

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: P907942

Luminaire Tested: DFN2DIP-HX2F0-050D040US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907942
REPORT IS A COMBINATION OF REPORTS P899177 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-050D040US840-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

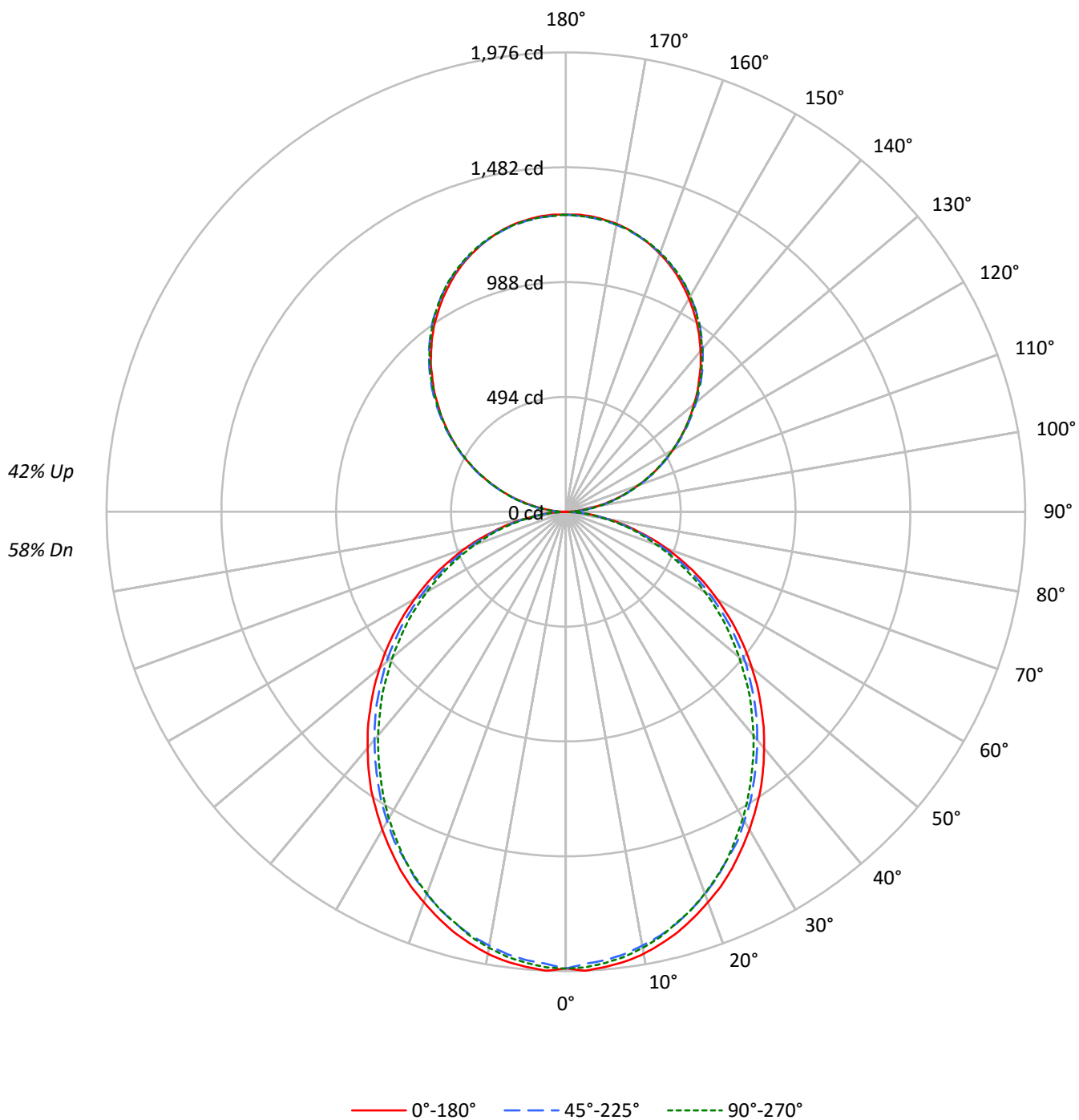
Lumens per Lamp: N/A
Luminaire Lumens: 8573.8 lumens
Efficiency: N/A
Efficacy: 111.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 76.9
Input Voltage (V): 120
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: P907942

CATALOG NUMBER: DFN2DIP-HX2F0-050D040US840-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P907942

