

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: P910772

Luminaire Tested: DFN2DIP-HX3F0-050D090US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910772
REPORT IS A COMBINATION OF REPORTS P899289 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D090US850-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

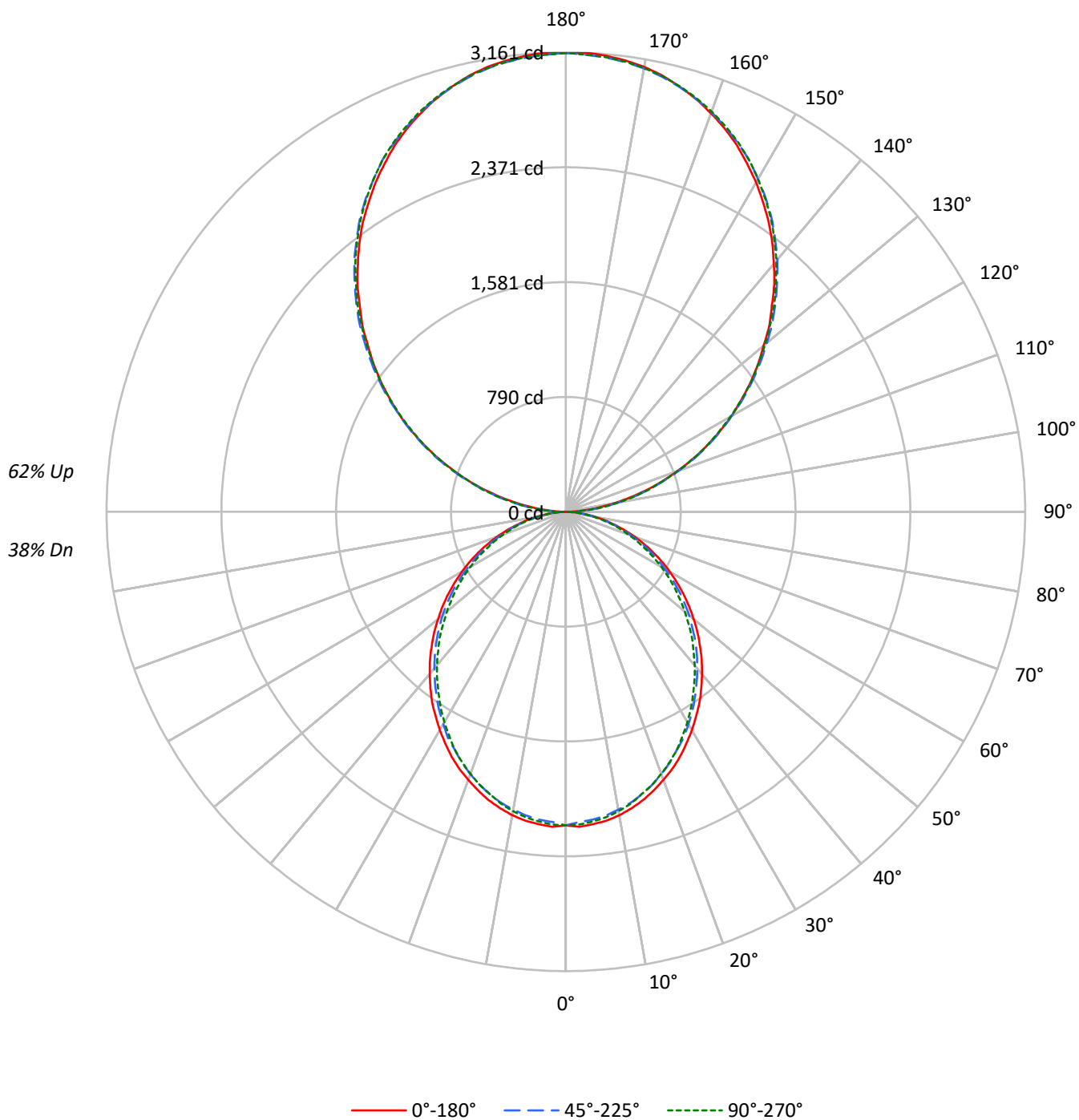
Lumens per Lamp: N/A
Luminaire Lumens: 14322.8 lumens
Efficiency: N/A
Efficacy: 123.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 115.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P910772

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US850-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P910772

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US850-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	104	104	104	104	95	95	95	95	77	77	77	61	61	61	45	45	45
1	95	91	87	84	86	83	79	77	67	65	63	53	52	50	40	39	38
2	87	79	73	68	78	72	67	63	59	55	52	47	44	42	35	34	32
3	79	70	63	57	71	64	57	52	52	47	44	41	38	35	31	29	27
4	72	62	54	48	65	56	50	44	46	41	37	37	33	30	28	26	24
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	23	21
6	61	49	41	35	55	45	38	33	37	32	28	30	26	23	23	20	18
7	56	44	36	31	51	41	34	29	34	28	25	27	23	20	21	18	16
8	52	40	33	27	47	37	30	25	31	25	22	25	21	18	19	16	14
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13
10	45	33	26	22	41	31	24	20	26	21	17	21	17	15	16	14	12

