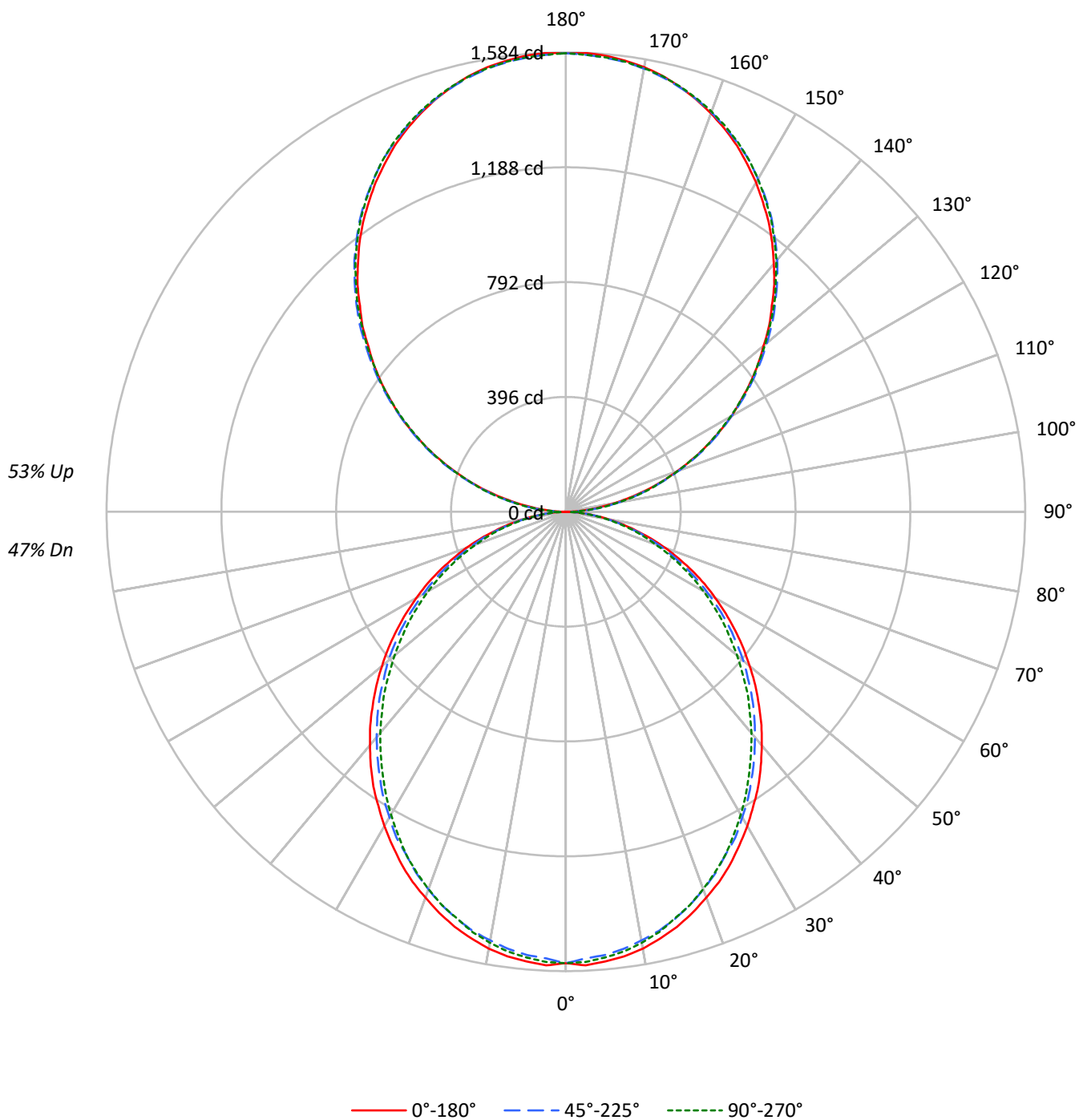
Lumens per Lamp: N/A
Luminaire Lumens: 8385.0 lumens
Efficiency: N/A
Efficacy: 104.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 80.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P905628

CATALOG NUMBER: DFN2DIP-PN2F0-040D050US835-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P905628

