

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: P921555

Luminaire Tested: DFN2DIP-HX2F0-040D020US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921555
REPORT IS A COMBINATION OF REPORTS P900675 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-040D020US940-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

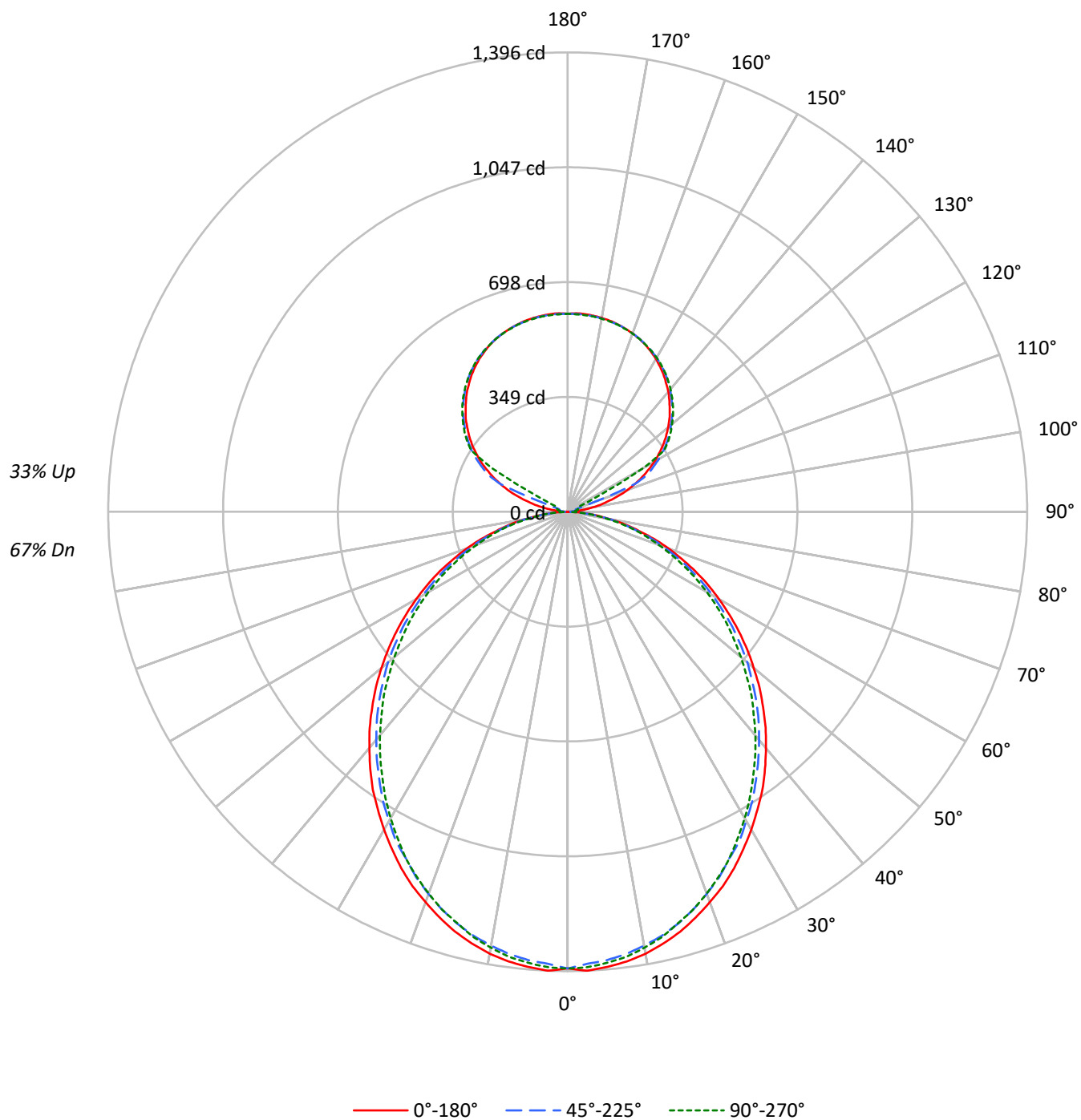
Lumens per Lamp: N/A
Luminaire Lumens: 5296.8 lumens
Efficiency: N/A
Efficacy: 103.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 51.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P921555

