

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: P913548

Luminaire Tested: DFN2DIP-HX3F0-070D090US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913548
REPORT IS A COMBINATION OF REPORTS P899293 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D090US927-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

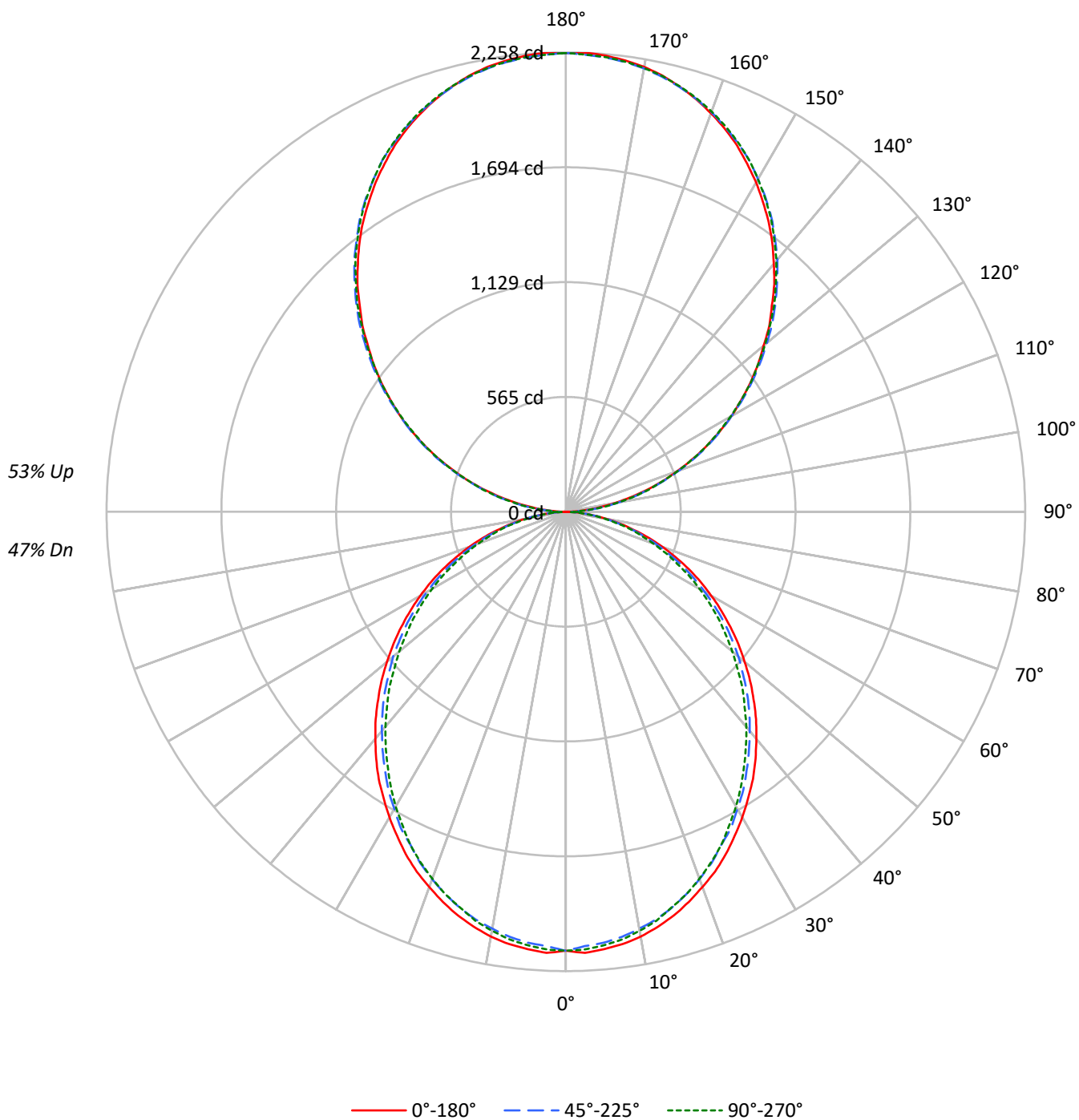
Lumens per Lamp: N/A
Luminaire Lumens: 11799.6 lumens
Efficiency: N/A
Efficacy: 84.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 140.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P913548

CATALOG NUMBER: DFN2DIP-HX3F0-070D090US927-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P913548

