

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: P927033

Luminaire Tested: DFN2DIP-HX4F0-080D080US830-RLLFLL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927033
REPORT IS A COMBINATION OF REPORTS P899380 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-080D080US830-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

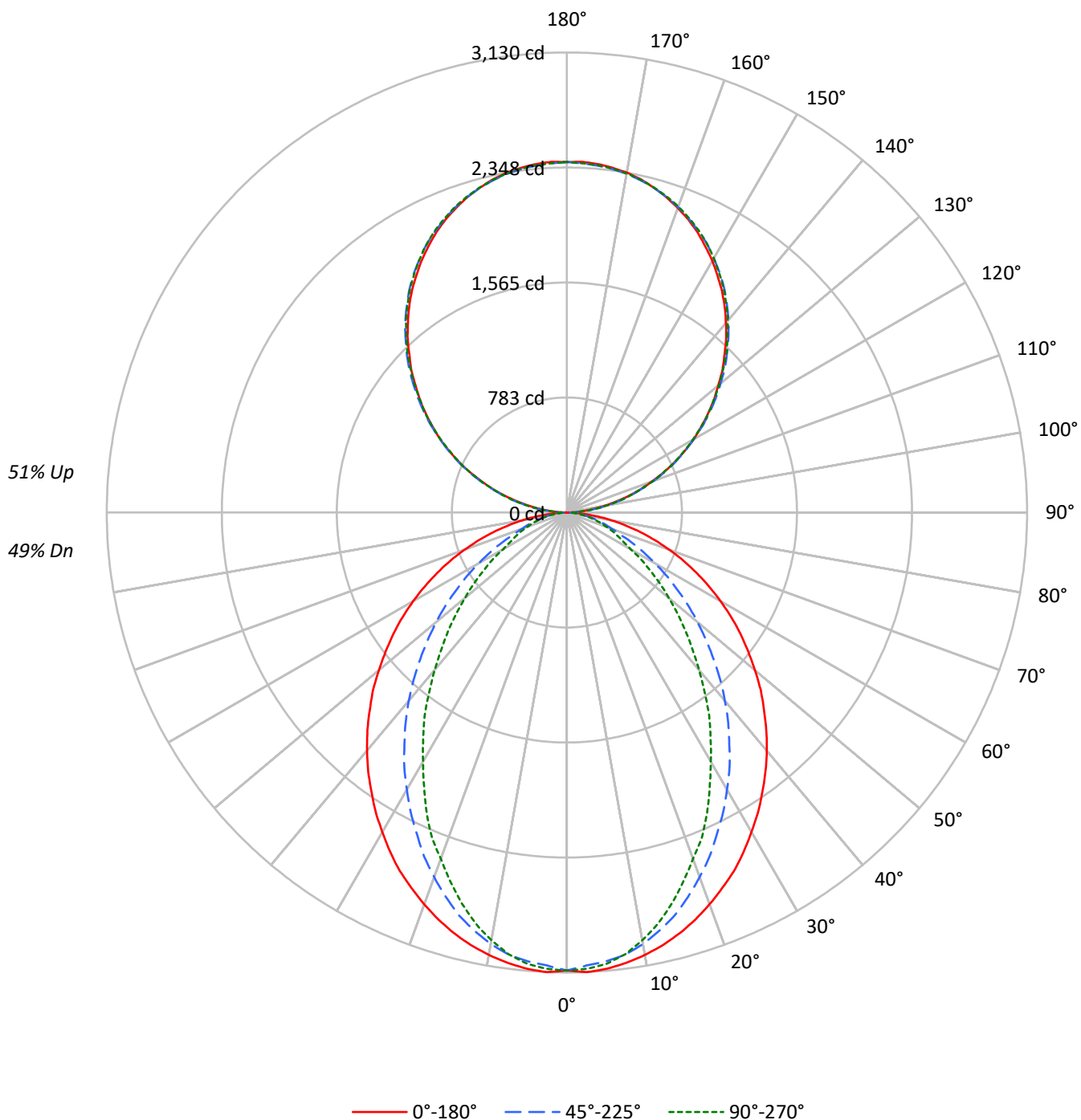
Lumens per Lamp: N/A
Luminaire Lumens: 13081.9 lumens
Efficiency: N/A
Efficacy: 96.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 135
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P927033

CATALOG NUMBER: DFN2DIP-HX4F0-080D080US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P927033

CATALOG NUMBER: DFN2DIP-HX4F0-080D080US830-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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2317	2317	2317
5°	2321	2281	2295
10°	2298	2236	2221
15°	2267	2162	2105
20°	2225	2061	1964
25°	2182	1947	1827
30°	2125	1830	1653
35°	2069	1704	1501
40°	2012	1574	1326
45°	1945	1430	1168
50°	1877	1284	1013
55°	1805	1128	865
60°	1722	965	712
65°	1627	799	641
70°	1511	645	580
75°	1366	569	528
80°	1156	478	458
85°	808	320	345

