

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: P913713

Luminaire Tested: DFN2DIP-HX4F0-100D070US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913713
REPORT IS A COMBINATION OF REPORTS P899366 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-100D070US927-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

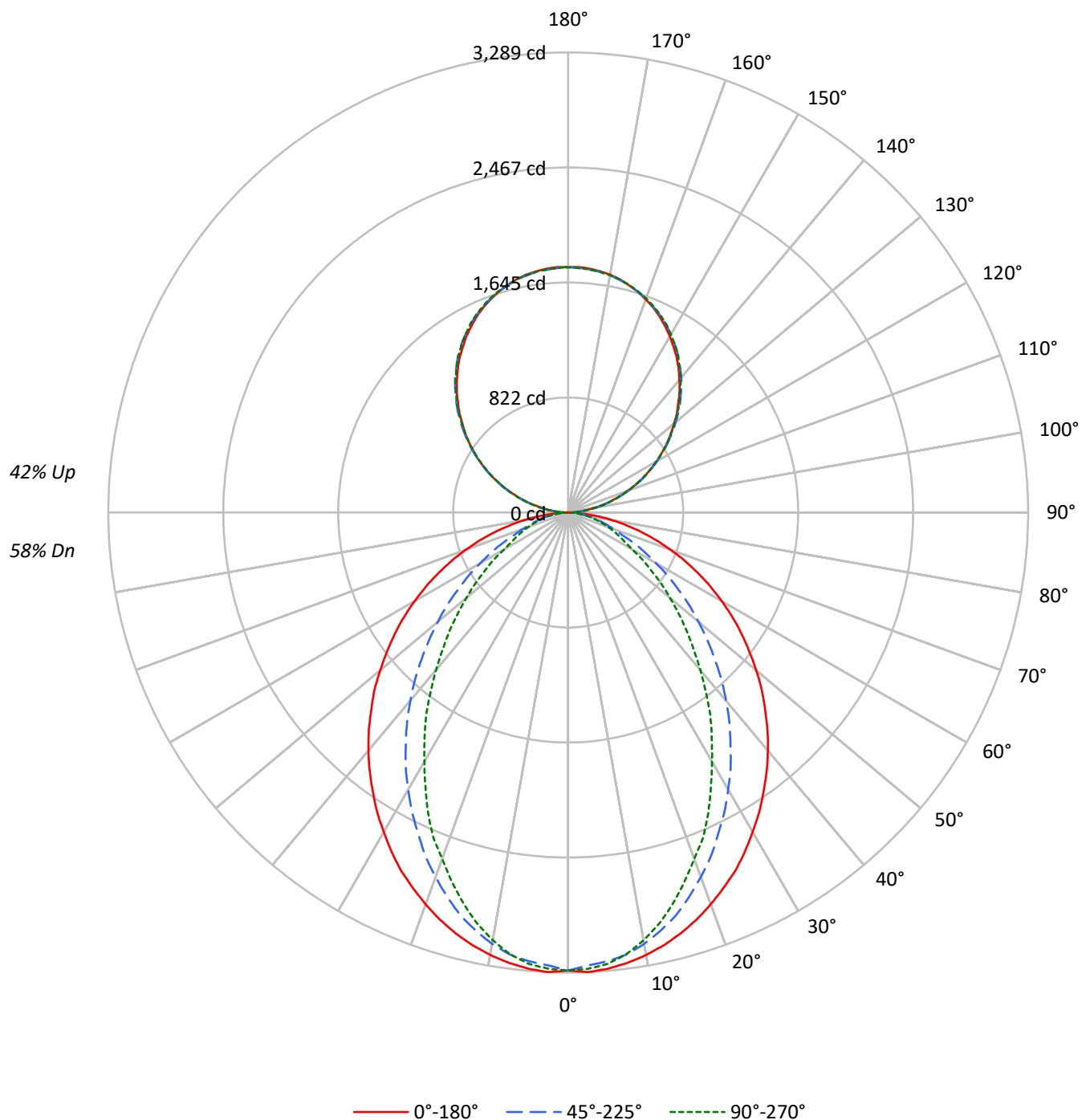
Lumens per Lamp: N/A
Luminaire Lumens: 11641.1 lumens
Efficiency: N/A
Efficacy: 83.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 138.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P913713

CATALOG NUMBER: DFN2DIP-HX4F0-100D070US927-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P913713