CATALOG NUMBER: DFN2DIP-PN2F0-040D050US835-FLLFL

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
RCR																	
0	106	106	106	106	98	98	98	98	82	82	82		67	67	67		54
1	97	93	89	85	89	85	82	79	72	69	67		59	57	56		47
2	88	81	75	70	81	75	69	65	63	59	56		52	49	47		42
3	81	71	64	58	74	66	59	54	55	51	47		46	42	39		37
4	74	63	55	49	68	58	51	46	49	44	40		41	37	34		33
5	68	56	48	42	62	52	45	39	44	39	34		37	33	29		30
6	62	50	42	37	57	47	40	34	40	34	30		33	29	26		27
7	58	45	38	32	53	42	35	30	36	30	26		30	26	23		25
8	54	41	34	28	49	38	31	27	33	27	23		28	23	20		23
9	50	38	30	25	46	35	28	24	30	25	21		25	21	18		21
10	47	35	27	23	43	32	26	21	28	22	19		23	19	16		19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3371	3371	3371
5°	3371	3317	3341
10°	3338	3265	3291
15°	3284	3204	3216
20°	3212	3122	3139
25°	3140	3026	3050
30°	3052	2936	2939
35°	2968	2830	2822
40°	2866	2724	2709
45°	2763	2616	2594
50°	2650	2504	2462
55°	2532	2373	2339
60°	2398	2220	2198
65°	2251	2059	2032
70°	2065	1864	1851
75°	1809	1630	1678
80°	1496	1331	1362
85°	1016	841	853

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2763 cd/sqm

TEST NUMBER: P905628

CATALOG NUMBER: DFN2DIP-PN2F0-040D050US835-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.5	1.7
10°-20°	412.2	4.9
20°-30°	605.7	7.2
30°-40°	703.5	8.4
40°-50°	702.6	8.4
50°-60°	612.7	7.3
60°-70°	452.9	5.4
70°-80°	256.2	3.1
80°-90°	72.1	0.9
90°-100°	97.8	1.2
100°-110°	310.9	3.7
110°-120°	532.1	6.3
120°-130°	699.7	8.3
130°-140°	785.4	9.4
140°-150°	770.2	9.2
150°-160°	646.1	7.7
160°-170°	428.5	5.1
170°-180°	149.8	1.8
0°-30°	1164.4	13.9
0°-40°	1867.9	22.3
0°-60°	3183.2	38.0
0°-90°	3964.5	47.3
90°-120°	940.8	11.2
90°-150°	3196.2	38.1
90°-180°	4421.0	52.7
0°-180°	8385.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1556	1556	1556	1556	1556	
5°	1556	1550	1534	1546	1543	148
15°	1482	1473	1453	1459	1452	417
25°	1341	1329	1304	1306	1304	617
35°	1157	1142	1118	1109	1102	722
45°	941	931	908	892	886	727
55°	712	703	686	668	660	637
65°	480	471	456	443	436	475
75°	251	248	241	232	235	268
85°	61	60	58	54	52	68
90°	1	17	47	44	45	8
95°	70	83	85	85	83	77
105°	287	291	294	296	296	303
115°	534	542	539	538	534	528
125°	777	788	785	780	779	694
135°	1004	1019	1022	1021	1017	776
145°	1220	1229	1237	1238	1233	762
155°	1394	1398	1402	1409	1405	642
165°	1517	1516	1516	1525	1518	428
175°	1578	1575	1572	1581	1573	150
180°	1581	1581	1581	1581	1581	

TEST NUMBER: P905628

CATALOG NUMBER: DFN2DIP-PN2F0-040D050US835-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1556.4	1556.4	1556.4	1556.4	1556.4
2.5°	1565.5	1558.0	1541.5	1556.4	1553.6
5°	1556.4	1550.5	1534.0	1545.9	1543.1
7.5°	1545.9	1537.0	1520.5	1532.6	1529.6
10°	1529.6	1519.1	1501.2	1513.1	1508.6
12.5°	1507.0	1498.1	1480.2	1487.7	1484.6
15°	1481.6	1472.7	1453.2	1459.2	1451.8
17.5°	1450.2	1441.3	1421.8	1429.2	1421.8
20°	1415.7	1406.8	1385.9	1390.3	1384.5
22.5°	1381.4	1367.9	1348.4	1348.4	1345.4
25°	1340.9	1329.0	1303.6	1306.5	1303.6
27.5°	1296.0	1285.5	1266.2	1261.7	1254.3
30°	1251.2	1239.2	1216.8	1212.3	1206.3
32.5°	1203.3	1194.4	1170.4	1161.4	1155.3
35°	1156.9	1142.0	1118.0	1109.0	1101.5
37.5°	1104.5	1091.0	1067.0	1056.6	1049.1
40°	1050.7	1038.6	1014.6	1001.3	995.3
42.5°	998.3	986.2	962.4	947.3	938.4
45°	941.4	931.0	908.4	892.1	886.0
47.5°	886.0	875.5	851.6	835.1	826.2
50°	827.6	820.1	799.2	778.2	770.7
52.5°	770.7	760.3	740.9	724.4	713.9
55°	712.5	703.4	685.5	667.5	660.1
57.5°	654.0	646.6	627.0	609.1	603.1
60°	595.6	589.7	568.8	552.3	547.8
62.5°	538.8	528.3	513.4	498.4	492.4
65°	480.5	471.4	456.5	443.0	435.6
67.5°	420.6	413.0	399.7	389.2	383.2
70°	365.2	359.2	345.7	335.2	329.3
72.5°	308.4	302.3	294.9	284.4	279.9
75°	251.4	248.5	240.9	232.0	235.0
77.5°	200.5	194.5	191.5	187.0	182.6
80°	149.7	148.1	145.1	140.7	137.7
82.5°	101.8	101.8	100.4	94.3	94.3
85°	61.3	59.9	58.4	53.8	52.4
87.5°	27.0	24.0	21.0	16.5	14.9
90°	1.4	17.2	46.7	43.9	45.3
92.5°	29.6	40.0	41.5	42.9	42.9
95°	69.6	83.0	85.3	85.3	83.0
97.5°	115.8	128.2	133.5	133.5	133.5
100°	169.2	180.2	184.0	184.0	182.6
102.5°	225.5	233.6	238.8	240.3	238.8
105°	287.0	290.8	293.7	296.0	296.0
107.5°	348.0	353.7	353.7	354.7	348.0
110°	407.1	414.8	414.8	414.8	410.9

