

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: P908317

Luminaire Tested: DFN2DIP-PN2F0-020D050US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908317
REPORT IS A COMBINATION OF REPORTS P901011 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D050US840-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

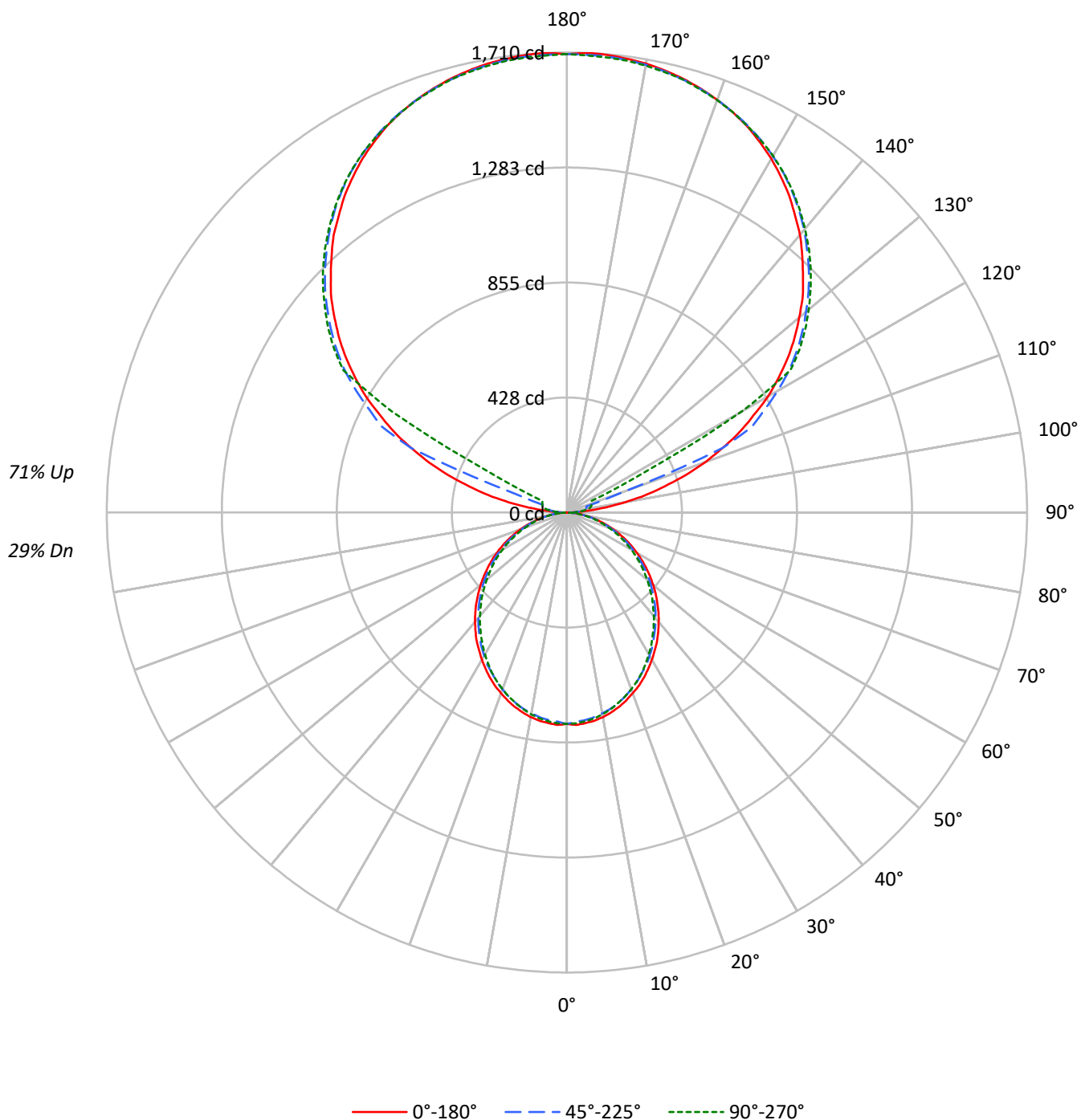
Lumens per Lamp: N/A
Luminaire Lumens: 6998.4 lumens
Efficiency: N/A
Efficacy: 121.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 57.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P908317

CATALOG NUMBER: DFN2DIP-PN2F0-020D050US840-FLLONL

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	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°	1702	1702	1702
5°	1702	1675	1687
10°	1686	1649	1662
15°	1658	1618	1624
20°	1622	1576	1585
25°	1586	1528	1540
30°	1541	1482	1484
35°	1499	1429	1424
40°	1447	1375	1368
45°	1395	1321	1310
50°	1338	1264	1243
55°	1278	1198	1181
60°	1211	1121	1110
65°	1137	1040	1026
70°	1042	941	935
75°	913	823	848
80°	755	672	688
85°	512	425	432

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1563 cd/sqm

TEST NUMBER: P908317

CATALOG NUMBER: DFN2DIP-PN2F0-020D050US840-FLLONL

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: P908317

CATALOG NUMBER: DFN2DIP-PN2F0-020D050US840-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: P908317

CATALOG NUMBER: DFN2DIP-PN2F0-020D050US840-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

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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	6.60	7.29	7.72	8.41	9.96	6.16	6.86	7.28	7.97	9.52
	3H	8.22	8.85	9.35	9.97	11.53	7.74	8.37	8.87	9.49	11.06
	4H	8.79	9.38	9.93	10.51	12.08	8.31	8.90	9.45	10.03	11.59
	6H	9.17	9.71	10.31	10.84	12.42	8.68	9.23	9.83	10.35	11.93
	8H	9.26	9.78	10.41	10.92	12.49	8.77	9.29	9.92	10.43	12.01
	12H	9.29	9.79	10.45	10.92	12.52	8.80	9.29	9.96	10.43	12.02
4H	2H	7.03	7.62	8.18	8.75	10.31	6.68	7.27	7.83	8.40	9.96
	3H	8.86	9.35	10.01	10.50	12.08	8.46	8.95	9.61	10.10	11.68
	4H	9.55	10.00	10.70	11.14	12.74	9.13	9.59	10.29	10.73	12.33
	6H	10.03	10.42	11.19	11.58	13.17	9.61	10.00	10.77	11.16	12.75
	8H	10.17	10.53	11.33	11.69	13.29	9.75	10.11	10.90	11.26	12.87
	12H	10.22	10.55	11.40	11.72	13.33	9.79	10.12	10.97	11.29	12.90
8H	4H	9.72	10.08	10.88	11.24	12.84	9.35	9.71	10.51	10.87	12.47
	6H	10.32	10.62	11.50	11.81	13.42	9.94	10.24	11.12	11.44	13.04
	8H	10.52	10.79	11.71	11.96	13.58	10.14	10.40	11.33	11.58	13.20
	12H	10.63	10.86	11.82	12.03	13.69	10.24	10.47	11.43	11.64	13.30
12H	4H	9.69	10.02	10.87	11.19	12.80	9.33	9.66	10.51	10.83	12.44
	6H	10.34	10.60	11.53	11.78	13.40	9.98	10.24	11.16	11.41	13.04
	8H	10.56	10.79	11.75	11.96	13.62	10.19	10.42	11.38	11.59	13.25

END OF REPORT