CATALOG NUMBER: DFN2DIP-HX3F0-070D090US927-FLLFL

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	106	106	106	106	98	98	98	98	81	81	81	67	67	67	53	53	53
1	97	93	89	85	89	85	82	79	71	69	67	59	57	55	47	46	45
2	88	81	75	70	81	75	69	65	63	59	55	51	49	46	41	39	38
3	81	71	64	58	74	66	59	54	55	50	47	45	42	39	37	34	32
4	74	63	55	49	67	58	51	46	49	44	40	41	37	34	33	30	28
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24
6	62	50	42	36	57	47	39	34	39	34	30	33	29	25	27	24	21
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	24	21	19
8	53	41	33	28	49	38	31	27	33	27	23	27	23	20	22	19	17
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15
10	46	34	27	22	43	32	26	21	28	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2499	2499	2499
5°	2502	2463	2480
10°	2481	2428	2445
15°	2443	2386	2391
20°	2393	2329	2336
25°	2343	2261	2273
30°	2280	2197	2192
35°	2220	2123	2107
40°	2148	2047	2026
45°	2075	1971	1944
50°	1995	1892	1848
55°	1911	1800	1759
60°	1817	1691	1658
65°	1714	1577	1539
70°	1582	1439	1410
75°	1400	1273	1289
80°	1180	1062	1061
85°	837	703	688

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2123 cd/sqm

TEST NUMBER: P913548

CATALOG NUMBER: DFN2DIP-HX3F0-070D090US927-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.1	1.7
10°-20°	571.4	4.8
20°-30°	839.7	7.1
30°-40°	975.3	8.3
40°-50°	974.1	8.3
50°-60°	849.4	7.2
60°-70°	627.9	5.3
70°-80°	355.2	3.0
80°-90°	100.2	0.8
90°-100°	139.5	1.2
100°-110°	443.3	3.8
110°-120°	758.7	6.4
120°-130°	997.8	8.5
130°-140°	1120.0	9.5
140°-150°	1098.2	9.3
150°-160°	921.3	7.8
160°-170°	611.0	5.2
170°-180°	213.5	1.8
0°-30°	1614.2	13.7
0°-40°	2589.5	21.9
0°-60°	4412.9	37.4
0°-90°	5496.2	46.6
90°-120°	1341.5	11.4
90°-150°	4557.5	38.6
90°-180°	6303.0	53.4
0°-180°	11799.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2158	2158	2158	2158	2158	
5°	2158	2150	2127	2143	2139	205
15°	2054	2042	2015	2023	2013	578
25°	1859	1842	1807	1811	1807	855
35°	1604	1583	1550	1537	1527	1002
45°	1305	1291	1259	1237	1228	1007
55°	988	975	950	925	915	883
65°	666	654	633	614	604	659
75°	348	344	334	322	326	372
85°	85	83	81	75	73	95
90°	2	24	67	62	65	11
95°	99	118	122	122	118	110
105°	409	415	419	422	422	432
115°	761	772	769	767	761	753
125°	1107	1124	1119	1113	1111	990
135°	1432	1453	1458	1455	1450	1107
145°	1739	1752	1763	1765	1758	1086
155°	1988	1994	2000	2009	2003	915
165°	2163	2161	2161	2175	2165	610
175°	2251	2245	2241	2255	2243	214
180°	2255	2255	2255	2255	2255	

TEST NUMBER: P913548

CATALOG NUMBER: DFN2DIP-HX3F0-070D090US927-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2157.7	2157.7	2157.7	2157.7	2157.7
2.5°	2170.3	2159.9	2137.0	2157.7	2153.7
5°	2157.7	2149.6	2126.7	2143.2	2139.2
7.5°	2143.2	2130.8	2107.9	2124.7	2120.5
10°	2120.5	2105.9	2081.1	2097.6	2091.4
12.5°	2089.2	2076.9	2052.1	2062.4	2058.2
15°	2054.0	2041.7	2014.6	2023.0	2012.6
17.5°	2010.4	1998.1	1971.0	1981.4	1971.0
20°	1962.6	1950.4	1921.3	1927.5	1919.3
22.5°	1915.1	1896.4	1869.3	1869.3	1865.1
25°	1859.0	1842.5	1807.3	1811.2	1807.3
27.5°	1796.7	1782.2	1755.3	1749.1	1738.8
30°	1734.6	1717.8	1686.9	1680.7	1672.3
32.5°	1668.1	1655.8	1622.5	1610.0	1601.6
35°	1603.8	1583.2	1549.9	1537.4	1527.0
37.5°	1531.2	1512.5	1479.2	1464.7	1454.4
40°	1456.6	1439.9	1406.6	1388.1	1379.7
42.5°	1383.9	1367.2	1334.2	1313.3	1300.9
45°	1305.1	1290.6	1259.3	1236.7	1228.3
47.5°	1228.3	1213.8	1180.5	1157.6	1145.3
50°	1147.3	1136.9	1107.9	1078.9	1068.5
52.5°	1068.5	1054.0	1027.1	1004.2	989.7
55°	987.7	975.2	950.3	925.4	915.0
57.5°	906.7	896.4	869.3	844.4	836.1
60°	825.7	817.5	788.5	765.6	759.5
62.5°	746.9	732.4	711.7	691.0	682.6
65°	666.1	653.5	632.9	614.2	603.8
67.5°	583.1	572.6	554.1	539.6	531.2
70°	506.3	498.0	479.2	464.7	456.5
72.5°	427.5	419.1	408.8	394.3	388.1
75°	348.5	344.5	333.9	321.6	325.8
77.5°	278.1	269.7	265.5	259.3	253.2
80°	207.6	205.4	201.2	195.0	190.8
82.5°	141.1	141.1	139.1	130.8	130.8
85°	85.0	83.0	81.0	74.6	72.6
87.5°	37.4	33.3	29.1	22.9	20.7
90°	2.1	24.5	66.6	62.5	64.6
92.5°	42.1	57.1	59.2	61.2	61.2
95°	99.3	118.3	121.7	121.7	118.3
97.5°	165.2	182.8	190.4	190.4	190.4
100°	241.3	257.0	262.4	262.4	260.4
102.5°	321.5	333.1	340.6	342.6	340.6
105°	409.2	414.6	418.7	422.2	422.2
107.5°	496.2	504.4	504.4	505.7	496.2
110°	580.5	591.4	591.4	591.4	586.0

