

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: P907763

Luminaire Tested: DFN2DIP-4P4F0-040D050US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907763
REPORT IS A COMBINATION OF REPORTS P900625 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-040D050US840-FLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

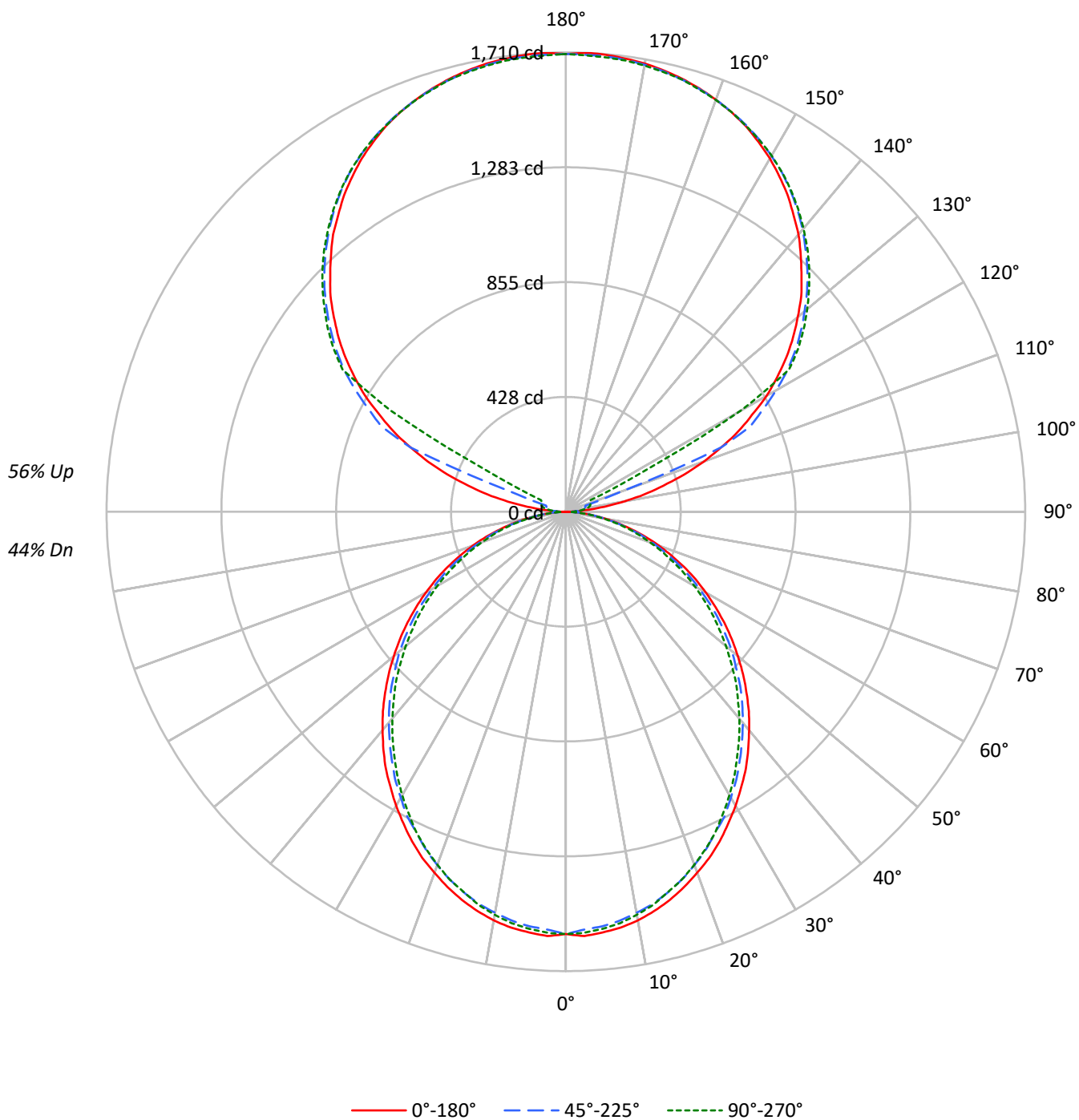
Lumens per Lamp: N/A
Luminaire Lumens: 8997.9 lumens
Efficiency: N/A
Efficacy: 113.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 79
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907763

CATALOG NUMBER: DFN2DIP-4P4F0-040D050US840-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P907763

CATALOG NUMBER: DFN2DIP-4P4F0-040D050US840-FLONL

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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	36
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31
4	73	63	55	49	67	58	51	46	48	43	39	40	36	33	31	29	27
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16
9	49	37	30	25	45	35	28	23	29	24	20	25	20	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1020	1020	1020
5°	1021	1006	1013
10°	1013	993	999
15°	998	977	978
20°	978	954	957
25°	958	927	932
30°	933	902	900
35°	910	873	866
40°	880	843	834
45°	851	813	801
50°	820	782	763
55°	786	746	728
60°	749	703	688
65°	708	659	641
70°	655	605	591
75°	583	540	545
80°	496	457	456
85°	360	314	307

