

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: P906142

Luminaire Tested: DFN2DIP-PN4F0-110D080US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906142
REPORT IS A COMBINATION OF REPORTS P899696 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-110D080US835-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

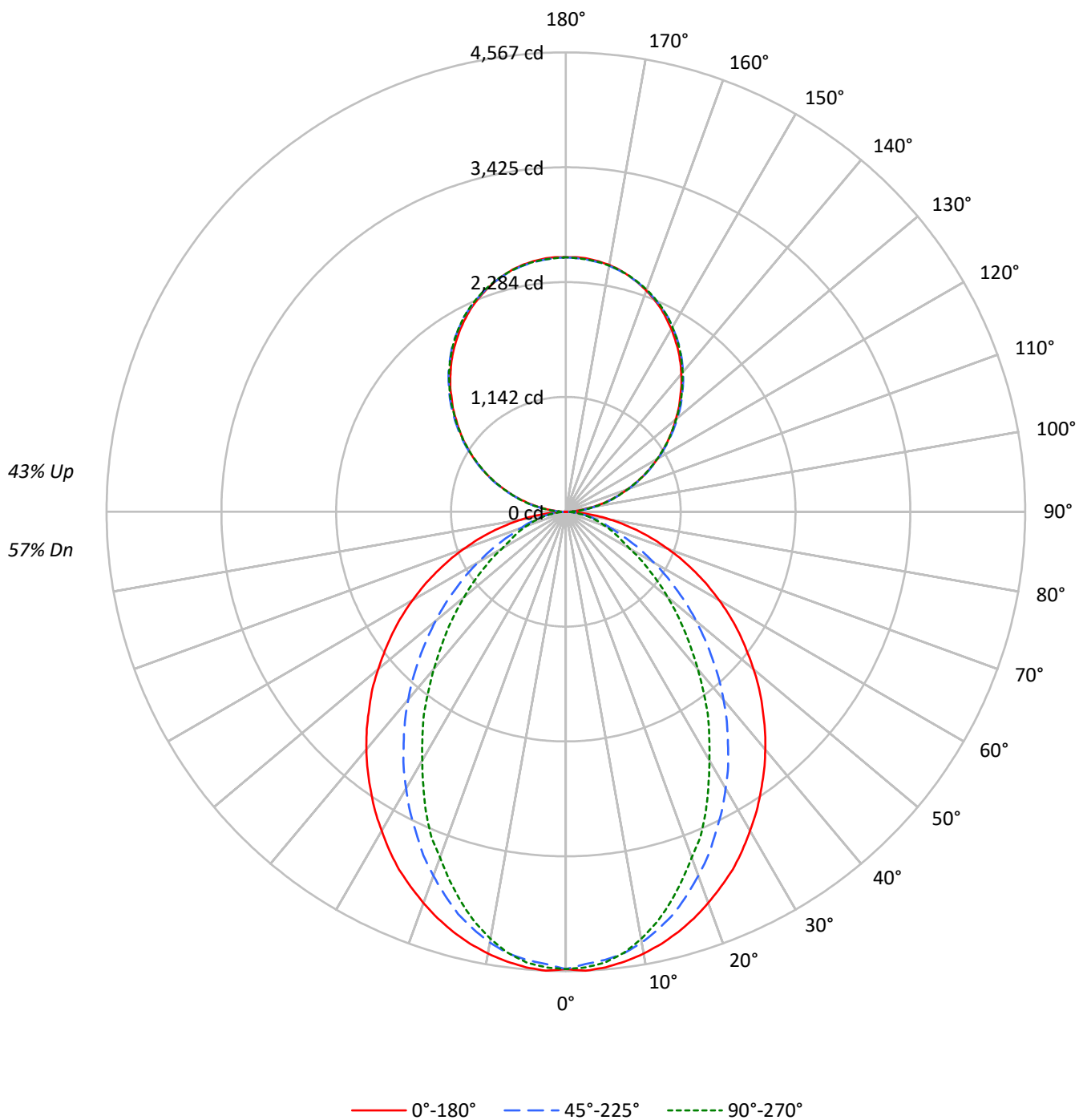
Lumens per Lamp: N/A
Luminaire Lumens: 16430.0 lumens
Efficiency: N/A
Efficacy: 95.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 172.2
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: P906142

CATALOG NUMBER: DFN2DIP-PN4F0-110D080US835-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P906142

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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	109	109	109	109		101	101	101	101		87	87	87		74	74	74		63	63	63
1	100	96	92	89		93	89	86	83		77	75	73		66	65	63		56	55	54
2	91	84	78	73		85	79	74	69		68	65	61		59	56	54		50	48	46
3	84	75	67	62		78	70	64	58		61	56	52		53	49	46		45	42	40
4	77	66	59	53		71	62	55	50		54	49	45		47	43	40		40	37	35
5	71	59	52	46		66	56	49	43		49	43	39		43	38	35		37	33	31
6	65	54	46	40		61	50	43	38		44	39	34		39	34	31		34	30	27
7	61	49	41	35		57	46	39	34		40	35	31		35	31	28		31	27	25
8	56	44	37	31		53	42	35	30		37	31	27		33	28	25		28	25	22
9	53	41	33	28		49	38	32	27		34	29	25		30	26	22		26	23	20
10	49	37	30	26		46	35	29	24		32	26	22		28	24	20		24	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3319	3319	3319
5°	3324	3266	3287
10°	3291	3203	3181
15°	3246	3097	3016
20°	3186	2952	2814
25°	3124	2789	2618
30°	3042	2621	2370
35°	2961	2441	2152
40°	2879	2255	1902
45°	2784	2048	1675
50°	2685	1840	1454
55°	2582	1616	1241
60°	2462	1383	1022
65°	2325	1146	921
70°	2159	925	834
75°	1950	816	760
80°	1647	686	662
85°	1148	460	501