CATALOG NUMBER: DFN2DIP-HX2F0-050D040US840-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	109	109	109	109	102	102	102	102	88	88	88	75	75	75	64	64	64
1	100	95	91	88	93	89	86	82	77	75	72	66	65	63	56	55	54
2	91	83	77	72	84	78	72	68	68	64	60	58	55	52	50	47	45
3	83	73	66	60	77	69	62	57	60	55	50	52	48	44	44	41	39
4	76	65	57	51	70	61	54	48	53	47	43	46	42	38	39	36	33
5	70	58	50	43	65	54	47	41	48	42	37	41	37	33	35	32	29
6	64	52	44	38	60	49	41	36	43	37	32	37	33	29	32	29	26
7	59	47	39	33	55	44	37	32	39	33	29	34	29	26	29	26	23
8	55	43	35	29	51	40	33	28	36	30	26	31	26	23	27	23	20
9	51	39	31	26	48	37	30	25	33	27	23	29	24	21	25	21	18
10	48	36	28	24	45	34	27	23	30	25	21	27	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4629	4629	4629
5°	4629	4553	4587
10°	4584	4481	4516
15°	4510	4396	4411
20°	4411	4283	4303
25°	4313	4150	4180
30°	4192	4025	4026
35°	4076	3879	3864
40°	3936	3732	3708
45°	3795	3583	3548
50°	3640	3427	3365
55°	3478	3247	3193
60°	3294	3035	2998
65°	3093	2812	2767
70°	2836	2543	2517
75°	2485	2219	2274
80°	2057	1806	1835
85°	1397	1133	1135

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3795 cd/sqm

TEST NUMBER: P907942

CATALOG NUMBER: DFN2DIP-HX2F0-050D040US840-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.9	2.2
10°-20°	520.3	6.1
20°-30°	764.6	8.9
30°-40°	888.1	10.4
40°-50°	887.0	10.3
50°-60°	773.4	9.0
60°-70°	571.7	6.7
70°-80°	323.5	3.8
80°-90°	89.0	1.0
90°-100°	79.1	0.9
100°-110°	251.2	2.9
110°-120°	429.8	5.0
120°-130°	565.3	6.6
130°-140°	634.5	7.4
140°-150°	622.2	7.3
150°-160°	522.0	6.1
160°-170°	346.2	4.0
170°-180°	121.0	1.4
0°-30°	1469.8	17.1
0°-40°	2357.9	27.5
0°-60°	4018.3	46.9
0°-90°	5002.5	58.3
90°-120°	760.1	8.9
90°-150°	2582.2	30.1
90°-180°	3571.0	41.7
0°-180°	8573.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1952	1948	187
15°	1870	1859	1834	1842	1833	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
90°	1	14	38	35	37	8
95°	56	67	69	69	67	63
105°	232	235	237	239	239	245
115°	431	438	436	434	431	427
125°	627	637	634	630	629	561
135°	812	823	826	825	822	627
145°	985	993	999	1000	996	616
155°	1126	1130	1133	1138	1135	519
165°	1226	1224	1224	1232	1227	346
175°	1275	1272	1270	1278	1271	121
180°	1278	1278	1278	1278	1278	

TEST NUMBER: P907942

CATALOG NUMBER: DFN2DIP-HX2F0-050D040US840-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.7	1964.7	1964.7	1964.7	1964.7
2.5°	1976.1	1966.7	1945.9	1964.7	1961.2
5°	1964.7	1957.3	1936.4	1951.5	1947.9
7.5°	1951.5	1940.3	1919.5	1934.7	1930.9
10°	1930.9	1917.6	1895.0	1910.0	1904.4
12.5°	1902.4	1891.2	1868.6	1877.9	1874.1
15°	1870.3	1859.1	1834.4	1842.1	1832.6
17.5°	1830.6	1819.4	1794.7	1804.1	1794.7
20°	1787.2	1775.9	1749.5	1755.0	1747.7
22.5°	1743.8	1726.8	1702.1	1702.1	1698.3
25°	1692.7	1677.7	1645.6	1649.2	1645.6
27.5°	1636.0	1622.8	1598.3	1592.7	1583.3
30°	1579.4	1564.3	1536.0	1530.4	1522.8
32.5°	1518.9	1507.7	1477.4	1466.0	1458.4
35°	1460.4	1441.6	1411.3	1399.9	1390.5
37.5°	1394.2	1377.3	1347.0	1333.7	1324.3
40°	1326.4	1311.1	1280.8	1263.9	1256.4
42.5°	1260.2	1245.0	1214.9	1195.8	1184.6
45°	1188.4	1175.2	1146.7	1126.1	1118.4
47.5°	1118.4	1105.2	1075.0	1054.1	1042.9
50°	1044.7	1035.3	1008.9	982.4	972.9
52.5°	972.9	959.7	935.2	914.4	901.2
55°	899.4	888.0	865.3	842.6	833.2
57.5°	825.6	816.2	791.5	768.9	761.2
60°	751.8	744.5	718.0	697.1	691.6
62.5°	680.1	666.9	648.0	629.1	621.6
65°	606.5	595.1	576.2	559.3	549.8
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.4	423.1	415.8
72.5°	389.3	381.6	372.2	359.0	353.4
75°	317.3	313.7	304.1	292.9	296.7
77.5°	253.2	245.5	241.8	236.1	230.6
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.5	128.5	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
90°	1.1	13.8	37.8	35.4	36.6
92.5°	23.8	32.3	33.5	34.6	34.6
95°	56.2	67.1	69.0	69.0	67.1
97.5°	93.6	103.6	107.9	107.9	107.9
100°	136.7	145.6	148.7	148.7	147.5
102.5°	182.2	188.7	193.0	194.1	193.0
105°	231.9	234.9	237.2	239.1	239.1
107.5°	281.1	285.8	285.8	286.5	281.1
110°	328.9	335.1	335.1	335.1	332.0



