

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: P928222

Luminaire Tested: DFN2DIP-HX4F0-050D080US927-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928222
REPORT IS A COMBINATION OF REPORTS P900894 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D080US927-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

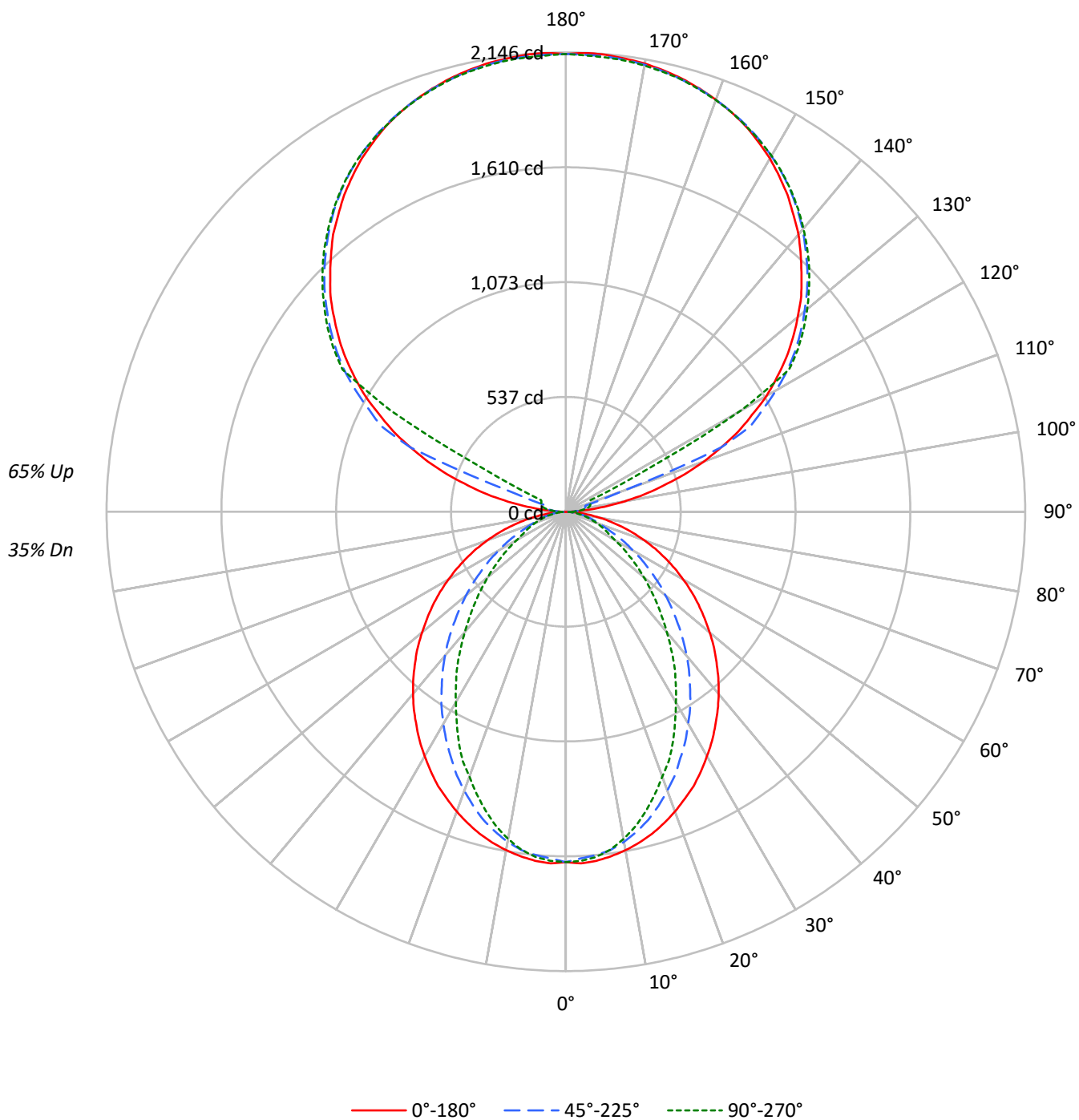
Lumens per Lamp: N/A
Luminaire Lumens: 9638.7 lumens
Efficiency: N/A
Efficacy: 94.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 102
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P928222

CATALOG NUMBER: DFN2DIP-HX4F0-050D080US927-RLLONL

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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	42	42	42
1	95	91	87	84	86	82	79	76	66	64	62	51	50	49	38	37	36
2	87	80	74	69	78	72	67	63	58	55	52	46	43	41	34	32	31
3	79	70	63	58	71	64	58	53	52	47	44	41	38	35	30	28	27
4	72	62	55	49	65	57	50	45	46	41	38	36	33	30	27	25	23
5	67	56	48	42	60	51	44	39	41	36	33	33	29	27	25	22	21
6	61	50	42	37	55	45	39	34	37	32	29	30	26	23	22	20	18
7	57	45	37	32	51	41	34	30	34	29	25	27	23	21	21	18	16
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	17	15
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	18	15	13
10	46	34	27	23	41	31	25	21	26	21	18	21	18	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1217	1217	1217
5°	1219	1198	1205
10°	1207	1174	1166
15°	1191	1136	1106
20°	1169	1082	1031
25°	1146	1022	959
30°	1116	961	868
35°	1087	895	788
40°	1057	827	697
45°	1022	751	613
50°	986	674	532
55°	948	592	454
60°	904	507	374
65°	854	420	337
70°	794	339	305
75°	717	299	277
80°	607	251	241
85°	425	168	181

