

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: P924344

Luminaire Tested: DFN2DIP-HX3F0-030D030US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924344
REPORT IS A COMBINATION OF REPORTS P899202 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-030D030US950-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

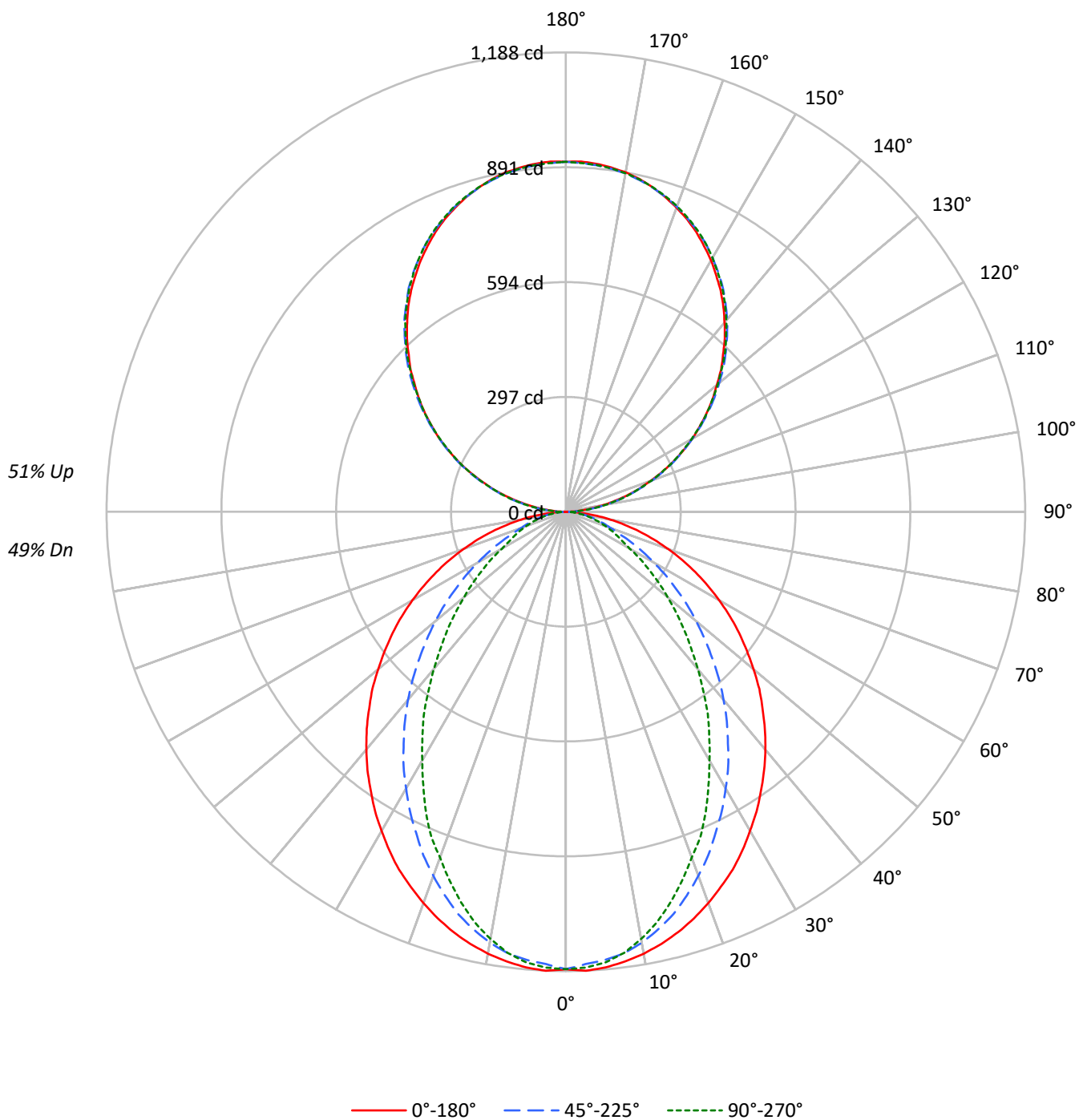
Lumens per Lamp: N/A
Luminaire Lumens: 4965.5 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 46.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P924344

CATALOG NUMBER: DFN2DIP-HX3F0-030D030US950-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P924344