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US940-FLLONL

Luminous Intensity Polar Plot



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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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71
1	102	97	93	90	95	92	88	85	81	79	76	72	70	68	63	62	60
2	92	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33
6	66	53	45	39	62	50	43	37	45	39	34	41	35	32	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3270	3270	3270
5°	3270	3217	3240
10°	3238	3166	3190
15°	3186	3106	3116
20°	3116	3026	3040
25°	3047	2931	2953
30°	2961	2843	2844
35°	2879	2740	2729
40°	2780	2636	2619
45°	2681	2531	2507
50°	2572	2421	2377
55°	2457	2294	2256
60°	2327	2144	2118
65°	2185	1987	1955
70°	2004	1796	1777
75°	1756	1567	1607
80°	1453	1276	1297
85°	987	801	802

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2681 cd/sqm

TEST NUMBER: P921555

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US940-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.6	2.5
10°-20°	367.5	6.9
20°-30°	540.1	10.2
30°-40°	627.3	11.8
40°-50°	626.6	11.8
50°-60°	546.3	10.3
60°-70°	403.9	7.6
70°-80°	228.5	4.3
80°-90°	61.4	1.2
90°-100°	19.8	0.4
100°-110°	74.0	1.4
110°-120°	196.2	3.7
120°-130°	325.4	6.1
130°-140°	345.7	6.5
140°-150°	321.3	6.1
150°-160°	258.3	4.9
160°-170°	166.4	3.1
170°-180°	57.3	1.1
0°-30°	1038.3	19.6
0°-40°	1665.6	31.4
0°-60°	2838.5	53.6
0°-90°	3532.3	66.7
90°-120°	290.0	5.5
90°-150°	1282.5	24.2
90°-180°	1765.0	33.3
0°-180°	5296.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1388	1383	1368	1378	1376	132
15°	1321	1313	1296	1301	1295	372
25°	1196	1185	1162	1165	1162	550
35°	1032	1018	997	989	982	644
45°	840	830	810	796	790	648
55°	635	627	611	595	589	568
65°	428	420	407	395	388	424
75°	224	222	215	207	210	239
85°	55	53	52	48	47	61
90°	0	5	9	11	12	5
95°	28	14	17	19	19	33
105°	132	145	27	31	33	141
115°	250	258	269	67	36	247
125°	354	360	368	371	372	316
135°	438	445	449	453	452	338
145°	508	508	515	518	516	318
155°	560	556	561	564	560	258
165°	590	587	588	592	588	167
175°	603	600	601	604	600	57
180°	602	602	602	602	602	

TEST NUMBER: P921555

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US940-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1387.9	1387.9	1387.9	1387.9	1387.9
2.5°	1396.0	1389.3	1374.6	1387.9	1385.4
5°	1387.9	1382.6	1367.9	1378.5	1376.0
7.5°	1378.5	1370.6	1355.8	1366.6	1364.0
10°	1364.0	1354.6	1338.6	1349.2	1345.2
12.5°	1343.8	1335.9	1319.9	1326.6	1323.8
15°	1321.2	1313.2	1295.8	1301.2	1294.6
17.5°	1293.2	1285.2	1267.8	1274.4	1267.8
20°	1262.4	1254.5	1235.8	1239.7	1234.6
22.5°	1231.8	1219.8	1202.4	1202.4	1199.7
25°	1195.7	1185.1	1162.4	1165.0	1162.4
27.5°	1155.7	1146.3	1129.1	1125.1	1118.5
30°	1115.7	1105.0	1085.0	1081.0	1075.7
32.5°	1073.0	1065.1	1043.7	1035.6	1030.2
35°	1031.6	1018.3	996.9	988.9	982.2
37.5°	984.9	972.9	951.5	942.2	935.5
40°	936.9	926.1	904.7	892.9	887.5
42.5°	890.2	879.4	858.2	844.7	836.8
45°	839.5	830.2	810.0	795.5	790.1
47.5°	790.1	780.7	759.4	744.7	736.7
50°	738.0	731.3	712.7	693.9	687.2
52.5°	687.2	678.0	660.7	646.0	636.6
55°	635.3	627.2	611.3	595.2	588.6
57.5°	583.2	576.6	559.1	543.1	537.8
60°	531.1	525.8	507.2	492.5	488.5
62.5°	480.5	471.1	457.8	444.4	439.1
65°	428.5	420.4	407.1	395.0	388.4
67.5°	375.1	368.3	356.4	347.1	341.7
70°	325.7	320.3	308.3	298.9	293.6
72.5°	275.0	269.6	263.0	253.6	249.6
75°	224.2	221.6	214.8	206.9	209.6
77.5°	178.8	173.4	170.8	166.7	162.8
80°	133.5	132.1	129.4	125.5	122.8
82.5°	90.8	90.8	89.5	84.1	84.1
85°	54.7	53.4	52.1	48.0	46.7
87.5°	24.1	21.4	18.7	14.7	13.3
90°	0.4	5.3	8.6	10.9	11.8
92.5°	10.9	9.2	10.4	11.3	11.8
95°	28.3	13.9	16.9	19.2	18.7
97.5°	50.9	15.2	22.2	23.5	24.0
100°	77.1	17.4	24.8	28.3	29.2
102.5°	105.8	105.0	25.7	30.5	31.8
105°	132.4	145.4	26.6	31.3	33.1
107.5°	163.4	174.2	27.5	32.2	34.0
110°	193.0	202.1	76.2	32.7	34.4

