

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: P928282

Luminaire Tested: DFN2DIP-HX4F0-070D050US927-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928282
REPORT IS A COMBINATION OF REPORTS P900844 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-070D050US927-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

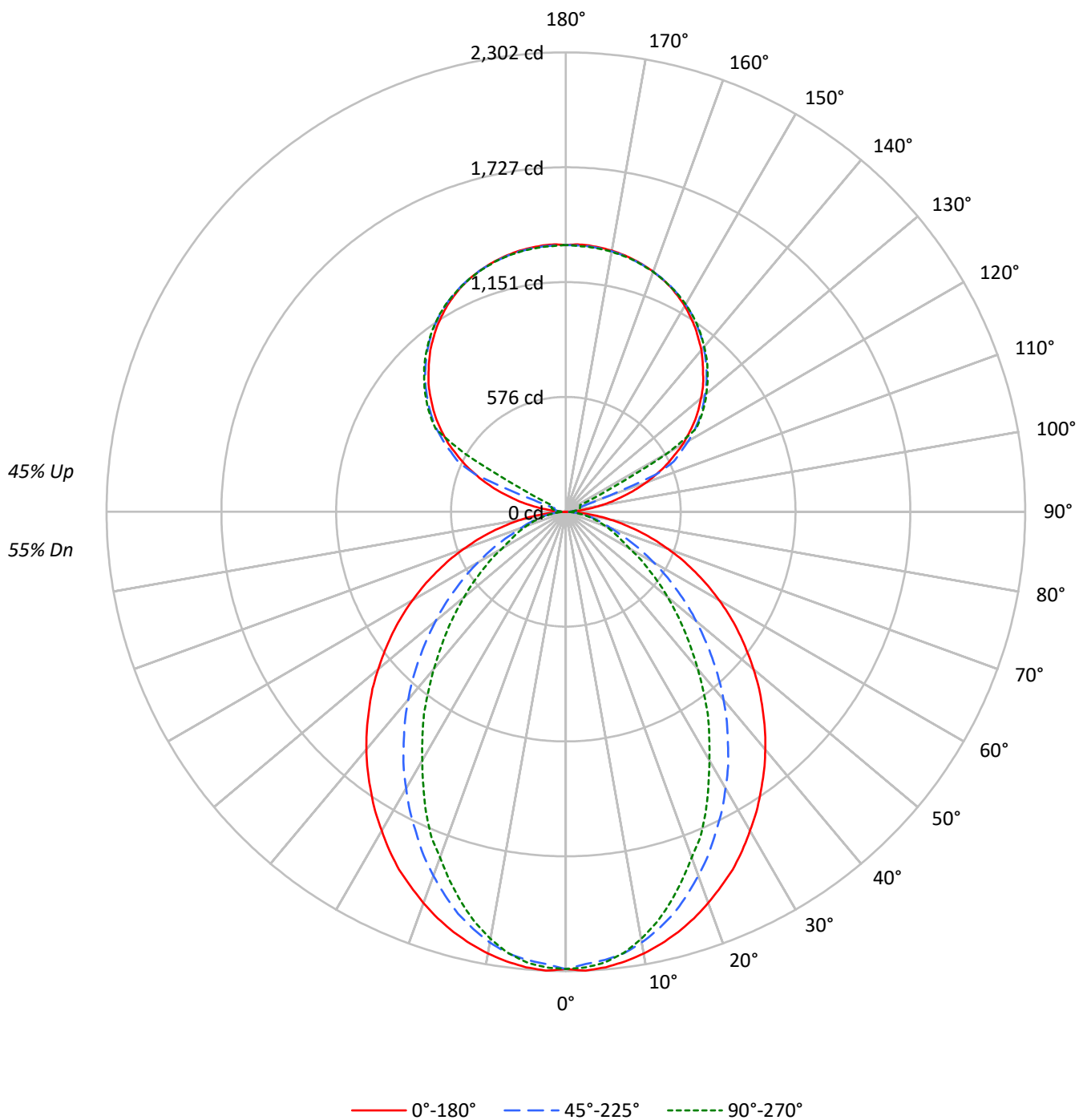
Lumens per Lamp: N/A
Luminaire Lumens: 8632.8 lumens
Efficiency: N/A
Efficacy: 83.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 103.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P928282