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	2272
30°	2280	2197	2192
35°	2220	2122	2107
40°	2148	2047	2026
45°	2075	1971	1943
50°	1995	1892	1848
55°	1911	1799	1759
60°	1817	1691	1658
65°	1714	1577	1538
70°	1582	1439	1410
75°	1400	1273	1289
80°	1180	1062	1061
85°	836	703	688

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2970 cd/sqm

TEST NUMBER: P910772

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US850-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.1	1.4
10°-20°	571.4	4.0
20°-30°	839.7	5.9
30°-40°	975.2	6.8
40°-50°	974.0	6.8
50°-60°	849.3	5.9
60°-70°	627.9	4.4
70°-80°	355.2	2.5
80°-90°	102.7	0.7
90°-100°	195.3	1.4
100°-110°	620.6	4.3
110°-120°	1062.1	7.4
120°-130°	1396.8	9.8
130°-140°	1567.9	10.9
140°-150°	1537.5	10.7
150°-160°	1289.7	9.0
160°-170°	855.3	6.0
170°-180°	299.0	2.1
0°-30°	1614.1	11.3
0°-40°	2589.4	18.1
0°-60°	4412.7	30.8
0°-90°	5498.5	38.4
90°-120°	1878.1	13.1
90°-150°	6380.2	44.5
90°-180°	8824.0	61.6
0°-180°	14322.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2158	2158	2158	2158	2158	
5°	2158	2150	2126	2143	2139	205
15°	2054	2042	2014	2023	2012	578
25°	1859	1842	1807	1811	1807	855
35°	1604	1583	1550	1537	1527	1001
45°	1305	1290	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°	3	34	93	88	90	14
95°	139	166	170	170	166	155
105°	573	580	586	591	591	605
115°	1066	1081	1076	1074	1066	1054
125°	1550	1574	1566	1558	1555	1385
135°	2005	2035	2040	2038	2030	1550
145°	2434	2453	2468	2471	2461	1521
155°	2784	2791	2800	2813	2805	1281
165°	3028	3025	3025	3044	3031	854
175°	3151	3143	3138	3157	3140	299
180°	3157	3157	3157	3157	3157	

TEST NUMBER: P910772

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US850-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2157.6	2157.6	2157.6	2157.6	2157.6
2.5°	2170.1	2159.8	2136.9	2157.6	2153.7
5°	2157.6	2149.5	2126.5	2143.0	2139.2
7.5°	2143.0	2130.7	2107.9	2124.6	2120.4
10°	2120.4	2105.9	2081.0	2097.5	2091.4
12.5°	2089.1	2076.8	2052.0	2062.3	2058.1
15°	2053.9	2041.6	2014.5	2022.9	2012.5
17.5°	2010.3	1998.0	1970.9	1981.2	1970.9
20°	1962.6	1950.3	1921.2	1927.3	1919.2
22.5°	1915.0	1896.3	1869.2	1869.2	1865.0
25°	1858.9	1842.4	1807.1	1811.1	1807.1
27.5°	1796.6	1782.1	1755.2	1749.0	1738.7
30°	1734.5	1717.8	1686.8	1680.6	1672.3
32.5°	1668.0	1655.7	1622.5	1609.9	1601.6
35°	1603.7	1583.1	1549.8	1537.3	1527.0
37.5°	1531.1	1512.5	1479.2	1464.7	1454.3
40°	1456.6	1439.8	1406.5	1388.0	1379.7
42.5°	1383.9	1367.2	1334.1	1313.2	1300.9
45°	1305.1	1290.5	1259.3	1236.6	1228.2
47.5°	1228.2	1213.7	1180.5	1157.6	1145.3
50°	1147.3	1136.9	1107.9	1078.8	1068.4
52.5°	1068.4	1053.9	1027.0	1004.2	989.7
55°	987.7	975.1	950.2	925.3	915.0
57.5°	906.6	896.3	869.2	844.4	836.0
60°	825.7	817.6	788.5	765.5	759.4
62.5°	746.9	732.4	711.6	690.9	682.6
65°	666.1	653.5	632.8	614.2	603.7
67.5°	583.1	572.6	554.1	539.5	531.1
70°	506.3	497.9	479.2	464.7	456.6
72.5°	427.5	419.1	408.8	394.2	388.0
75°	348.4	344.5	333.9	321.6	325.8
77.5°	278.0	269.6	265.5	259.3	253.2
80°	207.6	205.4	201.2	195.1	190.9
82.5°	141.1	141.1	139.1	130.8	130.8
85°	84.9	83.0	81.0	74.6	72.6
87.5°	37.4	33.3	29.1	22.8	20.7
90°	2.9	34.3	93.3	87.5	90.4
92.5°	59.0	80.0	82.8	85.6	85.6
95°	139.0	165.6	170.3	170.3	165.6
97.5°	231.2	256.0	266.5	266.5	266.5
100°	337.8	359.8	367.3	367.3	364.5
102.5°	450.1	466.3	476.8	479.6	476.8
105°	572.9	580.5	586.2	591.0	591.0
107.5°	694.7	706.1	706.1	708.0	694.7
110°	812.7	828.0	828.0	828.0	820.3