TEST NUMBER: P905628

CATALOG NUMBER: DFN2DIP-PN2F0-040D050US835-FLLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	471.0	479.1	477.7	473.9	471.0
115°	533.9	541.6	539.2	537.8	533.9
117.5°	596.4	606.9	600.2	596.4	592.6
120°	659.3	669.8	659.3	659.3	655.0
122.5°	716.5	729.9	723.2	719.4	716.5
125°	776.6	788.5	784.7	780.4	779.0
127.5°	835.2	850.0	844.8	839.0	835.2
130°	890.1	907.2	904.8	902.0	896.7
132.5°	951.6	964.9	965.9	959.2	955.4
135°	1004.5	1019.2	1022.1	1020.7	1016.9
137.5°	1063.6	1075.5	1077.9	1076.9	1071.2
140°	1115.5	1127.5	1134.1	1134.1	1128.9
142.5°	1168.9	1180.9	1184.7	1186.1	1180.9
145°	1219.5	1229.0	1236.6	1238.1	1232.8
147.5°	1264.8	1276.7	1282.4	1284.8	1279.5
150°	1311.5	1319.6	1324.8	1329.1	1324.8
152.5°	1353.0	1361.1	1367.7	1373.0	1367.7
155°	1394.4	1398.2	1402.5	1409.2	1404.9
157.5°	1430.2	1433.0	1435.4	1445.0	1438.3
160°	1462.1	1465.0	1466.4	1474.5	1468.8
162.5°	1491.7	1491.7	1493.1	1502.2	1495.5
165°	1517.0	1515.5	1515.5	1525.1	1518.4
167.5°	1539.8	1535.5	1535.5	1545.1	1538.4
170°	1557.0	1553.2	1551.8	1561.3	1553.2
172.5°	1568.9	1565.1	1563.7	1573.2	1565.1
175°	1578.5	1574.6	1571.8	1581.3	1573.2
177.5°	1583.7	1579.9	1577.0	1585.1	1577.0
180°	1581.3	1581.3	1581.3	1581.3	1581.3

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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	11.12	11.96	12.10	12.95	14.26	10.68	11.52	11.66	12.51	13.82
	3H	12.76	13.51	13.75	14.51	15.84	12.28	13.03	13.27	14.03	15.36
	4H	13.33	14.04	14.33	15.05	16.39	12.85	13.56	13.85	14.56	15.90
	6H	13.71	14.37	14.73	15.38	16.73	13.23	13.88	14.24	14.89	16.24
	8H	13.81	14.43	14.83	15.46	16.81	13.32	13.95	14.34	14.97	16.32
	12H	13.85	14.44	14.87	15.46	16.84	13.36	13.95	14.38	14.97	16.34
4H	2H	11.57	12.28	12.58	13.28	14.62	11.22	11.93	12.23	12.93	14.27
	3H	13.41	14.00	14.43	15.03	16.39	13.01	13.60	14.03	14.64	15.99
	4H	14.10	14.65	15.13	15.67	17.05	13.69	14.23	14.72	15.26	16.64
	6H	14.60	15.07	15.64	16.12	17.49	14.18	14.65	15.22	15.70	17.07
	8H	14.74	15.17	15.78	16.22	17.60	14.31	14.75	15.35	15.79	17.18
	12H	14.80	15.19	15.86	16.25	17.64	14.37	14.76	15.42	15.82	17.21
8H	4H	14.29	14.72	15.33	15.77	17.15	13.92	14.36	14.96	15.40	16.79
	6H	14.89	15.25	15.96	16.34	17.72	14.52	14.88	15.58	15.97	17.35
	8H	15.10	15.42	16.17	16.49	17.89	14.72	15.04	15.79	16.11	17.51
	12H	15.22	15.50	16.29	16.56	18.01	14.82	15.10	15.89	16.16	17.61
12H	4H	14.27	14.66	15.33	15.72	17.11	13.91	14.30	14.97	15.36	16.75
	6H	14.92	15.24	15.99	16.31	17.71	14.56	14.87	15.63	15.94	17.35
	8H	15.14	15.42	16.22	16.49	17.93	14.77	15.05	15.85	16.12	17.56