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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	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°	1370	1370	1370
5°	1372	1348	1356
10°	1358	1320	1311
15°	1338	1276	1243
20°	1313	1214	1158
25°	1287	1146	1077
30°	1252	1076	974
35°	1218	1001	883
40°	1184	924	780
45°	1144	838	686
50°	1102	751	594
55°	1058	659	506
60°	1008	562	416
65°	950	464	374
70°	880	373	337
75°	791	327	305
80°	664	271	262
85°	453	176	192

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1144 cd/sqm

TEST NUMBER: P924344

CATALOG NUMBER: DFN2DIP-HX3F0-030D030US950-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.9	2.2
10°-20°	304.3	6.1
20°-30°	427.3	8.6
30°-40°	465.7	9.4
40°-50°	428.1	8.6
50°-60°	336.2	6.8
60°-70°	218.8	4.4
70°-80°	112.6	2.3
80°-90°	31.3	0.6
90°-100°	56.0	1.1
100°-110°	178.0	3.6
110°-120°	304.6	6.1
120°-130°	400.5	8.1
130°-140°	449.6	9.1
140°-150°	440.9	8.9
150°-160°	369.8	7.4
160°-170°	245.3	4.9
170°-180°	85.7	1.7
0°-30°	842.5	17.0
0°-40°	1308.2	26.3
0°-60°	2072.5	41.7
0°-90°	2435.2	49.0
90°-120°	538.5	10.8
90°-150°	1829.5	36.8
90°-180°	2530.0	51.0
0°-180°	4965.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1183	1183	1183	1183	1183	
5°	1183	1178	1164	1173	1170	112
15°	1125	1113	1077	1057	1046	317
25°	1021	987	916	872	856	470
35°	880	825	731	664	640	551
45°	719	648	535	459	434	556
55°	547	464	348	284	263	489
65°	369	283	186	150	147	366
75°	197	122	86	78	77	208
85°	46	24	20	20	20	53
90°	1	10	27	25	26	5
95°	40	48	49	49	48	44
105°	164	166	168	169	169	173
115°	306	310	309	308	306	302
125°	445	451	449	447	446	397
135°	575	583	585	584	582	444
145°	698	704	708	709	706	436
155°	798	800	803	807	804	367
165°	868	868	868	873	869	245
175°	904	901	900	905	900	86
180°	905	905	905	905	905	

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CATALOG NUMBER: DFN2DIP-HX3F0-030D030US950-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1182.9	1182.9	1182.9	1182.9	1182.9
2.5°	1188.2	1182.9	1171.0	1181.8	1179.7
5°	1182.9	1177.5	1163.6	1173.2	1170.0
7.5°	1173.2	1166.8	1151.9	1156.1	1150.7
10°	1160.4	1152.9	1131.5	1128.2	1121.9
12.5°	1144.3	1134.7	1105.8	1099.4	1087.6
15°	1125.1	1113.2	1076.9	1056.6	1045.9
17.5°	1102.5	1085.5	1040.4	1017.0	999.8
20°	1076.9	1055.4	1001.9	975.3	951.6
22.5°	1049.1	1024.4	962.3	926.0	909.9
25°	1021.3	986.9	916.3	872.4	856.3
27.5°	988.1	951.6	873.5	823.2	798.5
30°	952.8	912.0	826.4	771.9	742.9
32.5°	918.4	869.2	781.5	717.2	690.4
35°	880.0	825.3	731.1	663.7	640.1
37.5°	842.5	783.5	684.0	610.1	583.5
40°	802.9	738.7	634.8	558.8	531.0
42.5°	762.2	693.7	585.6	506.3	479.6
45°	719.4	647.6	535.3	459.2	433.5
47.5°	678.7	602.7	487.1	411.0	387.5
50°	633.7	557.7	440.0	366.0	343.6
52.5°	589.8	509.5	395.1	324.4	304.0
55°	546.9	463.5	347.8	283.7	263.4
57.5°	503.1	417.5	306.2	246.2	229.1
60°	458.1	372.5	262.3	207.7	190.6
62.5°	414.3	328.7	224.8	173.4	164.9
65°	369.3	282.6	186.2	149.9	146.6
67.5°	326.6	239.7	149.9	131.7	128.4
70°	281.5	198.1	124.1	113.4	109.1
72.5°	238.7	159.4	103.8	95.3	93.1
75°	196.9	122.0	85.7	78.1	77.1
77.5°	155.2	86.6	67.4	63.2	61.0
80°	116.7	62.1	51.3	47.1	47.1
82.5°	81.3	41.8	35.3	33.2	33.2
85°	46.0	23.5	20.3	20.3	20.3
87.5°	17.2	8.5	8.5	7.5	7.5
90°	0.9	9.8	26.7	25.1	25.9
92.5°	16.9	22.9	23.8	24.5	24.5
95°	39.9	47.5	48.8	48.8	47.5
97.5°	66.3	73.4	76.4	76.4	76.4
100°	96.8	103.1	105.3	105.3	104.6
102.5°	129.1	133.8	136.7	137.6	136.7
105°	164.3	166.5	168.1	169.4	169.4
107.5°	199.2	202.4	202.4	203.0	199.2
110°	233.1	237.5	237.5	237.5	235.3