TEST NUMBER: P910772

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US850-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	940.2	956.4	953.5	946.0	940.2
115°	1065.9	1081.1	1076.3	1073.5	1065.9
117.5°	1190.5	1211.5	1198.2	1190.5	1182.9
120°	1316.2	1337.0	1316.2	1316.2	1307.5
122.5°	1430.3	1457.0	1443.7	1436.0	1430.3
125°	1550.3	1574.0	1566.5	1557.8	1555.0
127.5°	1667.3	1696.8	1686.3	1674.9	1667.3
130°	1776.7	1811.0	1806.2	1800.5	1790.0
132.5°	1899.5	1926.1	1928.0	1914.7	1907.1
135°	2005.1	2034.6	2040.3	2037.5	2029.9
137.5°	2123.1	2146.9	2151.7	2149.8	2138.4
140°	2226.9	2250.6	2263.9	2263.9	2253.5
142.5°	2333.4	2357.2	2364.8	2367.7	2357.2
145°	2434.4	2453.3	2468.5	2471.4	2461.0
147.5°	2524.7	2548.5	2559.9	2564.7	2554.2
150°	2618.0	2634.2	2644.6	2653.2	2644.6
152.5°	2700.7	2716.9	2730.2	2740.8	2730.2
155°	2783.6	2791.1	2799.8	2813.1	2804.6
157.5°	2854.9	2860.7	2865.4	2884.4	2871.1
160°	2918.7	2924.4	2927.3	2943.4	2932.0
162.5°	2977.7	2977.7	2980.5	2998.6	2985.3
165°	3028.1	3025.2	3025.2	3044.3	3031.0
167.5°	3073.8	3065.3	3065.3	3084.2	3070.9
170°	3108.1	3100.4	3097.7	3116.6	3100.4
172.5°	3131.8	3124.3	3121.4	3140.5	3124.3
175°	3150.9	3143.2	3137.6	3156.7	3140.5
177.5°	3161.3	3153.8	3148.0	3164.2	3148.0
180°	3156.7	3156.7	3156.7	3156.7	3156.7

TEST NUMBER: P910772

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US850-FLLFLL

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	9.23	10.00	10.28	11.05	12.48	8.80	9.57	9.85	10.62	12.05
	3H	10.88	11.56	11.94	12.63	14.07	10.41	11.09	11.47	12.16	13.60
	4H	11.45	12.10	12.52	13.17	14.62	10.98	11.64	12.06	12.70	14.15
	6H	11.84	12.44	12.92	13.51	14.98	11.37	11.97	12.45	13.04	14.51
	8H	11.94	12.51	13.03	13.60	15.06	11.47	12.04	12.56	13.13	14.59
	12H	11.98	12.52	13.07	13.60	15.09	11.51	12.05	12.60	13.13	14.61
4H	2H	9.68	10.33	10.76	11.39	12.85	9.33	9.98	10.41	11.05	12.50
	3H	11.52	12.07	12.61	13.16	14.63	11.14	11.68	12.22	12.77	14.24
	4H	12.23	12.73	13.32	13.81	15.30	11.83	12.33	12.92	13.41	14.90
	6H	12.73	13.16	13.83	14.27	15.75	12.33	12.75	13.43	13.86	15.34
	8H	12.87	13.27	13.97	14.37	15.87	12.47	12.87	13.57	13.97	15.46
	12H	12.94	13.30	14.06	14.41	15.91	12.52	12.89	13.64	14.00	15.50
8H	4H	12.41	12.81	13.51	13.91	15.41	12.06	12.46	13.16	13.56	15.05
	6H	13.03	13.36	14.15	14.50	16.00	12.67	13.00	13.80	14.15	15.64
	8H	13.25	13.54	14.38	14.66	16.17	12.88	13.17	14.01	14.29	15.81
	12H	13.37	13.62	14.50	14.74	16.29	12.99	13.24	14.12	14.36	15.91
12H	4H	12.39	12.76	13.51	13.87	15.37	12.05	12.41	13.16	13.52	15.02
	6H	13.06	13.35	14.19	14.47	15.99	12.71	13.00	13.84	14.12	15.64
	8H	13.29	13.55	14.42	14.66	16.22	12.94	13.19	14.07	14.31	15.86