TEST NUMBER: P907942

CATALOG NUMBER: DFN2DIP-HX2F0-050D040US840-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	380.5	387.1	385.9	382.8	380.5
115°	431.3	437.6	435.6	434.4	431.3
117.5°	481.8	490.3	484.9	481.8	478.8
120°	532.7	541.1	532.7	532.7	529.2
122.5°	578.9	589.7	584.3	581.2	578.9
125°	627.4	637.0	634.0	630.5	629.3
127.5°	674.8	686.7	682.5	677.8	674.8
130°	719.0	733.0	731.0	728.7	724.5
132.5°	768.7	779.5	780.3	774.9	771.8
135°	811.5	823.4	825.8	824.6	821.5
137.5°	859.3	868.9	870.8	870.0	865.5
140°	901.2	910.9	916.3	916.3	912.0
142.5°	944.4	954.0	957.0	958.3	954.0
145°	985.2	992.9	999.1	1000.3	996.0
147.5°	1021.8	1031.4	1036.0	1037.9	1033.7
150°	1059.6	1066.1	1070.4	1073.8	1070.4
152.5°	1093.1	1099.5	1105.0	1109.2	1105.0
155°	1126.5	1129.6	1133.1	1138.5	1135.0
157.5°	1155.5	1157.7	1159.6	1167.4	1162.0
160°	1181.2	1183.6	1184.7	1191.2	1186.6
162.5°	1205.1	1205.1	1206.3	1213.6	1208.2
165°	1225.6	1224.4	1224.4	1232.0	1226.7
167.5°	1244.1	1240.5	1240.5	1248.3	1242.8
170°	1257.9	1254.8	1253.6	1261.3	1254.8
172.5°	1267.5	1264.5	1263.2	1271.0	1264.5
175°	1275.3	1272.1	1269.8	1277.5	1271.0
177.5°	1279.5	1276.4	1274.0	1280.6	1274.0
180°	1277.5	1277.5	1277.5	1277.5	1277.5

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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	13.19	14.14	14.08	15.04	16.19	12.77	13.71	13.65	14.62	15.76
	3H	14.84	15.68	15.73	16.59	17.77	14.38	15.22	15.27	16.13	17.30
	4H	15.41	16.21	16.32	17.13	18.31	14.95	15.75	15.86	16.67	17.85
	6H	15.80	16.53	16.72	17.46	18.65	15.34	16.07	16.26	17.00	18.19
	8H	15.89	16.59	16.82	17.54	18.73	15.43	16.14	16.36	17.08	18.27
	12H	15.93	16.60	16.87	17.54	18.76	15.47	16.14	16.41	17.08	18.30
4H	2H	13.66	14.46	14.57	15.37	16.55	13.32	14.12	14.23	15.03	16.22
	3H	15.50	16.17	16.43	17.12	18.31	15.12	15.78	16.04	16.73	17.93
	4H	16.20	16.81	17.13	17.75	18.97	15.80	16.41	16.74	17.36	18.58
	6H	16.69	17.22	17.64	18.19	19.41	16.30	16.82	17.25	17.79	19.01
	8H	16.83	17.32	17.79	18.29	19.52	16.44	16.93	17.39	17.89	19.13
	12H	16.90	17.34	17.87	18.32	19.56	16.49	16.94	17.47	17.92	19.16
8H	4H	16.39	16.88	17.34	17.84	19.08	16.04	16.53	16.99	17.49	18.73
	6H	16.99	17.40	17.97	18.40	19.64	16.64	17.05	17.62	18.05	19.29
	8H	17.20	17.56	18.19	18.55	19.80	16.84	17.20	17.83	18.20	19.45
	12H	17.32	17.64	18.31	18.62	19.92	16.95	17.27	17.94	18.25	19.55
12H	4H	16.38	16.82	17.35	17.80	19.04	16.03	16.48	17.00	17.45	18.70
	6H	17.02	17.38	18.01	18.37	19.62	16.68	17.04	17.67	18.03	19.28
	8H	17.25	17.56	18.24	18.55	19.85	16.90	17.22	17.89	18.20	19.50