TEST NUMBER: P913548

CATALOG NUMBER: DFN2DIP-HX3F0-070D090US927-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	671.6	683.2	681.1	675.7	671.6
115°	761.4	772.2	768.8	766.8	761.4
117.5°	850.4	865.4	855.9	850.4	844.9
120°	940.2	955.1	940.2	940.2	934.0
122.5°	1021.7	1040.8	1031.3	1025.8	1021.7
125°	1107.4	1124.3	1119.0	1112.8	1110.8
127.5°	1191.0	1212.0	1204.6	1196.4	1191.0
130°	1269.2	1293.6	1290.2	1286.1	1278.7
132.5°	1356.8	1375.9	1377.2	1367.7	1362.3
135°	1432.3	1453.3	1457.5	1455.4	1450.0
137.5°	1516.6	1533.6	1537.0	1535.6	1527.5
140°	1590.7	1607.7	1617.2	1617.2	1609.7
142.5°	1666.8	1683.8	1689.2	1691.3	1683.8
145°	1738.9	1752.5	1763.3	1765.4	1757.9
147.5°	1803.5	1820.4	1828.6	1832.0	1824.6
150°	1870.1	1881.7	1889.1	1895.2	1889.1
152.5°	1929.2	1940.8	1950.3	1957.8	1950.3
155°	1988.4	1993.8	1999.9	2009.4	2003.3
157.5°	2039.3	2043.4	2046.8	2060.4	2050.9
160°	2084.9	2089.0	2091.0	2102.5	2094.4
162.5°	2127.0	2127.0	2129.1	2142.0	2132.5
165°	2163.1	2161.0	2161.0	2174.6	2165.1
167.5°	2195.7	2189.6	2189.6	2203.1	2193.6
170°	2220.2	2214.7	2212.7	2226.3	2214.7
172.5°	2237.1	2231.7	2229.7	2243.3	2231.7
175°	2250.7	2245.3	2241.2	2254.9	2243.3
177.5°	2258.2	2252.8	2248.7	2260.3	2248.7
180°	2254.9	2254.9	2254.9	2254.9	2254.9

TEST NUMBER: P913548

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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	10.08	10.92	11.07	11.91	13.23	9.66	10.49	10.64	11.49	12.80
	3H	11.74	12.48	12.73	13.49	14.83	11.27	12.01	12.26	13.02	14.36
	4H	12.32	13.02	13.33	14.03	15.38	11.85	12.55	12.86	13.56	14.91
	6H	12.71	13.36	13.73	14.37	15.74	12.24	12.89	13.26	13.90	15.26
	8H	12.81	13.43	13.83	14.46	15.82	12.34	12.96	13.37	13.99	15.35
	12H	12.85	13.44	13.88	14.47	15.85	12.38	12.97	13.41	13.99	15.37
4H	2H	10.54	11.25	11.56	12.26	13.60	10.20	10.90	11.21	11.91	13.26
	3H	12.39	12.98	13.42	14.02	15.38	12.00	12.59	13.03	13.63	14.99
	4H	13.10	13.64	14.13	14.67	16.06	12.70	13.24	13.73	14.27	15.65
	6H	13.61	14.07	14.65	15.13	16.51	13.20	13.67	14.24	14.72	16.10
	8H	13.75	14.19	14.80	15.23	16.63	13.34	13.78	14.39	14.83	16.22
	12H	13.82	14.21	14.88	15.27	16.68	13.40	13.80	14.47	14.86	16.26
8H	4H	13.29	13.73	14.34	14.77	16.17	12.93	13.37	13.98	14.42	15.81
	6H	13.91	14.27	14.98	15.36	16.75	13.55	13.91	14.62	15.00	16.39
	8H	14.13	14.44	15.20	15.52	16.93	13.76	14.08	14.84	15.15	16.56
	12H	14.25	14.53	15.33	15.60	17.05	13.87	14.15	14.95	15.22	16.67
12H	4H	13.28	13.67	14.34	14.73	16.13	12.93	13.32	13.99	14.38	15.78
	6H	13.94	14.26	15.02	15.33	16.74	13.59	13.91	14.67	14.98	16.39
	8H	14.18	14.45	15.25	15.52	16.98	13.82	14.10	14.90	15.17	16.62