

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: P913665

Luminaire Tested: DFN2DIP-HX4F0-070D100US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913665
REPORT IS A COMBINATION OF REPORTS P899414 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-070D100US927-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

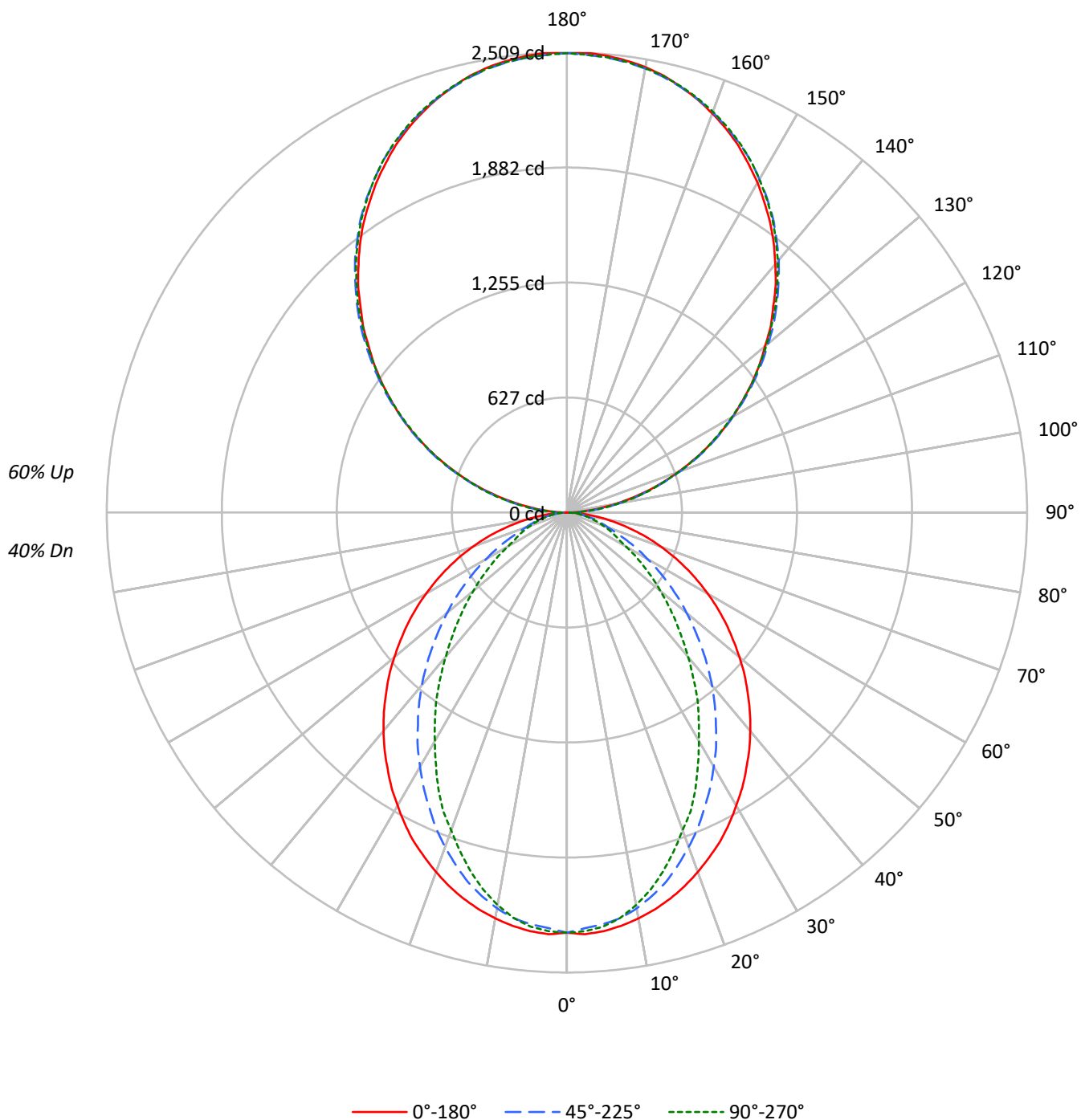
Lumens per Lamp: N/A
Luminaire Lumens: 11724.3 lumens
Efficiency: N/A
Efficacy: 94.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 124
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: P913665

CATALOG NUMBER: DFN2DIP-HX4F0-070D100US927-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P913665