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1098 cd/sqm

TEST NUMBER: P928222

CATALOG NUMBER: DFN2DIP-HX4F0-050D080US927-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.4	1.6
10°-20°	421.1	4.4
20°-30°	591.2	6.1
30°-40°	644.4	6.7
40°-50°	592.3	6.1
50°-60°	465.2	4.8
60°-70°	302.8	3.1
70°-80°	155.9	1.6
80°-90°	43.6	0.5
90°-100°	70.5	0.7
100°-110°	262.9	2.7
110°-120°	697.1	7.2
120°-130°	1156.2	12.0
130°-140°	1228.2	12.7
140°-150°	1141.5	11.8
150°-160°	917.7	9.5
160°-170°	591.3	6.1
170°-180°	203.5	2.1
0°-30°	1165.7	12.1
0°-40°	1810.1	18.8
0°-60°	2867.6	29.8
0°-90°	3369.8	35.0
90°-120°	1030.5	10.7
90°-150°	4556.4	47.3
90°-180°	6269.0	65.0
0°-180°	9638.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1637	1637	1637	1637	1637	
5°	1637	1629	1610	1623	1619	155
15°	1557	1540	1490	1462	1447	439
25°	1413	1366	1268	1207	1185	650
35°	1218	1142	1012	918	886	762
45°	995	896	741	635	600	769
55°	757	641	481	392	364	676
65°	511	391	258	207	203	507
75°	272	169	118	108	107	288
85°	64	33	28	28	28	73
90°	2	18	31	39	42	9
95°	100	49	60	68	66	119
105°	470	517	94	111	118	503
115°	890	916	955	238	127	876
125°	1258	1278	1307	1318	1323	1122
135°	1557	1581	1595	1611	1608	1202
145°	1806	1804	1830	1841	1834	1129
155°	1988	1974	1993	2002	1990	916
165°	2095	2086	2090	2101	2090	592
175°	2143	2132	2135	2146	2131	204
180°	2138	2138	2138	2138	2138	

TEST NUMBER: P928222

CATALOG NUMBER: DFN2DIP-HX4F0-050D080US927-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1636.7	1636.7	1636.7	1636.7	1636.7
2.5°	1644.0	1636.7	1620.4	1635.2	1632.2
5°	1636.7	1629.3	1610.0	1623.3	1618.9
7.5°	1623.3	1614.5	1593.7	1599.6	1592.2
10°	1605.5	1595.2	1565.6	1561.1	1552.2
12.5°	1583.4	1570.1	1530.0	1521.2	1504.8
15°	1556.7	1540.4	1490.1	1462.0	1447.1
17.5°	1525.6	1501.9	1439.6	1407.1	1383.3
20°	1490.1	1460.4	1386.3	1349.4	1316.7
22.5°	1451.6	1417.4	1331.5	1281.2	1259.0
25°	1413.0	1365.6	1267.8	1207.2	1184.8
27.5°	1367.2	1316.7	1208.6	1139.0	1104.9
30°	1318.3	1261.9	1143.4	1067.9	1027.9
32.5°	1270.8	1202.7	1081.3	992.4	955.3
35°	1217.5	1142.0	1011.7	918.3	885.7
37.5°	1165.7	1084.2	946.5	844.2	807.3
40°	1110.9	1022.1	878.2	773.2	734.7
42.5°	1054.6	959.8	810.2	700.5	663.6
45°	995.4	896.1	740.6	635.3	599.8
47.5°	939.1	834.0	674.0	568.7	536.2
50°	876.9	771.7	608.8	506.5	475.5
52.5°	816.1	705.0	546.6	448.8	420.7
55°	756.8	641.3	481.3	392.5	364.4
57.5°	696.2	577.7	423.6	340.7	317.0
60°	633.9	515.4	362.8	287.4	263.7
62.5°	573.2	454.8	311.0	240.0	228.2
65°	511.0	391.0	257.7	207.4	202.9
67.5°	451.8	331.8	207.4	182.2	177.7
70°	389.6	274.0	171.8	157.0	151.0
72.5°	330.3	220.7	143.7	131.9	128.9
75°	272.5	168.8	118.5	108.1	106.7
77.5°	214.8	119.9	93.4	87.4	84.3
80°	161.4	85.9	71.0	65.2	65.2
82.5°	112.5	57.8	48.9	45.9	45.9
85°	63.7	32.6	28.1	28.1	28.1
87.5°	23.8	11.8	11.8	10.4	10.4
90°	1.5	18.5	30.9	38.7	41.7
92.5°	38.7	32.6	37.1	40.2	41.7
95°	100.5	49.4	60.3	68.2	66.5
97.5°	181.0	54.2	78.8	83.6	85.1
100°	274.0	61.9	88.2	100.5	103.6
102.5°	376.0	373.0	91.3	108.2	113.0
105°	470.4	516.9	94.4	111.4	117.6
107.5°	580.2	618.8	97.6	114.4	120.7
110°	685.6	717.9	270.9	116.1	122.2