TEST NUMBER: P924344

CATALOG NUMBER: DFN2DIP-HX3F0-030D030US950-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	269.6	274.3	273.4	271.2	269.6
115°	305.7	310.0	308.6	307.9	305.7
117.5°	341.3	347.4	343.5	341.3	339.1
120°	377.4	383.4	377.4	377.4	374.9
122.5°	410.1	417.8	413.9	411.7	410.1
125°	444.6	451.3	449.1	446.7	445.9
127.5°	478.0	486.5	483.6	480.2	478.0
130°	509.4	519.3	517.9	516.3	513.3
132.5°	544.6	552.3	552.8	549.0	546.8
135°	575.0	583.4	585.1	584.2	582.0
137.5°	608.7	615.6	617.0	616.5	613.1
140°	638.5	645.4	649.2	649.2	646.1
142.5°	669.1	675.9	678.1	679.0	675.9
145°	698.0	703.5	707.9	708.6	705.7
147.5°	724.0	730.8	734.0	735.4	732.4
150°	750.7	755.4	758.3	760.8	758.3
152.5°	774.5	779.0	782.9	785.9	782.9
155°	798.2	800.3	802.8	806.6	804.2
157.5°	818.6	820.2	821.7	827.1	823.3
160°	836.9	838.6	839.4	844.0	840.8
162.5°	853.8	853.8	854.7	859.8	856.0
165°	868.3	867.5	867.5	872.9	869.1
167.5°	881.4	878.9	878.9	884.4	880.5
170°	891.2	889.0	888.3	893.7	889.0
172.5°	898.0	895.9	895.0	900.5	895.9
175°	903.5	901.3	899.7	905.2	900.5
177.5°	906.5	904.3	902.7	907.3	902.7
180°	905.2	905.2	905.2	905.2	905.2

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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	8.11	8.93	9.08	9.91	11.20	4.08	4.90	5.05	5.89	7.17
	3H	9.78	10.51	10.76	11.50	12.81	5.27	6.00	6.25	6.99	8.30
	4H	10.38	11.07	11.37	12.07	13.39	5.71	6.41	6.71	7.40	8.72
	6H	10.79	11.43	11.80	12.43	13.76	6.03	6.67	7.04	7.67	9.00
	8H	10.92	11.52	11.93	12.54	13.87	6.12	6.73	7.13	7.74	9.07
	12H	10.97	11.55	11.99	12.56	13.91	6.16	6.74	7.18	7.75	9.10
4H	2H	8.12	8.82	9.12	9.81	11.13	4.67	5.37	5.67	6.36	7.68
	3H	9.94	10.52	10.95	11.54	12.87	6.02	6.59	7.03	7.62	8.95
	4H	10.63	11.16	11.65	12.17	13.53	6.56	7.09	7.58	8.10	9.46
	6H	11.13	11.59	12.16	12.63	13.98	6.97	7.43	8.00	8.47	9.82
	8H	11.31	11.73	12.34	12.76	14.13	7.10	7.52	8.13	8.56	9.92
	12H	11.40	11.78	12.44	12.82	14.20	7.16	7.54	8.21	8.59	9.96
8H	4H	10.59	11.02	11.62	12.05	13.41	6.83	7.26	7.86	8.29	9.66
	6H	11.15	11.50	12.20	12.57	13.94	7.35	7.70	8.40	8.77	10.13
	8H	11.36	11.67	12.42	12.73	14.11	7.53	7.84	8.60	8.90	10.28
	12H	11.49	11.77	12.56	12.82	14.24	7.65	7.92	8.71	8.97	10.40
12H	4H	10.54	10.93	11.59	11.97	13.35	6.84	7.22	7.89	8.27	9.64
	6H	11.13	11.43	12.19	12.49	13.87	7.39	7.70	8.45	8.76	10.14
	8H	11.34	11.61	12.41	12.66	14.09	7.60	7.87	8.66	8.92	10.35