CATALOG NUMBER: DFN2DIP-HX4F0-070D050US927-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	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60
1	99	95	91	88	92	89	85	82	76	74	72	65	63	62	54	53	52
2	91	84	78	73	84	78	73	69	67	63	60	57	55	52	48	46	45
3	83	74	67	61	77	69	63	58	60	55	51	51	48	45	43	41	39
4	76	66	58	52	71	62	55	50	54	48	44	46	42	39	39	36	34
5	70	59	51	45	65	55	48	43	48	43	38	42	37	34	35	32	30
6	65	53	45	40	60	50	43	38	44	38	34	38	33	30	32	29	26
7	60	48	40	35	56	45	38	33	40	34	30	35	30	27	30	26	24
8	56	44	36	31	52	41	34	30	36	31	27	32	27	24	27	24	21
9	52	40	33	28	49	38	31	27	34	28	24	29	25	22	25	22	19
10	49	37	30	25	46	35	28	24	31	26	22	27	23	20	24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1704	1704	1704
5°	1707	1677	1688
10°	1690	1644	1633
15°	1667	1590	1548
20°	1636	1515	1444
25°	1605	1431	1343
30°	1563	1345	1216
35°	1521	1253	1104
40°	1479	1157	975
45°	1430	1051	859
50°	1380	944	745
55°	1327	829	636
60°	1266	710	523
65°	1196	588	471
70°	1111	474	426
75°	1004	418	388
80°	850	352	337
85°	594	236	254

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1430 cd/sqm

TEST NUMBER: P928282

CATALOG NUMBER: DFN2DIP-HX4F0-070D050US927-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.7	2.5
10°-20°	589.5	6.8
20°-30°	827.7	9.6
30°-40°	902.2	10.5
40°-50°	829.2	9.6
50°-60°	651.2	7.5
60°-70°	423.9	4.9
70°-80°	218.2	2.5
80°-90°	58.0	0.7
90°-100°	44.1	0.5
100°-110°	164.3	1.9
110°-120°	435.7	5.0
120°-130°	722.6	8.4
130°-140°	767.6	8.9
140°-150°	713.4	8.3
150°-160°	573.6	6.6
160°-170°	369.6	4.3
170°-180°	127.2	1.5
0°-30°	1631.9	18.9
0°-40°	2534.1	29.4
0°-60°	4014.6	46.5
0°-90°	4714.7	54.6
90°-120°	644.1	7.5
90°-150°	2847.7	33.0
90°-180°	3918.0	45.4
0°-180°	8632.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2291	2291	2291	2291	2291	
5°	2291	2281	2254	2273	2266	217
15°	2179	2156	2086	2047	2026	614
25°	1978	1912	1775	1690	1659	910
35°	1704	1599	1416	1286	1240	1067
45°	1394	1254	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	715	547	361	290	284	709
75°	382	236	166	151	149	403
85°	89	46	39	39	39	102
90°	1	12	19	24	26	8
95°	63	31	38	43	42	74
105°	294	323	59	70	74	314
115°	556	572	597	149	79	547
125°	786	799	817	824	827	701
135°	973	988	997	1007	1005	752
145°	1129	1128	1144	1151	1146	706
155°	1243	1234	1246	1251	1244	573
165°	1309	1304	1306	1313	1306	370
175°	1339	1332	1334	1341	1332	127
180°	1336	1336	1336	1336	1336	

TEST NUMBER: P928282

CATALOG NUMBER: DFN2DIP-HX4F0-070D050US927-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.3	2291.3	2291.3	2291.3	2291.3
2.5°	2301.6	2291.3	2268.4	2289.4	2285.2
5°	2291.3	2281.0	2254.0	2272.6	2266.5
7.5°	2272.6	2260.3	2231.3	2239.4	2229.1
10°	2247.8	2233.3	2191.9	2185.5	2173.2
12.5°	2216.7	2198.0	2142.0	2129.6	2106.7
15°	2179.3	2156.5	2086.0	2046.7	2026.0
17.5°	2135.8	2102.6	2015.5	1969.9	1936.7
20°	2086.0	2044.5	1940.9	1889.2	1843.4
22.5°	2032.2	1984.4	1864.1	1793.6	1762.7
25°	1978.3	1911.8	1775.0	1690.0	1658.8
27.5°	1914.0	1843.4	1692.0	1594.6	1546.9
30°	1845.6	1766.6	1600.7	1495.1	1439.1
32.5°	1779.1	1683.7	1513.8	1389.3	1337.4
35°	1704.5	1598.7	1416.4	1285.7	1240.0
37.5°	1632.0	1517.8	1325.1	1181.8	1130.2
40°	1555.2	1430.9	1229.6	1082.4	1028.5
42.5°	1476.4	1343.8	1134.3	980.7	929.1
45°	1393.5	1254.4	1036.9	889.5	839.8
47.5°	1314.7	1167.6	943.6	796.2	750.7
50°	1227.6	1080.4	852.3	709.1	665.8
52.5°	1142.5	986.9	765.2	628.3	588.9
55°	1059.5	897.8	673.8	549.6	510.2
57.5°	974.6	808.7	593.1	476.9	443.8
60°	887.5	721.6	508.0	402.4	369.2
62.5°	802.5	636.7	435.4	336.0	319.4
65°	715.4	547.4	360.8	290.4	284.0
67.5°	632.5	464.4	290.4	254.9	248.8
70°	545.4	383.6	240.5	219.8	211.4
72.5°	462.4	308.9	201.1	184.6	180.4
75°	381.5	236.3	165.8	151.4	149.4
77.5°	300.7	167.8	130.7	122.3	118.2
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.5	80.9	68.4	64.2	64.2
85°	89.1	45.5	39.4	39.4	39.4
87.5°	33.2	16.5	16.5	14.5	14.5
90°	1.0	11.6	19.3	24.2	26.1
92.5°	24.2	20.4	23.2	25.2	26.1
95°	62.8	30.9	37.7	42.6	41.6
97.5°	113.1	33.9	49.3	52.3	53.1
100°	171.2	38.7	55.1	62.8	64.8
102.5°	235.0	233.1	57.1	67.6	70.6
105°	294.0	323.1	59.0	69.6	73.5
107.5°	362.7	386.7	61.0	71.5	75.5
110°	428.5	448.7	169.3	72.5	76.3