TEST NUMBER: P928222

CATALOG NUMBER: DFN2DIP-HX4F0-050D080US927-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	784.6	812.3	786.1	119.0	123.9
115°	889.7	915.9	954.7	238.3	127.0
117.5°	981.0	1011.9	1038.3	816.9	411.6
120°	1083.1	1106.3	1134.2	1152.8	943.8
122.5°	1169.6	1194.5	1225.5	1234.7	1236.4
125°	1257.9	1278.1	1307.4	1318.3	1322.9
127.5°	1338.3	1360.0	1383.4	1398.8	1400.3
130°	1414.2	1439.0	1455.9	1473.0	1471.5
132.5°	1491.6	1511.8	1528.7	1542.7	1541.2
135°	1556.6	1581.4	1595.2	1610.8	1607.7
137.5°	1624.6	1643.2	1658.8	1674.2	1669.6
140°	1691.1	1703.6	1720.5	1734.5	1726.7
142.5°	1747.0	1757.8	1777.8	1790.2	1782.4
145°	1805.8	1804.1	1830.4	1841.2	1833.5
147.5°	1856.7	1852.1	1878.3	1886.1	1880.0
150°	1906.3	1895.4	1920.2	1929.4	1921.7
152.5°	1948.0	1935.6	1958.8	1968.2	1957.3
155°	1988.2	1974.5	1993.0	2002.2	1989.9
157.5°	2020.7	2008.4	2022.4	2033.2	2020.7
160°	2048.7	2039.3	2048.7	2057.9	2047.0
162.5°	2073.3	2064.1	2071.8	2082.6	2068.7
165°	2095.0	2085.8	2090.4	2101.2	2090.4
167.5°	2112.0	2102.7	2107.4	2118.3	2104.3
170°	2126.0	2116.6	2119.8	2130.6	2116.6
172.5°	2135.2	2126.0	2129.1	2140.0	2126.0
175°	2142.9	2132.1	2135.2	2146.0	2130.6
177.5°	2146.0	2135.2	2136.8	2147.7	2133.7
180°	2138.3	2138.3	2138.3	2138.3	2138.3

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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	6.24	6.96	7.32	8.04	9.51	2.21	2.93	3.29	4.01	5.48
	3H	7.91	8.55	9.00	9.64	11.13	3.39	4.04	4.48	5.12	6.62
	4H	8.51	9.12	9.61	10.21	11.71	3.84	4.45	4.94	5.54	7.04
	6H	8.93	9.49	10.04	10.58	12.09	4.16	4.72	5.27	5.81	7.32
	8H	9.05	9.59	10.17	10.69	12.20	4.25	4.78	5.36	5.89	7.39
	12H	9.11	9.62	10.23	10.72	12.24	4.29	4.79	5.40	5.89	7.42
4H	2H	6.24	6.85	7.35	7.94	9.44	2.79	3.40	3.90	4.49	5.99
	3H	8.06	8.57	9.18	9.69	11.20	4.14	4.64	5.25	5.76	7.27
	4H	8.75	9.22	9.87	10.32	11.85	4.68	5.15	5.80	6.25	7.78
	6H	9.26	9.66	10.39	10.79	12.31	5.10	5.50	6.22	6.62	8.15
	8H	9.44	9.81	10.56	10.93	12.47	5.22	5.60	6.35	6.72	8.25
	12H	9.53	9.86	10.67	11.00	12.54	5.29	5.62	6.43	6.75	8.30
8H	4H	8.71	9.09	9.84	10.20	11.74	4.95	5.33	6.08	6.45	7.98
	6H	9.28	9.58	10.42	10.75	12.28	5.47	5.78	6.62	6.94	8.47
	8H	9.49	9.76	10.65	10.90	12.46	5.66	5.93	6.82	7.07	8.63
	12H	9.63	9.86	10.78	11.00	12.59	5.78	6.01	6.93	7.15	8.74
12H	4H	8.66	9.00	9.80	10.13	11.67	4.95	5.29	6.10	6.42	7.97
	6H	9.25	9.52	10.40	10.66	12.22	5.52	5.79	6.67	6.93	8.49
	8H	9.47	9.70	10.62	10.84	12.43	5.73	5.96	6.88	7.10	8.69

END OF REPORT