

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: P907643

Luminaire Tested: DFN2DIP-4P3F0-020D050US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907643
REPORT IS A COMBINATION OF REPORTS P900579 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D050US840-FLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

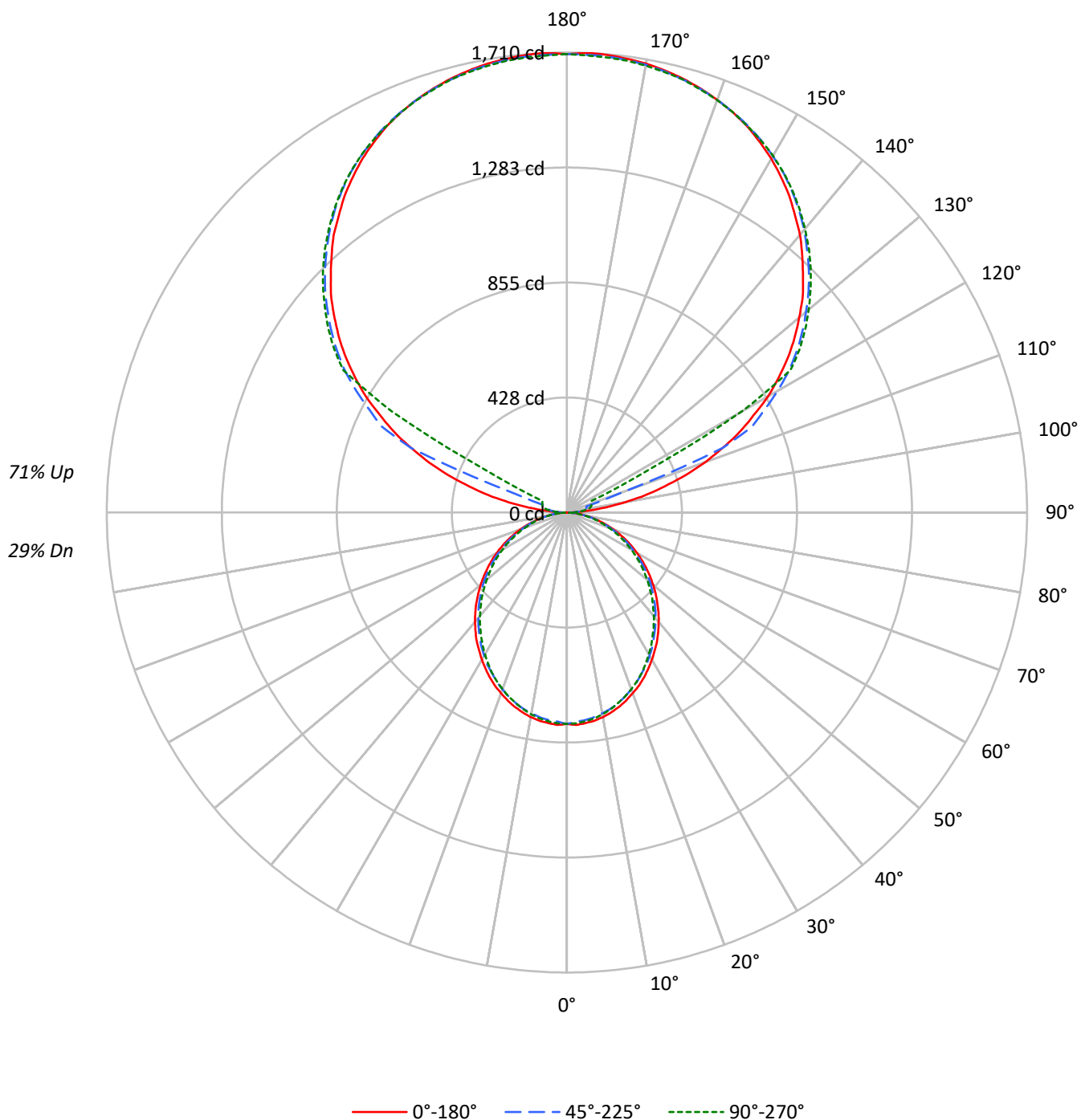
Lumens per Lamp: N/A
Luminaire Lumens: 6998.4 lumens
Efficiency: N/A
Efficacy: 130.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 53.8
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

