

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: P905396

Luminaire Tested: DFN2DIP-HX3F0-090D040US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905396
REPORT IS A COMBINATION OF REPORTS P899228 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-090D040US835-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

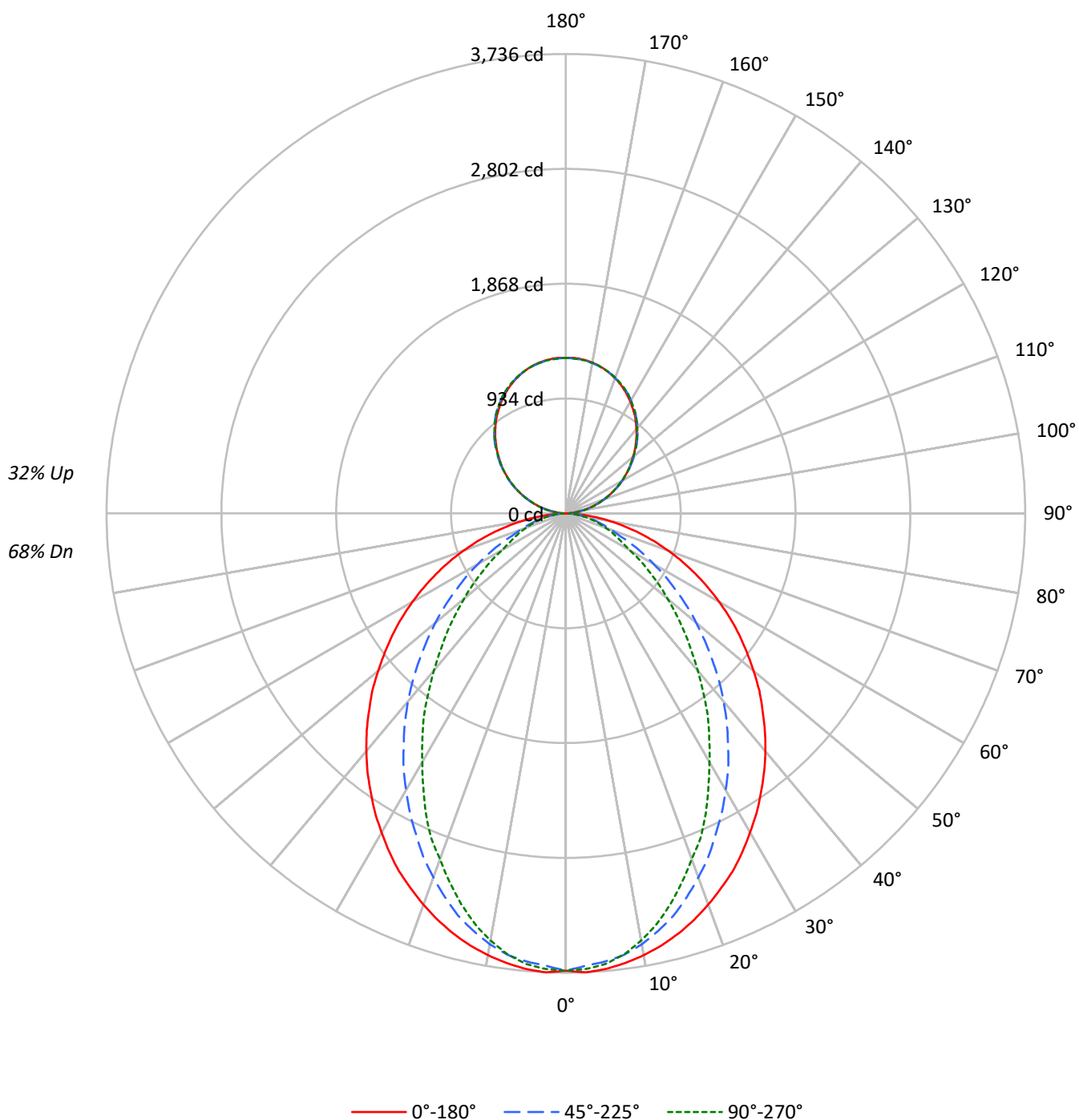
Lumens per Lamp: N/A
Luminaire Lumens: 11190.0 lumens
Efficiency: N/A
Efficacy: 91.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 122.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P905396

CATALOG NUMBER: DFN2DIP-HX3F0-090D040US835-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P905396