TEST NUMBER: P921555

CATALOG NUMBER: DFN2DIP-HX2F0-040D020US940-FLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	220.8	228.6	221.2	33.5	34.9
115°	250.4	257.8	268.8	67.1	35.8
117.5°	276.1	284.8	292.2	230.0	115.8
120°	304.9	311.4	319.2	324.5	265.6
122.5°	329.2	336.2	344.9	347.5	348.0
125°	354.1	359.7	368.0	371.0	372.4
127.5°	376.7	382.8	389.4	393.7	394.1
130°	398.1	405.0	409.8	414.6	414.2
132.5°	419.8	425.5	430.3	434.2	433.8
135°	438.2	445.1	449.0	453.4	452.5
137.5°	457.3	462.5	466.9	471.3	469.9
140°	476.0	479.6	484.3	488.2	486.1
142.5°	491.7	494.8	500.4	503.9	501.7
145°	508.3	507.8	515.2	518.3	516.1
147.5°	522.6	521.3	528.7	530.8	529.1
150°	536.5	533.5	540.5	543.1	540.9
152.5°	548.3	544.8	551.3	554.0	550.9
155°	559.6	555.7	561.0	563.6	560.1
157.5°	568.8	565.3	569.3	572.3	568.8
160°	576.7	574.0	576.7	579.3	576.2
162.5°	583.5	580.9	583.2	586.2	582.3
165°	589.7	587.1	588.4	591.5	588.4
167.5°	594.5	591.8	593.2	596.3	592.3
170°	598.4	595.8	596.6	599.7	595.8
172.5°	601.0	598.4	599.3	602.4	598.4
175°	603.2	600.1	601.0	604.0	599.7
177.5°	604.0	601.0	601.5	604.5	600.6
180°	601.9	601.9	601.9	601.9	601.9

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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	12.66	13.70	13.46	14.52	15.53	12.24	13.28	13.04	14.10	15.11
	3H	14.31	15.24	15.13	16.07	17.11	13.85	14.78	14.66	15.61	16.65
	4H	14.89	15.77	15.72	16.61	17.66	14.43	15.31	15.26	16.15	17.20
	6H	15.28	16.09	16.12	16.94	18.00	14.82	15.63	15.66	16.48	17.54
	8H	15.38	16.15	16.23	17.02	18.08	14.92	15.69	15.77	16.56	17.62
	12H	15.43	16.16	16.28	17.02	18.11	14.96	15.70	15.82	16.56	17.65
4H	2H	13.14	14.01	13.97	14.85	15.90	12.80	13.68	13.63	14.51	15.57
	3H	14.99	15.72	15.83	16.59	17.66	14.61	15.34	15.45	16.21	17.28
	4H	15.69	16.36	16.55	17.23	18.32	15.30	15.96	16.16	16.83	17.93
	6H	16.19	16.77	17.07	17.66	18.76	15.80	16.37	16.67	17.27	18.36
	8H	16.33	16.87	17.21	17.76	18.87	15.94	16.48	16.81	17.37	18.48
	12H	16.40	16.89	17.30	17.80	18.91	16.00	16.48	16.90	17.39	18.51
8H	4H	15.89	16.43	16.77	17.32	18.43	15.54	16.08	16.42	16.97	18.08
	6H	16.50	16.95	17.40	17.88	18.99	16.15	16.59	17.05	17.53	18.64
	8H	16.71	17.10	17.62	18.03	19.15	16.35	16.75	17.26	17.67	18.80
	12H	16.83	17.18	17.75	18.09	19.27	16.46	16.81	17.38	17.72	18.90
12H	4H	15.88	16.37	16.78	17.28	18.39	15.54	16.02	16.44	16.93	18.05
	6H	16.53	16.92	17.44	17.85	18.97	16.18	16.58	17.10	17.50	18.63
	8H	16.76	17.11	17.68	18.02	19.20	16.41	16.76	17.33	17.68	18.86

END OF REPORT