

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: P906534

Luminaire Tested: DFN2DIP-SQ3F0-090D070US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906534
REPORT IS A COMBINATION OF REPORTS P899926 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-090D070US835-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

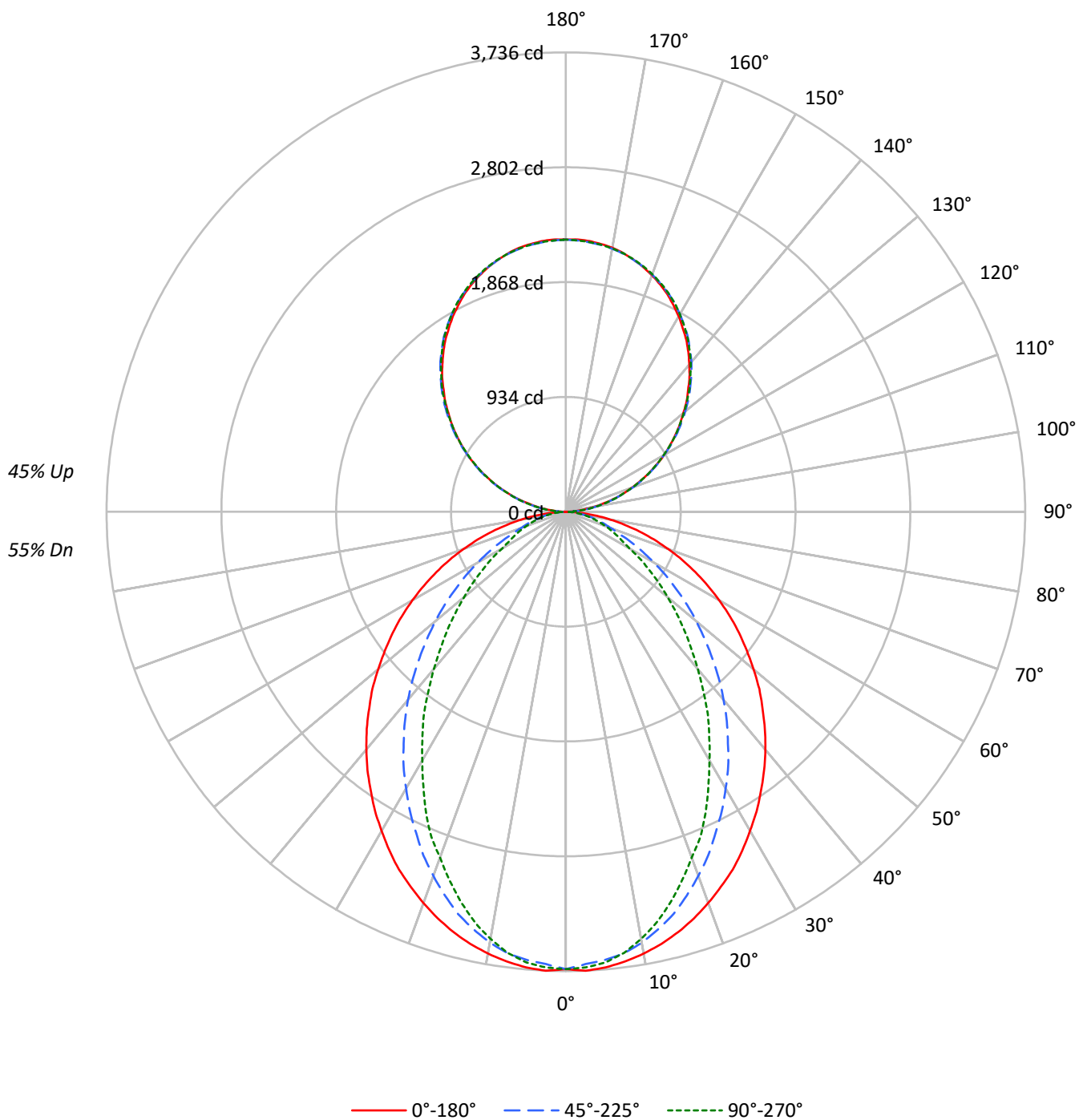
Lumens per Lamp: N/A
Luminaire Lumens: 13845.0 lumens
Efficiency: N/A
Efficacy: 98.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 140.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
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: P906534

CATALOG NUMBER: DFN2DIP-SQ3F0-090D070US835-RLLFLL

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°	4262	4262	4262
5°	4266	4192	4220
10°	4221	4107	4081
15°	4160	3968	3868
20°	4081	3778	3606
25°	3999	3566	3353
30°	3891	3349	3034
35°	3784	3116	2753
40°	3676	2874	2431
45°	3550	2607	2139
50°	3419	2338	1854
55°	3283	2050	1581
60°	3125	1750	1300
65°	2943	1445	1168
70°	2722	1161	1055
75°	2444	1017	957
80°	2042	844	825
85°	1385	550	612

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3550 cd/sqm

TEST NUMBER: P906534

CATALOG NUMBER: DFN2DIP-SQ3F0-090D070US835-RLFL

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	

TEST NUMBER: P906534

CATALOG NUMBER: DFN2DIP-SQ3F0-090D070US835-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°	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

TEST NUMBER: P906534

CATALOG NUMBER: DFN2DIP-SQ3F0-090D070US835-RLFL

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

TEST NUMBER: P906534

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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	12.63	13.51	13.55	14.44	15.63	8.59	9.47	9.51	10.40	11.59
	3H	14.31	15.09	15.24	16.03	17.25	9.78	10.56	10.71	11.50	12.72
	4H	14.91	15.65	15.86	16.60	17.83	10.22	10.96	11.17	11.91	13.14
	6H	15.33	16.02	16.29	16.97	18.21	10.54	11.22	11.50	12.17	13.42
	8H	15.46	16.11	16.42	17.08	18.32	10.63	11.28	11.59	12.25	13.49
	12H	15.52	16.14	16.49	17.10	18.36	10.67	11.29	11.64	12.25	13.51
4H	2H	12.65	13.39	13.60	14.34	15.57	9.19	9.93	10.14	10.87	12.10
	3H	14.48	15.09	15.44	16.07	17.31	10.54	11.15	11.50	12.13	13.37
	4H	15.17	15.73	16.14	16.70	17.97	11.08	11.64	12.05	12.61	13.88
	6H	15.68	16.17	16.66	17.16	18.43	11.50	11.98	12.48	12.97	14.24
	8H	15.86	16.31	16.84	17.29	18.57	11.62	12.07	12.60	13.06	14.34
	12H	15.95	16.36	16.95	17.36	18.65	11.68	12.09	12.69	13.09	14.38
8H	4H	15.14	15.59	16.12	16.58	17.86	11.36	11.81	12.34	12.80	14.08
	6H	15.70	16.07	16.71	17.10	18.38	11.87	12.24	12.88	13.27	14.55
	8H	15.92	16.24	16.93	17.26	18.56	12.06	12.39	13.07	13.40	14.70
	12H	16.05	16.34	17.07	17.35	18.69	12.17	12.46	13.19	13.47	14.82
12H	4H	15.09	15.50	16.09	16.50	17.79	11.37	11.77	12.37	12.78	14.06
	6H	15.68	16.01	16.69	17.02	18.32	11.92	12.25	12.94	13.26	14.56
	8H	15.90	16.18	16.91	17.19	18.54	12.13	12.42	13.15	13.43	14.77