CATALOG NUMBER: DFN2DIP-HX3F0-090D040US835-RLLFLL

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	112	112	112	112	105	105	105	105	94	94	94	83	83	83	73	73	73
1	103	98	95	91	97	93	90	87	83	81	78	74	72	70	66	64	63
2	94	87	81	76	89	82	77	72	74	70	66	66	63	60	59	56	54
3	86	77	70	64	81	73	67	61	66	61	56	59	55	51	52	49	47
4	79	69	61	55	75	65	58	53	59	53	49	53	48	45	47	44	41
5	73	62	53	48	69	59	51	46	53	47	43	48	43	39	43	39	36
6	68	56	48	42	64	53	46	40	48	42	38	44	39	35	39	35	32
7	63	51	43	37	59	48	41	36	44	38	33	40	35	31	36	32	29
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26
9	55	42	35	30	52	41	34	29	37	31	27	34	29	25	31	27	24
10	51	39	32	27	48	37	31	26	34	29	25	32	27	23	29	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4309	4309	4309
5°	4314	4237	4265
10°	4269	4151	4124
15°	4208	4011	3907
20°	4129	3819	3642
25°	4047	3605	3386
30°	3938	3385	3062
35°	3831	3149	2778
40°	3722	2905	2452
45°	3596	2635	2157
50°	3465	2362	1869
55°	3328	2072	1592
60°	3170	1768	1309
65°	2988	1460	1175
70°	2767	1172	1060
75°	2488	1027	959
80°	2086	852	824
85°	1425	554	605

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3596 cd/sqm

TEST NUMBER: P905396

CATALOG NUMBER: DFN2DIP-HX3F0-090D040US835-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	348.6	3.1
10°-20°	957.0	8.6
20°-30°	1343.6	12.0
30°-40°	1464.6	13.1
40°-50°	1346.2	12.0
50°-60°	1057.2	9.4
60°-70°	688.1	6.1
70°-80°	354.2	3.2
80°-90°	94.0	0.8
90°-100°	78.3	0.7
100°-110°	248.7	2.2
110°-120°	425.6	3.8
120°-130°	559.8	5.0
130°-140°	628.3	5.6
140°-150°	616.2	5.5
150°-160°	516.9	4.6
160°-170°	342.8	3.1
170°-180°	119.8	1.1
0°-30°	2649.2	23.7
0°-40°	4113.9	36.8
0°-60°	6517.2	58.2
0°-90°	7653.6	68.4
90°-120°	752.7	6.7
90°-150°	2556.9	22.9
90°-180°	3536.0	31.6
0°-180°	11190.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3720	3720	3720	3720	3720	
5°	3720	3703	3659	3689	3679	353
15°	3538	3501	3386	3322	3289	997
25°	3212	3104	2882	2744	2693	1477
35°	2767	2595	2299	2087	2013	1732
45°	2262	2036	1683	1444	1363	1747
55°	1720	1458	1094	892	828	1537
65°	1161	889	586	471	461	1151
75°	619	384	269	246	242	655
85°	145	74	64	64	64	166
90°	1	14	37	35	36	11
95°	56	66	68	68	66	62
105°	230	233	235	237	237	242
115°	427	433	431	430	427	422
125°	621	631	628	624	623	555
135°	804	815	818	816	814	621
145°	976	983	989	990	986	610
155°	1116	1119	1122	1127	1124	513
165°	1214	1212	1212	1220	1215	342
175°	1263	1260	1257	1265	1259	120
180°	1265	1265	1265	1265	1265	

TEST NUMBER: P905396

CATALOG NUMBER: DFN2DIP-HX3F0-090D040US835-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3719.7	3719.7	3719.7	3719.7	3719.7
2.5°	3736.5	3719.7	3682.5	3716.5	3709.7
5°	3719.7	3702.9	3659.0	3689.3	3679.3
7.5°	3689.3	3669.3	3622.2	3635.4	3618.6
10°	3649.0	3625.4	3558.3	3547.9	3527.9
12.5°	3598.6	3568.3	3477.2	3457.2	3420.0
15°	3537.9	3500.8	3386.5	3322.5	3289.0
17.5°	3467.2	3413.3	3271.8	3197.9	3144.0
20°	3386.5	3319.0	3150.7	3066.8	2992.5
22.5°	3299.0	3221.5	3026.1	2911.8	2861.5
25°	3211.5	3103.6	2881.5	2743.6	2692.9
27.5°	3107.2	2992.5	2746.8	2588.6	2511.1
30°	2996.1	2867.9	2598.6	2427.2	2336.1
32.5°	2888.2	2733.2	2457.5	2255.4	2171.1
35°	2767.2	2595.4	2299.3	2087.2	2012.9
37.5°	2649.3	2464.0	2151.1	1918.6	1834.7
40°	2524.7	2322.9	1996.1	1757.2	1669.7
42.5°	2396.8	2181.5	1841.4	1592.2	1508.2
45°	2262.2	2036.5	1683.2	1443.9	1363.2
47.5°	2134.3	1895.4	1531.8	1292.5	1218.6
50°	1992.9	1753.9	1383.6	1151.1	1080.7
52.5°	1854.7	1602.2	1242.2	1020.0	956.1
55°	1720.0	1457.5	1093.9	892.2	828.2
57.5°	1582.2	1312.9	962.9	774.3	720.4
60°	1440.7	1171.4	824.7	653.2	599.3
62.5°	1302.9	1033.6	706.8	545.4	518.6
65°	1161.4	888.6	585.7	471.4	461.1
67.5°	1026.8	753.9	471.4	413.9	403.9
70°	885.4	622.9	390.4	356.8	343.2
72.5°	750.7	501.4	326.4	299.6	292.9
75°	619.3	383.6	269.3	245.7	242.5
77.5°	488.2	272.5	212.1	198.6	191.8
80°	366.8	195.4	161.4	148.2	148.2
82.5°	255.7	131.4	111.1	104.3	104.3
85°	144.6	73.9	63.9	63.9	63.9
87.5°	53.9	26.8	26.8	23.6	23.6
90°	1.1	13.7	37.4	35.1	36.2
92.5°	23.6	32.0	33.2	34.3	34.3
95°	55.7	66.4	68.3	68.3	66.4
97.5°	92.7	102.6	106.8	106.8	106.8
100°	135.4	144.2	147.2	147.2	146.1
102.5°	180.4	186.9	191.1	192.2	191.1
105°	229.6	232.6	234.9	236.8	236.8
107.5°	278.4	283.0	283.0	283.7	278.4
110°	325.7	331.8	331.8	331.8	328.8