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1945 cd/sqm

TEST NUMBER: P927033

CATALOG NUMBER: DFN2DIP-HX4F0-080D080US830-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	292.1	2.2
10°-20°	801.8	6.1
20°-30°	1125.7	8.6
30°-40°	1227.0	9.4
40°-50°	1127.8	8.6
50°-60°	885.7	6.8
60°-70°	576.5	4.4
70°-80°	296.8	2.3
80°-90°	82.5	0.6
90°-100°	147.6	1.1
100°-110°	468.9	3.6
110°-120°	802.3	6.1
120°-130°	1055.2	8.1
130°-140°	1184.4	9.1
140°-150°	1161.5	8.9
150°-160°	974.3	7.4
160°-170°	646.1	4.9
170°-180°	225.8	1.7
0°-30°	2219.5	17.0
0°-40°	3446.5	26.3
0°-60°	5460.0	41.7
0°-90°	6415.8	49.0
90°-120°	1418.8	10.8
90°-150°	4819.9	36.8
90°-180°	6666.0	51.0
0°-180°	13081.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3116	3116	3116	3116	3116	
5°	3116	3102	3065	3091	3082	295
15°	2964	2933	2837	2784	2755	835
25°	2690	2600	2414	2299	2256	1237
35°	2318	2174	1926	1749	1686	1451
45°	1895	1706	1410	1210	1142	1464
55°	1441	1221	916	747	694	1288
65°	973	744	491	395	386	965
75°	519	321	226	206	203	549
85°	121	62	54	54	54	139
90°	2	26	70	66	68	13
95°	105	125	129	129	125	117
105°	433	438	443	446	446	457
115°	805	817	813	811	805	796
125°	1171	1189	1183	1177	1175	1047
135°	1515	1537	1541	1539	1533	1171
145°	1839	1853	1865	1867	1859	1149
155°	2103	2109	2115	2125	2119	968
165°	2288	2285	2285	2300	2290	645
175°	2380	2374	2370	2385	2372	226
180°	2385	2385	2385	2385	2385	

TEST NUMBER: P927033

CATALOG NUMBER: DFN2DIP-HX4F0-080D080US830-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3116.3	3116.3	3116.3	3116.3	3116.3
2.5°	3130.3	3116.3	3085.2	3113.5	3107.9
5°	3116.3	3102.2	3065.4	3090.8	3082.4
7.5°	3090.8	3074.1	3034.6	3045.7	3031.6
10°	3057.0	3037.3	2981.0	2972.4	2955.6
12.5°	3014.9	2989.4	2913.1	2896.3	2865.2
15°	2964.0	2932.9	2837.1	2783.6	2755.4
17.5°	2904.7	2859.5	2741.1	2679.2	2633.9
20°	2837.1	2780.6	2639.7	2569.3	2507.0
22.5°	2763.8	2698.8	2535.2	2439.5	2397.2
25°	2690.5	2600.2	2414.0	2298.6	2256.1
27.5°	2603.1	2507.0	2301.2	2168.7	2103.8
30°	2510.1	2402.6	2177.1	2033.4	1957.1
32.5°	2419.7	2289.9	2058.9	1889.5	1818.9
35°	2318.3	2174.3	1926.3	1748.6	1686.3
37.5°	2219.5	2064.3	1802.2	1607.3	1537.0
40°	2115.2	1946.1	1672.3	1472.1	1398.8
42.5°	2008.0	1827.6	1542.7	1333.9	1263.5
45°	1895.2	1706.1	1410.2	1209.7	1142.1
47.5°	1788.1	1587.9	1283.3	1082.8	1020.9
50°	1669.5	1469.5	1159.2	964.4	905.4
52.5°	1553.8	1342.2	1040.6	854.6	801.0
55°	1441.0	1221.1	916.5	747.4	693.9
57.5°	1325.5	1099.9	806.7	648.7	603.5
60°	1207.0	981.4	690.9	547.2	502.1
62.5°	1091.5	865.9	592.2	456.9	434.5
65°	973.0	744.4	490.7	395.0	386.2
67.5°	860.2	631.7	395.0	346.7	338.5
70°	741.7	521.9	327.0	298.9	287.6
72.5°	628.9	420.1	273.5	251.1	245.3
75°	518.8	321.4	225.6	205.8	203.2
77.5°	409.0	228.3	177.8	166.4	160.7
80°	307.3	163.7	135.2	124.1	124.1
82.5°	214.2	110.1	93.0	87.4	87.4
85°	121.2	61.9	53.5	53.5	53.5
87.5°	45.1	22.4	22.4	19.8	19.8
90°	2.2	25.9	70.5	66.2	68.3
92.5°	44.6	60.4	62.6	64.7	64.7
95°	105.0	125.1	128.7	128.7	125.1
97.5°	174.7	193.4	201.3	201.3	201.3
100°	255.2	271.7	277.5	277.5	275.3
102.5°	340.1	352.3	360.1	362.3	360.1
105°	432.8	438.5	442.9	446.5	446.5
107.5°	524.8	533.5	533.5	534.9	524.8
110°	613.9	625.4	625.4	625.4	619.7