CATALOG NUMBER: DFN2DIP-HX4F0-100D070US927-RLLFLL

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	109	109	109	109	102	102	102	102	88	88	88	75	75	75	63	63	63
1	100	96	92	89	93	90	86	83	78	75	73	67	65	64	57	56	55
2	92	84	79	74	85	79	74	69	69	65	62	59	57	54	51	49	47
3	84	75	68	62	78	70	64	59	61	56	52	53	49	46	45	43	41
4	77	67	59	53	72	62	56	50	55	49	45	48	44	40	41	38	35
5	71	60	52	46	66	56	49	44	49	44	39	43	39	35	37	34	31
6	66	54	46	40	61	51	43	38	45	39	35	39	35	31	34	31	28
7	61	49	41	35	57	46	39	34	41	35	31	36	31	28	31	28	25
8	57	44	37	32	53	42	35	30	37	32	28	33	28	25	29	25	23
9	53	41	33	28	49	39	32	27	34	29	25	30	26	23	27	23	20
10	49	38	30	26	46	36	29	25	32	26	23	28	24	21	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2435	2435	2435
5°	2439	2396	2411
10°	2415	2349	2333
15°	2382	2272	2212
20°	2338	2165	2063
25°	2293	2045	1919
30°	2233	1922	1737
35°	2174	1790	1577
40°	2114	1654	1394
45°	2044	1502	1227
50°	1972	1349	1065
55°	1896	1185	908
60°	1809	1014	748
65°	1709	840	673
70°	1588	678	609
75°	1435	598	555
80°	1214	502	482
85°	849	336	362

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2044 cd/sqm

TEST NUMBER: P913713

CATALOG NUMBER: DFN2DIP-HX4F0-100D070US927-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	306.9	2.6
10°-20°	842.4	7.2
20°-30°	1182.6	10.2
30°-40°	1289.2	11.1
40°-50°	1184.9	10.2
50°-60°	930.5	8.0
60°-70°	605.7	5.2
70°-80°	311.8	2.7
80°-90°	84.6	0.7
90°-100°	108.5	0.9
100°-110°	344.8	3.0
110°-120°	590.1	5.1
120°-130°	776.1	6.7
130°-140°	871.1	7.5
140°-150°	854.2	7.3
150°-160°	716.6	6.2
160°-170°	475.2	4.1
170°-180°	166.1	1.4
0°-30°	2331.9	20.0
0°-40°	3621.0	31.1
0°-60°	5736.5	49.3
0°-90°	6738.5	57.9
90°-120°	1043.4	9.0
90°-150°	3544.8	30.5
90°-180°	4903.0	42.1
0°-180°	11641.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3274	3274	3274	3274	3274	
5°	3274	3259	3221	3247	3238	310
15°	3114	3081	2981	2924	2895	878
25°	2827	2732	2536	2415	2370	1300
35°	2436	2284	2024	1837	1772	1524
45°	1991	1792	1482	1271	1200	1538
55°	1514	1283	963	785	729	1353
65°	1022	782	516	415	406	1014
75°	545	338	237	216	213	577
85°	127	65	56	56	56	146
90°	2	19	52	49	50	11
95°	77	92	95	95	92	86
105°	318	322	326	328	328	336
115°	592	601	598	596	592	586
125°	861	874	870	866	864	770
135°	1114	1130	1134	1132	1128	861
145°	1352	1363	1372	1373	1367	845
155°	1546	1551	1556	1563	1558	712
165°	1682	1681	1681	1691	1684	475
175°	1751	1746	1743	1754	1745	166
180°	1754	1754	1754	1754	1754	



TEST NUMBER: P913713

CATALOG NUMBER: DFN2DIP-HX4F0-100D070US927-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3274.1	3274.1	3274.1	3274.1	3274.1
2.5°	3288.8	3274.1	3241.4	3271.2	3265.3
5°	3274.1	3259.3	3220.6	3247.4	3238.5
7.5°	3247.4	3229.7	3188.2	3199.9	3185.1
10°	3211.8	3191.1	3132.0	3122.9	3105.3
12.5°	3167.5	3140.8	3060.6	3043.0	3010.3
15°	3114.1	3081.3	2980.7	2924.5	2894.9
17.5°	3051.8	3004.3	2879.9	2814.8	2767.3
20°	2980.7	2921.3	2773.3	2699.4	2634.0
22.5°	2903.7	2835.5	2663.6	2563.0	2518.7
25°	2826.7	2731.8	2536.2	2414.9	2370.3
27.5°	2734.9	2634.0	2417.7	2278.5	2210.3
30°	2637.2	2524.3	2287.3	2136.4	2056.3
32.5°	2542.3	2405.8	2163.1	1985.2	1911.0
35°	2435.6	2284.5	2023.9	1837.1	1771.7
37.5°	2331.9	2168.8	1893.4	1688.8	1614.9
40°	2222.2	2044.6	1757.0	1546.7	1469.7
42.5°	2109.7	1920.1	1620.9	1401.4	1327.5
45°	1991.1	1792.5	1481.6	1271.0	1199.9
47.5°	1878.7	1668.3	1348.3	1137.7	1072.6
50°	1754.1	1543.8	1217.8	1013.2	951.3
52.5°	1632.4	1410.2	1093.4	897.8	841.5
55°	1513.9	1282.9	962.9	785.3	729.0
57.5°	1392.7	1155.6	847.6	681.5	634.1
60°	1268.1	1031.1	725.9	575.0	527.5
62.5°	1146.8	909.7	622.1	480.1	456.5
65°	1022.3	782.1	515.6	414.9	405.8
67.5°	903.8	663.6	414.9	364.3	355.5
70°	779.3	548.3	343.6	314.0	302.1
72.5°	660.8	441.3	287.3	263.7	257.8
75°	545.1	337.6	237.0	216.3	213.4
77.5°	429.8	239.9	186.7	174.8	168.8
80°	322.8	172.0	142.1	130.5	130.5
82.5°	225.1	115.7	97.8	91.8	91.8
85°	127.3	65.0	56.2	56.2	56.2
87.5°	47.5	23.6	23.6	20.8	20.8
90°	1.6	19.0	51.8	48.6	50.2
92.5°	32.8	44.4	46.0	47.6	47.6
95°	77.2	92.0	94.7	94.7	92.0
97.5°	128.5	142.2	148.1	148.1	148.1
100°	187.7	199.9	204.1	204.1	202.5
102.5°	250.1	259.0	264.9	266.5	264.9
105°	318.3	322.5	325.7	328.4	328.4
107.5°	386.0	392.3	392.3	393.4	386.0
110°	451.5	460.0	460.0	460.0	455.7

