

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: P905408

Luminaire Tested: DFN2DIP-HX3F0-090D070US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905408
REPORT IS A COMBINATION OF REPORTS P899270 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-090D070US835-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

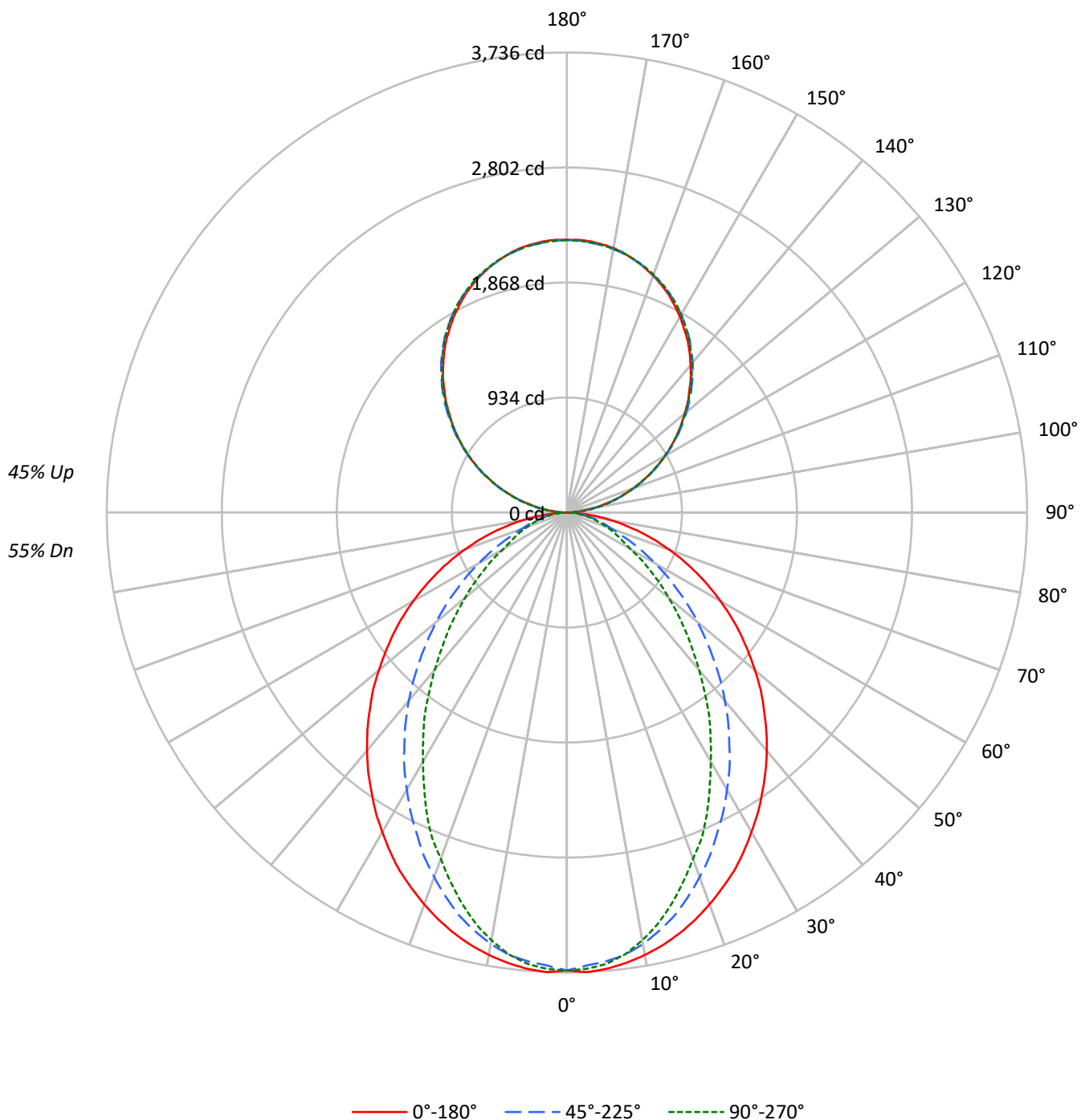
Lumens per Lamp: N/A
Luminaire Lumens: 13845.0 lumens
Efficiency: N/A
Efficacy: 94.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 146.1
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

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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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61
1	99	95	92	88	92	89	86	83	76	74	72	65	63	62	55	54	53
2	91	84	78	73	84	78	73	69	68	64	60	58	55	53	49	47	45
3	83	74	67	61	77	69	63	58	60	55	51	52	48	45	44	41	39
4	77	66	58	52	71	62	55	50	54	49	44	46	42	39	39	36	34
5	71	59	51	45	65	55	48	43	48	43	39	42	38	34	36	33	30
6	65	53	45	40	60	50	43	38	44	38	34	38	34	30	33	29	27
7	60	48	41	35	56	45	38	33	40	34	30	35	30	27	30	27	24
8	56	44	36	31	52	41	35	30	37	31	27	32	28	24	28	24	22
9	52	40	33	28	49	38	31	27	34	28	24	30	25	22	26	22	20
10	49	37	30	25	46	35	29	24	31	26	22	27	23	20	24	20	18