TEST NUMBER: P927033

CATALOG NUMBER: DFN2DIP-HX4F0-080D080US830-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	710.3	722.5	720.4	714.6	710.3
115°	805.2	816.7	813.1	810.9	805.2
117.5°	899.3	915.2	905.1	899.3	893.6
120°	994.2	1010.1	994.2	994.2	987.7
122.5°	1080.5	1100.7	1090.6	1084.8	1080.5
125°	1171.1	1189.1	1183.3	1176.8	1174.7
127.5°	1259.6	1281.8	1273.9	1265.3	1259.6
130°	1342.2	1368.0	1364.5	1360.2	1352.3
132.5°	1435.0	1455.0	1456.5	1446.5	1440.7
135°	1514.7	1537.0	1541.4	1539.2	1533.4
137.5°	1603.9	1621.9	1625.4	1624.0	1615.4
140°	1682.3	1700.2	1710.3	1710.3	1702.3
142.5°	1762.8	1780.8	1786.5	1788.7	1780.8
145°	1839.0	1853.3	1864.8	1867.0	1859.1
147.5°	1907.2	1925.2	1933.8	1937.5	1929.6
150°	1977.7	1989.9	1997.8	2004.3	1997.8
152.5°	2040.2	2052.5	2062.6	2070.5	2062.6
155°	2102.8	2108.6	2115.1	2125.1	2118.6
157.5°	2156.7	2161.1	2164.6	2179.0	2169.0
160°	2204.9	2209.2	2211.4	2223.5	2215.0
162.5°	2249.5	2249.5	2251.6	2265.3	2255.2
165°	2287.5	2285.4	2285.4	2299.8	2289.7
167.5°	2322.0	2315.6	2315.6	2330.0	2319.9
170°	2348.0	2342.2	2340.0	2354.5	2342.2
172.5°	2366.0	2360.2	2358.0	2372.4	2360.2
175°	2380.3	2374.5	2370.2	2384.6	2372.4
177.5°	2388.2	2382.5	2378.1	2390.4	2378.1
180°	2384.6	2384.6	2384.6	2384.6	2384.6

TEST NUMBER: P927033

CATALOG NUMBER: DFN2DIP-HX4F0-080D080US830-RLFL

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	9.98	10.80	10.95	11.78	13.07	5.95	6.77	6.92	7.75	9.04
	3H	11.65	12.39	12.64	13.38	14.69	7.14	7.87	8.12	8.86	10.17
	4H	12.26	12.96	13.26	13.95	15.27	7.59	8.29	8.59	9.28	10.60
	6H	12.68	13.32	13.69	14.32	15.65	7.91	8.55	8.92	9.55	10.88
	8H	12.81	13.42	13.82	14.44	15.76	8.00	8.61	9.02	9.63	10.95
	12H	12.87	13.45	13.89	14.46	15.81	8.05	8.63	9.07	9.64	10.99
4H	2H	9.99	10.69	11.00	11.68	13.00	6.54	7.24	7.55	8.23	9.55
	3H	11.82	12.40	12.83	13.42	14.76	7.90	8.47	8.91	9.50	10.83
	4H	12.52	13.04	13.53	14.06	15.41	8.44	8.97	9.46	9.99	11.34
	6H	13.03	13.49	14.06	14.52	15.88	8.86	9.32	9.89	10.36	11.71
	8H	13.21	13.63	14.24	14.66	16.03	8.99	9.42	10.03	10.45	11.82
	12H	13.30	13.68	14.35	14.73	16.10	9.06	9.44	10.11	10.49	11.86
8H	4H	12.48	12.91	13.51	13.94	15.30	8.72	9.15	9.76	10.18	11.55
	6H	13.05	13.40	14.10	14.47	15.84	9.24	9.59	10.30	10.67	12.03
	8H	13.27	13.58	14.33	14.63	16.02	9.44	9.74	10.50	10.80	12.19
	12H	13.41	13.68	14.47	14.73	16.16	9.56	9.83	10.62	10.88	12.31
12H	4H	12.43	12.82	13.48	13.86	15.24	8.73	9.11	9.78	10.16	11.53
	6H	13.03	13.33	14.09	14.39	15.78	9.29	9.60	10.36	10.66	12.04
	8H	13.25	13.52	14.31	14.57	16.00	9.51	9.78	10.57	10.83	12.26

END OF REPORT