TEST NUMBER: P913713

CATALOG NUMBER: DFN2DIP-HX4F0-100D070US927-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	522.4	531.4	529.8	525.5	522.4
115°	592.2	600.6	598.0	596.4	592.2
117.5°	661.4	673.0	665.7	661.4	657.2
120°	731.2	742.8	731.2	731.2	726.4
122.5°	794.6	809.5	802.1	797.8	794.6
125°	861.3	874.5	870.3	865.5	864.0
127.5°	926.3	942.7	936.9	930.6	926.3
130°	987.1	1006.1	1003.5	1000.4	994.5
132.5°	1055.3	1070.2	1071.2	1063.8	1059.5
135°	1114.0	1130.4	1133.6	1131.9	1127.7
137.5°	1179.6	1192.8	1195.4	1194.4	1188.0
140°	1237.2	1250.5	1257.8	1257.8	1252.0
142.5°	1296.4	1309.6	1313.8	1315.4	1309.6
145°	1352.5	1363.0	1371.5	1373.1	1367.3
147.5°	1402.7	1415.9	1422.3	1424.9	1419.1
150°	1454.5	1463.5	1469.3	1474.1	1469.3
152.5°	1500.5	1509.5	1516.9	1522.7	1516.9
155°	1546.5	1550.7	1555.5	1562.9	1558.1
157.5°	1586.2	1589.4	1592.0	1602.6	1595.1
160°	1621.6	1624.8	1626.3	1635.3	1629.0
162.5°	1654.4	1654.4	1656.0	1666.0	1658.6
165°	1682.4	1680.8	1680.8	1691.4	1683.9
167.5°	1707.8	1703.0	1703.0	1713.6	1706.2
170°	1726.8	1722.6	1721.0	1731.5	1722.6
172.5°	1740.0	1735.7	1734.2	1744.8	1735.7
175°	1750.6	1746.4	1743.2	1753.7	1744.8
177.5°	1756.4	1752.1	1749.0	1758.0	1749.0
180°	1753.7	1753.7	1753.7	1753.7	1753.7

TEST NUMBER: P913713

CATALOG NUMBER: DFN2DIP-HX4F0-100D070US927-RLLFLL

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	10.94	11.84	11.84	12.75	13.91	6.92	7.82	7.81	8.72	9.88
	3H	12.63	13.43	13.53	14.35	15.53	8.11	8.92	9.02	9.83	11.02
	4H	13.24	14.00	14.16	14.92	16.11	8.57	9.33	9.49	10.25	11.44
	6H	13.67	14.37	14.60	15.29	16.50	8.89	9.59	9.83	10.52	11.73
	8H	13.80	14.46	14.73	15.41	16.61	8.99	9.65	9.93	10.60	11.80
	12H	13.86	14.49	14.80	15.43	16.66	9.03	9.67	9.98	10.61	11.83
4H	2H	10.97	11.73	11.90	12.65	13.85	7.52	8.28	8.45	9.20	10.40
	3H	12.81	13.44	13.74	14.39	15.60	8.88	9.51	9.82	10.46	11.67
	4H	13.50	14.08	14.45	15.03	16.26	9.43	10.01	10.38	10.96	12.19
	6H	14.02	14.52	14.98	15.49	16.72	9.86	10.35	10.82	11.32	12.56
	8H	14.20	14.66	15.16	15.63	16.87	9.99	10.45	10.95	11.42	12.66
	12H	14.30	14.72	15.28	15.70	16.95	10.06	10.47	11.04	11.46	12.71
8H	4H	13.48	13.94	14.44	14.90	16.15	9.72	10.18	10.68	11.15	12.39
	6H	14.05	14.43	15.03	15.44	16.68	10.24	10.62	11.23	11.63	12.87
	8H	14.26	14.60	15.26	15.60	16.86	10.43	10.77	11.43	11.77	13.03
	12H	14.41	14.70	15.40	15.69	17.00	10.56	10.85	11.56	11.84	13.15
12H	4H	13.43	13.85	14.41	14.83	16.08	9.73	10.14	10.71	11.13	12.38
	6H	14.02	14.36	15.02	15.36	16.62	10.29	10.63	11.29	11.62	12.89
	8H	14.25	14.54	15.25	15.53	16.84	10.51	10.80	11.50	11.79	13.10