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 877 cd/sqm

TEST NUMBER: P907763

CATALOG NUMBER: DFN2DIP-4P4F0-040D050US840-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.9	1.6
10°-20°	416.2	4.6
20°-30°	611.7	6.8
30°-40°	710.5	7.9
40°-50°	709.6	7.9
50°-60°	618.7	6.9
60°-70°	457.4	5.1
70°-80°	258.8	2.9
80°-90°	71.3	0.8
90°-100°	56.2	0.6
100°-110°	209.5	2.3
110°-120°	555.6	6.2
120°-130°	921.4	10.2
130°-140°	978.8	10.9
140°-150°	909.7	10.1
150°-160°	731.3	8.1
160°-170°	471.2	5.2
170°-180°	162.2	1.8
0°-30°	1175.9	13.1
0°-40°	1886.3	21.0
0°-60°	3214.6	35.7
0°-90°	4002.0	44.5
90°-120°	821.2	9.1
90°-150°	3631.1	40.4
90°-180°	4996.0	55.5
0°-180°	8997.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1572	1572	1572	1572	1572	
5°	1572	1566	1549	1561	1558	149
15°	1496	1487	1468	1474	1466	421
25°	1354	1342	1316	1319	1316	623
35°	1168	1153	1129	1120	1112	730
45°	951	940	917	901	895	734
55°	720	710	692	674	667	643
65°	485	476	461	447	440	480
75°	254	251	243	234	237	271
85°	62	60	59	54	53	69
90°	1	15	25	31	33	8
95°	80	39	48	54	53	95
105°	375	412	75	89	94	401
115°	709	730	761	190	101	698
125°	1002	1019	1042	1051	1054	894
135°	1240	1260	1271	1284	1281	958
145°	1439	1438	1459	1467	1461	900
155°	1584	1574	1588	1596	1586	730
165°	1670	1662	1666	1674	1666	472
175°	1708	1699	1702	1710	1698	163
180°	1704	1704	1704	1704	1704	

TEST NUMBER: P907763

CATALOG NUMBER: DFN2DIP-4P4F0-040D050US840-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1571.8	1571.8	1571.8	1571.8	1571.8
2.5°	1580.9	1573.4	1556.7	1571.8	1568.9
5°	1571.8	1565.8	1549.1	1561.2	1558.3
7.5°	1561.2	1552.2	1535.5	1547.7	1544.7
10°	1544.7	1534.1	1516.0	1528.0	1523.5
12.5°	1521.9	1512.9	1494.8	1502.4	1499.2
15°	1496.2	1487.2	1467.5	1473.6	1466.1
17.5°	1464.5	1455.5	1435.8	1443.3	1435.8
20°	1429.7	1420.7	1399.6	1404.0	1398.2
22.5°	1395.0	1381.4	1361.7	1361.7	1358.7
25°	1354.1	1342.1	1316.5	1319.4	1316.5
27.5°	1308.8	1298.2	1278.7	1274.1	1266.7
30°	1263.5	1251.4	1228.8	1224.3	1218.2
32.5°	1215.2	1206.2	1181.9	1172.9	1166.7
35°	1168.3	1153.3	1129.0	1119.9	1112.4
37.5°	1115.4	1101.8	1077.5	1067.0	1059.4
40°	1061.1	1048.8	1024.6	1011.2	1005.1
42.5°	1008.1	995.9	971.9	956.6	947.7
45°	950.7	940.2	917.4	900.9	894.7
47.5°	894.7	884.1	860.0	843.3	834.4
50°	835.8	828.2	807.1	785.9	778.3
52.5°	778.3	767.8	748.2	731.5	720.9
55°	719.5	710.3	692.3	674.1	666.6
57.5°	660.5	653.0	633.2	615.1	609.0
60°	601.5	595.5	574.4	557.7	553.2
62.5°	544.1	533.5	518.5	503.3	497.3
65°	485.2	476.1	461.0	447.4	439.9
67.5°	424.7	417.1	403.6	393.0	387.0
70°	368.8	362.7	349.1	338.5	332.5
72.5°	311.4	305.3	297.8	287.2	282.7
75°	253.9	251.0	243.3	234.3	237.3
77.5°	202.5	196.4	193.4	188.8	184.4
80°	151.2	149.6	146.5	142.1	139.1
82.5°	102.8	102.8	101.4	95.2	95.2
85°	61.9	60.5	59.0	54.3	52.9
87.5°	27.3	24.2	21.2	16.7	15.0
90°	1.2	14.7	24.6	30.9	33.2
92.5°	30.9	26.0	29.6	32.1	33.2
95°	80.1	39.4	48.1	54.3	53.0
97.5°	144.2	43.2	62.8	66.7	67.8
100°	218.3	49.4	70.3	80.1	82.6
102.5°	299.6	297.2	72.8	86.2	90.1
105°	374.9	411.9	75.2	88.8	93.7
107.5°	462.4	493.1	77.8	91.2	96.2
110°	546.3	572.1	215.8	92.5	97.4