TEST NUMBER: P928282

CATALOG NUMBER: DFN2DIP-HX4F0-070D050US927-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	490.3	507.7	491.3	74.4	77.4
115°	556.1	572.5	596.7	149.0	79.4
117.5°	613.1	632.4	649.0	510.5	257.2
120°	676.9	691.4	708.8	720.5	589.9
122.5°	731.0	746.5	765.9	771.7	772.8
125°	786.1	798.8	817.2	823.9	826.8
127.5°	836.4	850.0	864.6	874.2	875.2
130°	883.9	899.4	909.9	920.6	919.7
132.5°	932.3	944.9	955.4	964.2	963.2
135°	972.9	988.4	997.0	1006.8	1004.8
137.5°	1015.3	1027.0	1036.7	1046.4	1043.5
140°	1056.9	1064.8	1075.3	1084.0	1079.3
142.5°	1091.9	1098.7	1111.2	1118.9	1114.0
145°	1128.6	1127.6	1144.0	1150.8	1145.9
147.5°	1160.4	1157.5	1174.0	1178.8	1175.0
150°	1191.4	1184.7	1200.1	1205.9	1201.1
152.5°	1217.5	1209.8	1224.3	1230.1	1223.3
155°	1242.6	1234.0	1245.6	1251.4	1243.7
157.5°	1262.9	1255.2	1264.0	1270.8	1262.9
160°	1280.4	1274.6	1280.4	1286.1	1279.4
162.5°	1295.8	1290.1	1294.8	1301.7	1292.9
165°	1309.3	1303.6	1306.5	1313.2	1306.5
167.5°	1320.0	1314.2	1317.2	1323.9	1315.2
170°	1328.7	1322.9	1324.9	1331.6	1322.9
172.5°	1334.5	1328.7	1330.7	1337.5	1328.7
175°	1339.4	1332.5	1334.5	1341.3	1331.6
177.5°	1341.3	1334.5	1335.5	1342.3	1333.6
180°	1336.4	1336.4	1336.4	1336.4	1336.4

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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	9.42	10.29	10.34	11.23	12.43	5.39	6.26	6.32	7.20	8.41
	3H	11.10	11.88	12.04	12.82	14.06	6.59	7.36	7.52	8.31	9.54
	4H	11.71	12.45	12.66	13.40	14.64	7.04	7.77	7.99	8.72	9.96
	6H	12.14	12.81	13.10	13.77	15.02	7.36	8.04	8.33	9.00	10.25
	8H	12.26	12.91	13.23	13.88	15.13	7.46	8.10	8.42	9.07	10.32
	12H	12.33	12.94	13.30	13.91	15.18	7.50	8.11	8.48	9.08	10.36
4H	2H	9.44	10.18	10.40	11.13	12.37	5.99	6.73	6.95	7.68	8.92
	3H	11.28	11.89	12.24	12.87	14.12	7.35	7.96	8.31	8.94	10.19
	4H	11.97	12.53	12.95	13.50	14.78	7.90	8.46	8.87	9.43	10.71
	6H	12.49	12.97	13.48	13.97	15.24	8.32	8.80	9.31	9.80	11.08
	8H	12.67	13.11	13.65	14.11	15.40	8.45	8.90	9.44	9.89	11.18
	12H	12.76	13.17	13.77	14.17	15.47	8.52	8.93	9.53	9.93	11.23
8H	4H	11.94	12.39	12.93	13.38	14.67	8.18	8.63	9.17	9.62	10.91
	6H	12.51	12.88	13.52	13.91	15.20	8.71	9.08	9.72	10.11	11.40
	8H	12.73	13.05	13.75	14.08	15.38	8.90	9.22	9.92	10.25	11.55
	12H	12.87	13.16	13.89	14.17	15.52	9.02	9.31	10.05	10.32	11.68
12H	4H	11.90	12.30	12.90	13.31	14.60	8.19	8.59	9.20	9.60	10.90
	6H	12.49	12.81	13.51	13.83	15.14	8.76	9.08	9.78	10.10	11.41
	8H	12.71	13.00	13.73	14.01	15.36	8.97	9.26	9.99	10.27	11.62

END OF REPORT