TEST NUMBER: P907643

CATALOG NUMBER: DFN2DIP-4P3F0-020D050US840-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P907643

CATALOG NUMBER: DFN2DIP-4P3F0-020D050US840-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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	62	60	58	47	45	44	32	31	31
2	85	77	72	67	76	70	65	60	55	51	48	41	39	37	28	27	26
3	77	68	61	55	69	61	55	50	48	44	41	36	33	31	25	23	22
4	71	60	53	47	63	54	48	43	43	38	34	32	29	27	22	21	19
5	65	53	46	40	58	48	41	36	38	33	30	29	26	23	20	18	16
6	59	48	40	34	53	43	36	31	34	29	26	26	23	20	18	16	14
7	55	43	35	30	49	39	32	27	31	26	23	24	20	18	17	14	13
8	51	39	31	26	45	35	29	24	28	23	20	22	18	16	15	13	11
9	47	35	28	23	42	32	26	21	26	21	18	20	16	14	14	12	10
10	44	32	25	21	39	29	23	19	24	19	16	18	15	13	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	896	896	896
5°	896	883	889
10°	889	870	876
15°	875	855	857
20°	857	835	838
25°	839	810	815
30°	816	788	787
35°	795	761	756
40°	768	734	728
45°	742	707	698
50°	713	678	664
55°	683	645	633
60°	649	606	597
65°	612	566	554
70°	564	516	509
75°	498	457	466
80°	419	381	385
85°	295	253	253

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1163 cd/sqm

TEST NUMBER: P907643

CATALOG NUMBER: DFN2DIP-4P3F0-020D050US840-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.0	1.1
10°-20°	208.1	3.0
20°-30°	305.8	4.4
30°-40°	355.2	5.1
40°-50°	354.8	5.1
50°-60°	309.4	4.4
60°-70°	228.7	3.3
70°-80°	129.4	1.8
80°-90°	37.2	0.5
90°-100°	56.2	0.8
100°-110°	209.5	3.0
110°-120°	555.6	7.9
120°-130°	921.4	13.2
130°-140°	978.8	14.0
140°-150°	909.7	13.0
150°-160°	731.3	10.5
160°-170°	471.2	6.7
170°-180°	162.2	2.3
0°-30°	587.9	8.4
0°-40°	943.2	13.5
0°-60°	1607.3	23.0
0°-90°	2002.5	28.6
90°-120°	821.2	11.7
90°-150°	3631.1	51.9
90°-180°	4996.0	71.4
0°-180°	6998.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	786	786	786	786	786	
5°	786	783	775	781	779	75
15°	748	744	734	737	733	211
25°	677	671	658	660	658	312
35°	584	577	564	560	556	365
45°	475	470	459	450	447	367
55°	360	355	346	337	333	322
65°	243	238	231	224	220	240
75°	127	126	122	117	119	135
85°	31	30	30	27	26	35
90°	1	15	25	31	33	6
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: P907643