TEST NUMBER: P907763

CATALOG NUMBER: DFN2DIP-4P4F0-040D050US840-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	625.2	647.3	626.4	94.9	98.7
115°	709.0	729.9	760.8	190.0	101.2
117.5°	781.7	806.4	827.5	651.0	328.0
120°	863.1	881.6	903.8	918.7	752.1
122.5°	932.1	951.9	976.6	984.0	985.3
125°	1002.4	1018.6	1042.0	1050.6	1054.3
127.5°	1066.5	1083.8	1102.5	1114.7	1115.9
130°	1127.0	1146.8	1160.2	1173.9	1172.8
132.5°	1188.7	1204.8	1218.2	1229.4	1228.2
135°	1240.5	1260.3	1271.2	1283.7	1281.2
137.5°	1294.6	1309.5	1321.9	1334.2	1330.6
140°	1347.7	1357.7	1371.1	1382.2	1376.1
142.5°	1392.2	1400.9	1416.8	1426.6	1420.5
145°	1439.1	1437.7	1458.6	1467.3	1461.2
147.5°	1479.7	1475.9	1496.9	1503.1	1498.2
150°	1519.1	1510.6	1530.2	1537.6	1531.5
152.5°	1552.4	1542.6	1561.1	1568.5	1559.8
155°	1584.5	1573.5	1588.2	1595.6	1585.8
157.5°	1610.3	1600.5	1611.6	1620.3	1610.3
160°	1632.6	1625.2	1632.6	1639.9	1631.3
162.5°	1652.2	1645.0	1651.0	1659.7	1648.6
165°	1669.5	1662.2	1665.9	1674.5	1665.9
167.5°	1683.1	1675.7	1679.5	1688.1	1677.0
170°	1694.3	1686.8	1689.3	1697.9	1686.8
172.5°	1701.6	1694.3	1696.8	1705.4	1694.3
175°	1707.8	1699.1	1701.6	1710.2	1697.9
177.5°	1710.2	1701.6	1702.9	1711.5	1700.4
180°	1704.0	1704.0	1704.0	1704.0	1704.0

TEST NUMBER: P907763

CATALOG NUMBER: DFN2DIP-4P4F0-040D050US840-FLONL

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	6.83	7.64	7.83	8.65	10.00	6.38	7.19	7.38	8.21	9.56
	3H	8.49	9.22	9.50	10.24	11.61	8.00	8.73	9.01	9.75	11.12
	4H	9.08	9.77	10.10	10.79	12.17	8.58	9.27	9.61	10.30	11.68
	6H	9.48	10.12	10.52	11.15	12.53	8.98	9.62	10.02	10.65	12.03
	8H	9.59	10.19	10.63	11.24	12.62	9.08	9.69	10.12	10.74	12.12
	12H	9.63	10.21	10.68	11.25	12.66	9.12	9.70	10.17	10.74	12.15
4H	2H	7.28	7.97	8.31	9.00	10.38	6.93	7.62	7.96	8.64	10.02
	3H	9.15	9.73	10.19	10.78	12.17	8.74	9.32	9.78	10.37	11.76
	4H	9.87	10.40	10.91	11.44	12.85	9.44	9.97	10.49	11.02	12.43
	6H	10.38	10.84	11.44	11.91	13.31	9.95	10.41	11.01	11.48	12.88
	8H	10.54	10.96	11.59	12.02	13.44	10.10	10.52	11.16	11.58	13.01
	12H	10.61	10.99	11.69	12.07	13.50	10.16	10.54	11.24	11.62	13.05
8H	4H	10.06	10.48	11.12	11.55	12.97	9.68	10.11	10.74	11.17	12.59
	6H	10.70	11.05	11.78	12.15	13.57	10.31	10.66	11.39	11.77	13.19
	8H	10.92	11.23	12.01	12.31	13.75	10.53	10.84	11.62	11.92	13.36
	12H	11.05	11.32	12.15	12.41	13.89	10.64	10.91	11.73	11.99	13.47
12H	4H	10.04	10.43	11.12	11.50	12.93	9.68	10.06	10.75	11.14	12.56
	6H	10.73	11.03	11.81	12.12	13.56	10.35	10.66	11.44	11.75	13.19
	8H	10.97	11.24	12.06	12.32	13.80	10.59	10.86	11.68	11.94	13.42

END OF REPORT