CATALOG NUMBER: DFN2DIP-HX4F0-070D100US927-RLFL

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	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47
1	96	92	88	85	87	84	81	78	69	67	65	55	54	52	42	41	41
2	88	81	75	70	80	74	69	65	61	57	54	49	46	44	38	36	35
3	80	71	64	59	73	65	59	54	54	50	46	43	40	38	34	32	30
4	74	63	56	50	67	58	51	46	48	43	39	39	35	33	30	28	26
5	68	56	49	43	61	52	45	40	43	38	34	35	31	29	28	25	23
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	20
7	58	46	38	33	53	42	35	31	35	30	27	29	25	22	23	20	18
8	54	42	34	29	49	38	32	27	32	27	24	27	23	20	21	19	17
9	50	38	31	26	45	35	29	24	30	25	21	25	21	18	20	17	15
10	47	35	28	23	43	32	26	22	27	22	19	23	19	16	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1704	1704	1704
5°	1707	1677	1688
10°	1690	1645	1633
15°	1667	1590	1548
20°	1636	1516	1444
25°	1605	1432	1344
30°	1563	1346	1216
35°	1522	1253	1104
40°	1479	1158	975
45°	1431	1051	859
50°	1380	944	745
55°	1328	830	636
60°	1266	710	523
65°	1196	588	471
70°	1111	474	426
75°	1005	418	388
80°	850	352	337
85°	594	236	254

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1890 cd/sqm

TEST NUMBER: P913665

CATALOG NUMBER: DFN2DIP-HX4F0-070D100US927-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	1.8
10°-20°	589.7	5.0
20°-30°	827.9	7.1
30°-40°	902.4	7.7
40°-50°	829.4	7.1
50°-60°	651.4	5.6
60°-70°	424.0	3.6
70°-80°	218.2	1.9
80°-90°	62.8	0.5
90°-100°	155.0	1.3
100°-110°	492.6	4.2
110°-120°	843.0	7.2
120°-130°	1108.6	9.5
130°-140°	1244.4	10.6
140°-150°	1220.3	10.4
150°-160°	1023.6	8.7
160°-170°	678.9	5.8
170°-180°	237.3	2.0
0°-30°	1632.3	13.9
0°-40°	2534.7	21.6
0°-60°	4015.5	34.2
0°-90°	4720.6	40.3
90°-120°	1490.6	12.7
90°-150°	5063.9	43.2
90°-180°	7004.0	59.7
0°-180°	11724.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2282	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	2	27	74	70	72	12
95°	110	131	135	135	131	123
105°	455	461	465	469	469	480
115°	846	858	854	852	846	837
125°	1230	1249	1243	1236	1234	1100
135°	1591	1615	1619	1617	1611	1230
145°	1932	1947	1959	1962	1953	1207
155°	2209	2215	2222	2233	2226	1017
165°	2403	2401	2401	2416	2406	678
175°	2501	2495	2490	2505	2492	238
180°	2505	2505	2505	2505	2505	

TEST NUMBER: P913665

CATALOG NUMBER: DFN2DIP-HX4F0-070D100US927-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.9	2291.9	2291.9	2291.9	2291.9
2.5°	2302.2	2291.9	2269.0	2289.9	2285.7
5°	2291.9	2281.5	2254.5	2273.2	2267.0
7.5°	2273.2	2260.8	2231.8	2239.9	2229.6
10°	2248.3	2233.8	2192.4	2186.0	2173.7
12.5°	2217.2	2198.5	2142.5	2130.1	2107.2
15°	2179.8	2157.0	2086.5	2047.2	2026.5
17.5°	2136.3	2103.1	2015.9	1970.3	1937.1
20°	2086.5	2044.9	1941.3	1889.6	1843.8
22.5°	2032.7	1984.9	1864.5	1794.1	1763.1
25°	1978.7	1912.2	1775.4	1690.4	1659.2
27.5°	1914.5	1843.8	1692.4	1595.0	1547.2
30°	1846.0	1767.0	1601.1	1495.5	1439.4
32.5°	1779.6	1684.1	1514.2	1389.6	1337.7
35°	1704.9	1599.1	1416.7	1286.0	1240.2
37.5°	1632.4	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.9	1082.7	1028.7
42.5°	1476.8	1344.1	1134.6	981.0	929.3
45°	1393.8	1254.7	1037.1	889.7	839.9
47.5°	1315.0	1167.8	943.8	796.4	750.8
50°	1227.9	1080.7	852.5	709.2	665.9
52.5°	1142.7	987.1	765.3	628.4	589.1
55°	1059.8	898.0	674.0	549.7	510.3
57.5°	974.9	808.9	593.3	477.1	443.9
60°	887.7	721.8	508.1	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.6	547.5	360.9	290.5	284.1
67.5°	632.6	464.5	290.5	255.0	248.9
70°	545.5	383.7	240.5	219.8	211.4
72.5°	462.6	309.0	201.1	184.7	180.5
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.7	122.3	118.2
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.1	45.6	39.4	39.4	39.4
87.5°	33.2	16.5	16.5	14.5	14.5
90°	2.3	27.2	74.0	69.5	71.8
92.5°	46.8	63.5	65.8	68.0	68.0
95°	110.3	131.4	135.2	135.2	131.4
97.5°	183.5	203.2	211.5	211.5	211.5
100°	268.2	285.5	291.5	291.5	289.3
102.5°	357.3	370.1	378.4	380.6	378.4
105°	454.7	460.7	465.2	469.1	469.1
107.5°	551.4	560.5	560.5	562.0	551.4
110°	645.1	657.1	657.1	657.1	651.1