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

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	348.6	2.5
10°-20°	957.0	6.9
20°-30°	1343.6	9.7
30°-40°	1464.6	10.6
40°-50°	1346.2	9.7
50°-60°	1057.2	7.6
60°-70°	688.1	5.0
70°-80°	354.2	2.6
80°-90°	96.7	0.7
90°-100°	137.0	1.0
100°-110°	435.3	3.1
110°-120°	744.9	5.4
120°-130°	979.6	7.1
130°-140°	1099.6	7.9
140°-150°	1078.3	7.8
150°-160°	904.5	6.5
160°-170°	599.9	4.3
170°-180°	209.7	1.5
0°-30°	2649.2	19.1
0°-40°	4113.9	29.7
0°-60°	6517.2	47.1
0°-90°	7656.3	55.3
90°-120°	1317.2	9.5
90°-150°	4474.7	32.3
90°-180°	6189.0	44.7
0°-180°	13845.0	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°	2	24	65	61	63	14
95°	97	116	120	120	116	108
105°	402	407	411	414	414	424
115°	748	758	755	753	748	739
125°	1087	1104	1099	1093	1091	972
135°	1406	1427	1431	1429	1424	1087
145°	1707	1721	1731	1733	1726	1067
155°	1952	1958	1964	1973	1967	899
165°	2124	2122	2122	2135	2126	599
175°	2210	2204	2200	2214	2202	210
180°	2214	2214	2214	2214	2214	

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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°	2.0	24.0	65.4	61.4	63.4
92.5°	41.4	56.1	58.1	60.1	60.1
95°	97.4	116.1	119.5	119.5	116.1
97.5°	162.2	179.5	186.9	186.9	186.9
100°	236.9	252.3	257.6	257.6	255.6
102.5°	315.7	327.0	334.4	336.4	334.4
105°	401.8	407.1	411.1	414.5	414.5
107.5°	487.2	495.2	495.2	496.6	487.2
110°	570.0	580.7	580.7	580.7	575.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	659.4	670.8	668.8	663.4	659.4
115°	747.5	758.2	754.9	752.9	747.5
117.5°	834.9	849.6	840.3	834.9	829.6
120°	923.0	937.7	923.0	923.0	917.0
122.5°	1003.1	1021.8	1012.5	1007.1	1003.1
125°	1087.2	1103.9	1098.6	1092.6	1090.6
127.5°	1169.3	1190.0	1182.7	1174.7	1169.3
130°	1246.1	1270.1	1266.8	1262.8	1255.4
132.5°	1332.2	1350.9	1352.2	1342.9	1337.5
135°	1406.3	1426.9	1431.0	1428.9	1423.6
137.5°	1489.0	1505.7	1509.0	1507.7	1499.7
140°	1561.8	1578.5	1587.8	1587.8	1580.5
142.5°	1636.5	1653.2	1658.5	1660.5	1653.2
145°	1707.3	1720.6	1731.3	1733.3	1726.0
147.5°	1770.7	1787.4	1795.4	1798.7	1791.4
150°	1836.1	1847.4	1854.8	1860.8	1854.8
152.5°	1894.1	1905.5	1914.8	1922.2	1914.8
155°	1952.2	1957.5	1963.6	1972.9	1966.9
157.5°	2002.3	2006.3	2009.6	2023.0	2013.6
160°	2047.0	2051.0	2053.0	2064.3	2056.3
162.5°	2088.4	2088.4	2090.4	2103.0	2093.7
165°	2123.7	2121.7	2121.7	2135.1	2125.7
167.5°	2155.8	2149.8	2149.8	2163.1	2153.8
170°	2179.8	2174.5	2172.5	2185.8	2174.5
172.5°	2196.5	2191.1	2189.1	2202.5	2191.1
175°	2209.8	2204.5	2200.5	2213.8	2202.5
177.5°	2217.2	2211.8	2207.8	2219.2	2207.8
180°	2213.8	2213.8	2213.8	2213.8	2213.8

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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	13.53	13.58	14.47	15.66	8.63	9.51	9.55	10.44	11.64
	3H	14.33	15.11	15.26	16.06	17.28	9.82	10.61	10.75	11.55	12.77
	4H	14.94	15.68	15.88	16.62	17.85	10.27	11.01	11.22	11.96	13.19
	6H	15.35	16.04	16.31	16.99	18.23	10.59	11.27	11.55	12.22	13.47
	8H	15.48	16.13	16.44	17.09	18.33	10.68	11.33	11.64	12.30	13.54
	12H	15.54	16.15	16.51	17.12	18.38	10.72	11.34	11.69	12.30	13.57
4H	2H	12.68	13.42	13.63	14.37	15.60	9.23	9.97	10.18	10.92	12.15
	3H	14.51	15.12	15.47	16.10	17.34	10.58	11.19	11.54	12.17	13.41
	4H	15.19	15.75	16.16	16.72	17.99	11.13	11.69	12.09	12.66	13.92
	6H	15.70	16.19	16.69	17.18	18.45	11.54	12.03	12.52	13.02	14.29
	8H	15.88	16.33	16.86	17.31	18.59	11.67	12.12	12.65	13.11	14.39
	12H	15.97	16.37	16.97	17.38	18.66	11.73	12.14	12.74	13.14	14.43
8H	4H	15.16	15.61	16.15	16.60	17.88	11.41	11.86	12.39	12.84	14.12
	6H	15.72	16.09	16.73	17.12	18.40	11.92	12.29	12.93	13.32	14.60
	8H	15.93	16.26	16.95	17.28	18.58	12.11	12.43	13.12	13.45	14.75
	12H	16.07	16.36	17.09	17.37	18.71	12.22	12.51	13.24	13.52	14.87
12H	4H	15.12	15.52	16.12	16.53	17.81	11.41	11.82	12.41	12.82	14.11
	6H	15.70	16.03	16.71	17.04	18.34	11.97	12.29	12.98	13.31	14.61
	8H	15.92	16.20	16.93	17.21	18.56	12.17	12.46	13.19	13.47	14.82