CATALOG NUMBER: DFN2DIP-4P3F0-020D050US840-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	785.9	785.9	785.9	785.9	785.9
2.5°	790.4	786.7	778.3	785.9	784.5
5°	785.9	782.9	774.6	780.6	779.1
7.5°	780.6	776.1	767.8	773.9	772.3
10°	772.3	767.1	758.0	764.0	761.7
12.5°	760.9	756.5	747.4	751.1	749.6
15°	748.1	743.7	733.8	736.8	733.1
17.5°	732.3	727.8	717.9	721.6	717.9
20°	714.9	710.3	699.7	702.1	699.0
22.5°	697.5	690.7	680.9	680.9	679.3
25°	677.1	671.1	658.2	659.6	658.2
27.5°	654.4	649.1	639.3	637.1	633.3
30°	631.8	625.7	614.4	612.2	609.0
32.5°	607.5	603.1	591.0	586.4	583.4
35°	584.2	576.6	564.5	560.0	556.1
37.5°	557.7	550.9	538.8	533.5	529.7
40°	530.5	524.4	512.3	505.6	502.5
42.5°	504.0	498.0	485.9	478.4	473.8
45°	475.3	470.1	458.7	450.4	447.4
47.5°	447.4	442.1	430.0	421.6	417.2
50°	417.9	414.1	403.5	392.9	389.2
52.5°	389.2	383.8	374.1	365.8	360.5
55°	359.7	355.2	346.1	337.1	333.3
57.5°	330.2	326.5	316.6	307.6	304.5
60°	300.7	297.8	287.2	278.8	276.6
62.5°	272.1	266.7	259.2	251.7	248.6
65°	242.6	238.0	230.6	223.7	219.9
67.5°	212.4	208.5	201.8	196.5	193.5
70°	184.4	181.4	174.5	169.3	166.3
72.5°	155.7	152.7	148.9	143.6	141.4
75°	126.9	125.5	121.6	117.1	118.7
77.5°	101.3	98.3	96.6	94.4	92.2
80°	75.6	74.8	73.3	71.0	69.5
82.5°	51.4	51.4	50.7	47.7	47.7
85°	30.9	30.2	29.5	27.2	26.5
87.5°	13.6	12.1	10.6	8.4	7.6
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: P907643

CATALOG NUMBER: DFN2DIP-4P3F0-020D050US840-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: P907643

CATALOG NUMBER: DFN2DIP-4P3F0-020D050US840-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	4.45	5.15	5.57	6.26	7.81	4.00	4.70	5.13	5.82	7.36
	3H	6.09	6.72	7.22	7.84	9.40	5.60	6.23	6.73	7.35	8.91
	4H	6.67	7.26	7.81	8.39	9.95	6.18	6.77	7.32	7.89	9.46
	6H	7.06	7.60	8.20	8.73	10.31	6.56	7.10	7.70	8.23	9.81
	8H	7.16	7.67	8.31	8.82	10.39	6.65	7.17	7.80	8.31	9.89
	12H	7.20	7.69	8.35	8.82	10.42	6.69	7.18	7.84	8.32	9.91
4H	2H	4.89	5.48	6.03	6.60	8.17	4.53	5.12	5.68	6.25	7.82
	3H	6.73	7.23	7.88	8.38	9.96	6.32	6.82	7.48	7.97	9.55
	4H	7.44	7.89	8.59	9.03	10.63	7.01	7.47	8.17	8.61	10.21
	6H	7.94	8.33	9.10	9.49	11.08	7.50	7.89	8.66	9.06	10.65
	8H	8.08	8.44	9.24	9.60	11.20	7.64	8.01	8.80	9.16	10.77
	12H	8.14	8.47	9.32	9.64	11.25	7.69	8.02	8.87	9.19	10.80
8H	4H	7.61	7.98	8.77	9.13	10.74	7.24	7.60	8.40	8.75	10.36
	6H	8.23	8.53	9.41	9.73	11.33	7.85	8.15	9.03	9.34	10.95
	8H	8.45	8.71	9.63	9.88	11.51	8.06	8.32	9.24	9.49	11.12
	12H	8.57	8.80	9.76	9.97	11.63	8.16	8.39	9.35	9.56	11.22
12H	4H	7.59	7.92	8.77	9.09	10.70	7.22	7.55	8.40	8.72	10.33
	6H	8.26	8.52	9.44	9.70	11.32	7.89	8.15	9.07	9.32	10.95
	8H	8.49	8.72	9.68	9.89	11.55	8.11	8.34	9.30	9.51	11.17

END OF REPORT