TEST NUMBER: P913665

CATALOG NUMBER: DFN2DIP-HX4F0-070D100US927-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	746.2	759.1	756.8	750.8	746.2
115°	846.0	858.0	854.3	852.0	846.0
117.5°	944.9	961.5	950.9	944.9	938.8
120°	1044.6	1061.2	1044.6	1044.6	1037.8
122.5°	1135.2	1156.3	1145.8	1139.8	1135.2
125°	1230.4	1249.3	1243.2	1236.4	1234.2
127.5°	1323.3	1346.7	1338.4	1329.4	1323.3
130°	1410.2	1437.3	1433.6	1429.0	1420.8
132.5°	1507.6	1528.8	1530.3	1519.7	1513.6
135°	1591.4	1614.9	1619.4	1617.2	1611.1
137.5°	1685.1	1704.0	1707.8	1706.3	1697.2
140°	1767.4	1786.3	1796.9	1796.9	1788.6
142.5°	1852.0	1870.9	1876.9	1879.2	1870.9
145°	1932.1	1947.2	1959.3	1961.5	1953.2
147.5°	2003.8	2022.8	2031.8	2035.6	2027.3
150°	2077.9	2090.7	2099.0	2105.8	2099.0
152.5°	2143.6	2156.4	2167.0	2175.3	2167.0
155°	2209.3	2215.3	2222.1	2232.7	2225.9
157.5°	2266.0	2270.5	2274.3	2289.3	2278.8
160°	2316.6	2321.1	2323.3	2336.1	2327.1
162.5°	2363.4	2363.4	2365.6	2379.9	2369.4
165°	2403.4	2401.1	2401.1	2416.2	2405.7
167.5°	2439.7	2432.9	2432.9	2448.0	2437.4
170°	2466.9	2460.8	2458.5	2473.7	2460.8
172.5°	2485.7	2479.7	2477.4	2492.5	2479.7
175°	2500.8	2494.8	2490.3	2505.4	2492.5
177.5°	2509.2	2503.1	2498.5	2511.4	2498.5
180°	2505.4	2505.4	2505.4	2505.4	2505.4

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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	8.02	8.77	9.06	9.82	11.22	3.99	4.75	5.03	5.79	7.20
	3H	9.69	10.36	10.74	11.42	12.84	5.17	5.85	6.23	6.90	8.33
	4H	10.29	10.93	11.36	11.99	13.42	5.62	6.26	6.69	7.32	8.75
	6H	10.71	11.30	11.79	12.36	13.81	5.94	6.53	7.01	7.59	9.03
	8H	10.84	11.40	11.92	12.47	13.91	6.03	6.59	7.11	7.67	9.10
	12H	10.90	11.43	11.98	12.50	13.96	6.07	6.60	7.15	7.67	9.13
4H	2H	8.03	8.67	9.10	9.72	11.15	4.58	5.22	5.65	6.27	7.70
	3H	9.85	10.38	10.93	11.46	12.91	5.92	6.45	7.00	7.54	8.98
	4H	10.54	11.03	11.62	12.10	13.57	6.47	6.96	7.55	8.03	9.50
	6H	11.05	11.47	12.14	12.57	14.03	6.88	7.30	7.98	8.40	9.86
	8H	11.23	11.62	12.32	12.70	14.18	7.01	7.40	8.10	8.49	9.97
	12H	11.32	11.67	12.43	12.77	14.25	7.08	7.43	8.18	8.53	10.01
8H	4H	10.50	10.89	11.59	11.98	13.46	6.74	7.13	7.83	8.22	9.70
	6H	11.07	11.39	12.18	12.52	13.99	7.26	7.58	8.37	8.71	10.19
	8H	11.28	11.57	12.40	12.68	14.17	7.45	7.74	8.57	8.85	10.34
	12H	11.42	11.67	12.54	12.78	14.31	7.57	7.82	8.69	8.93	10.46
12H	4H	10.45	10.80	11.56	11.91	13.39	6.74	7.10	7.85	8.20	9.68
	6H	11.04	11.32	12.16	12.44	13.93	7.31	7.59	8.43	8.71	10.20
	8H	11.26	11.51	12.38	12.62	14.15	7.52	7.77	8.64	8.88	10.41

END OF REPORT