TEST NUMBER: P905396

CATALOG NUMBER: DFN2DIP-HX3F0-090D040US835-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	376.8	383.3	382.1	379.1	376.8
115°	427.1	433.3	431.3	430.2	427.1
117.5°	477.1	485.5	480.2	477.1	474.1
120°	527.5	535.8	527.5	527.5	524.0
122.5°	573.2	583.9	578.6	575.5	573.2
125°	621.3	630.8	627.8	624.3	623.2
127.5°	668.2	680.0	675.8	671.2	668.2
130°	712.0	725.8	723.9	721.6	717.4
132.5°	761.2	771.9	772.7	767.3	764.3
135°	803.6	815.4	817.7	816.5	813.5
137.5°	850.9	860.4	862.3	861.5	857.0
140°	892.4	902.0	907.3	907.3	903.1
142.5°	935.2	944.7	947.7	948.9	944.7
145°	975.6	983.2	989.3	990.5	986.3
147.5°	1011.8	1021.3	1025.9	1027.8	1023.6
150°	1049.2	1055.7	1059.9	1063.3	1059.9
152.5°	1082.4	1088.8	1094.2	1098.4	1094.2
155°	1115.5	1118.6	1122.0	1127.4	1123.9
157.5°	1144.2	1146.4	1148.3	1156.0	1150.6
160°	1169.7	1172.0	1173.1	1179.6	1175.0
162.5°	1193.3	1193.3	1194.5	1201.7	1196.4
165°	1213.6	1212.4	1212.4	1220.0	1214.7
167.5°	1231.9	1228.4	1228.4	1236.1	1230.7
170°	1245.6	1242.5	1241.4	1249.0	1242.5
172.5°	1255.1	1252.1	1250.9	1258.6	1252.1
175°	1262.8	1259.7	1257.4	1265.0	1258.6
177.5°	1267.0	1263.9	1261.6	1268.1	1261.6
180°	1265.0	1265.0	1265.0	1265.0	1265.0

TEST NUMBER: P905396

CATALOG NUMBER: DFN2DIP-HX3F0-090D040US835-RLLFLL

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	13.74	14.75	14.53	15.56	16.54	9.72	10.73	10.51	11.53	12.52
	3H	15.43	16.33	16.23	17.14	18.16	10.92	11.82	11.72	12.64	13.65
	4H	16.04	16.89	16.86	17.71	18.74	11.37	12.22	12.19	13.05	14.07
	6H	16.46	17.25	17.30	18.08	19.12	11.70	12.48	12.53	13.31	14.35
	8H	16.59	17.34	17.43	18.19	19.22	11.79	12.54	12.63	13.39	14.43
	12H	16.66	17.36	17.50	18.21	19.27	11.84	12.55	12.69	13.39	14.46
4H	2H	13.78	14.63	14.61	15.46	16.48	10.33	11.18	11.16	12.01	13.03
	3H	15.62	16.32	16.45	17.18	18.22	11.69	12.40	12.53	13.26	14.30
	4H	16.31	16.95	17.16	17.81	18.88	12.25	12.89	13.09	13.74	14.81
	6H	16.83	17.38	17.69	18.26	19.34	12.67	13.22	13.53	14.10	15.17
	8H	17.00	17.52	17.87	18.39	19.48	12.80	13.31	13.67	14.19	15.27
	12H	17.10	17.57	17.99	18.46	19.55	12.87	13.33	13.76	14.23	15.32
8H	4H	16.29	16.81	17.16	17.68	18.77	12.53	13.05	13.40	13.92	15.01
	6H	16.86	17.28	17.75	18.20	19.28	13.05	13.48	13.95	14.39	15.48
	8H	17.07	17.45	17.97	18.36	19.46	13.24	13.62	14.15	14.53	15.63
	12H	17.21	17.54	18.12	18.44	19.60	13.36	13.70	14.27	14.60	15.75
12H	4H	16.25	16.72	17.14	17.61	18.70	12.55	13.01	13.43	13.90	14.99
	6H	16.83	17.21	17.74	18.12	19.22	13.10	13.48	14.00	14.39	15.49
	8H	17.05	17.39	17.96	18.29	19.45	13.31	13.65	14.22	14.55	15.70