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2784 cd/sqm

TEST NUMBER: P906142

CATALOG NUMBER: DFN2DIP-PN4F0-110D080US835-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	426.1	2.6
10°-20°	1169.7	7.1
20°-30°	1642.2	10.0
30°-40°	1790.1	10.9
40°-50°	1645.3	10.0
50°-60°	1292.1	7.9
60°-70°	841.1	5.1
70°-80°	432.9	2.6
80°-90°	117.7	0.7
90°-100°	156.6	1.0
100°-110°	497.5	3.0
110°-120°	851.3	5.2
120°-130°	1119.6	6.8
130°-140°	1256.7	7.6
140°-150°	1232.3	7.5
150°-160°	1033.7	6.3
160°-170°	685.6	4.2
170°-180°	239.6	1.5
0°-30°	3238.0	19.7
0°-40°	5028.1	30.6
0°-60°	7965.5	48.5
0°-90°	9357.2	57.0
90°-120°	1505.3	9.2
90°-150°	5113.9	31.1
90°-180°	7073.0	43.0
0°-180°	16430.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4546	4546	4546	4546	4546	
5°	4546	4526	4472	4509	4497	431
15°	4324	4279	4139	4061	4020	1218
25°	3925	3793	3522	3353	3291	1805
35°	3382	3172	2810	2551	2460	2117
45°	2765	2489	2057	1765	1666	2135
55°	2102	1781	1337	1090	1012	1879
65°	1420	1086	716	576	564	1407
75°	757	469	329	300	296	801
85°	177	90	78	78	78	203
90°	2	28	75	70	72	16
95°	111	133	136	136	133	124
105°	459	465	470	474	474	485
115°	854	866	863	860	854	845
125°	1242	1262	1256	1249	1246	1110
135°	1607	1631	1635	1633	1627	1242
145°	1951	1966	1979	1981	1972	1219
155°	2231	2237	2244	2255	2248	1027
165°	2427	2425	2425	2440	2429	685
175°	2526	2519	2515	2530	2517	240
180°	2530	2530	2530	2530	2530	

TEST NUMBER: P906142

CATALOG NUMBER: DFN2DIP-PN4F0-110D080US835-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4546.3	4546.3	4546.3	4546.3	4546.3
2.5°	4566.8	4546.3	4500.9	4542.4	4534.1
5°	4546.3	4525.8	4472.1	4509.2	4497.0
7.5°	4509.2	4484.7	4427.1	4443.3	4422.7
10°	4459.9	4431.0	4349.0	4336.3	4311.9
12.5°	4398.3	4361.2	4249.9	4225.4	4180.0
15°	4324.1	4278.7	4139.0	4060.9	4019.8
17.5°	4237.7	4171.8	3998.9	3908.5	3842.6
20°	4139.0	4056.5	3850.9	3748.3	3657.5
22.5°	4032.1	3937.3	3698.6	3558.9	3497.3
25°	3925.1	3793.3	3521.8	3353.3	3291.3
27.5°	3797.7	3657.5	3357.2	3163.8	3069.1
30°	3661.9	3505.2	3176.1	2966.5	2855.2
32.5°	3530.1	3340.6	3003.6	2756.6	2653.6
35°	3382.1	3172.1	2810.3	2551.0	2460.2
37.5°	3238.1	3011.5	2629.1	2344.9	2242.4
40°	3085.7	2839.1	2439.7	2147.6	2040.7
42.5°	2929.4	2666.2	2250.7	1946.0	1843.4
45°	2764.9	2489.0	2057.3	1764.8	1666.2
47.5°	2608.6	2316.6	1872.2	1579.7	1489.4
50°	2435.7	2143.7	1691.1	1406.9	1320.9
52.5°	2266.8	1958.2	1518.2	1246.7	1168.5
55°	2102.2	1781.4	1337.0	1090.4	1012.3
57.5°	1933.8	1604.6	1176.8	946.4	880.4
60°	1760.9	1431.8	1007.9	798.4	732.5
62.5°	1592.4	1263.3	863.9	666.6	633.8
65°	1419.5	1086.0	715.9	576.2	563.5
67.5°	1255.0	921.5	576.2	505.9	493.7
70°	1082.1	761.3	477.1	436.1	419.5
72.5°	917.5	612.9	399.0	366.2	357.9
75°	756.9	468.8	329.1	300.3	296.4
77.5°	596.7	333.1	259.3	242.7	234.4
80°	448.3	238.8	197.3	181.2	181.2
82.5°	312.5	160.6	135.8	127.5	127.5
85°	176.8	90.4	78.1	78.1	78.1
87.5°	65.9	32.7	32.7	28.8	28.8
90°	2.3	27.5	74.8	70.2	72.5
92.5°	47.3	64.1	66.4	68.6	68.6
95°	111.4	132.7	136.5	136.5	132.7
97.5°	185.4	205.2	213.6	213.6	213.6
100°	270.8	288.3	294.4	294.4	292.1
102.5°	360.8	373.8	382.1	384.4	382.1
105°	459.2	465.3	469.9	473.7	473.7
107.5°	556.8	566.0	566.0	567.5	556.8
110°	651.4	663.6	663.6	663.6	657.5

TEST NUMBER: P906142

CATALOG NUMBER: DFN2DIP-PN4F0-110D080US835-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	753.6	766.6	764.3	758.2	753.6
115°	854.3	866.5	862.7	860.4	854.3
117.5°	954.2	971.0	960.3	954.2	948.1
120°	1054.9	1071.7	1054.9	1054.9	1048.0
122.5°	1146.4	1167.8	1157.1	1151.0	1146.4
125°	1242.5	1261.6	1255.5	1248.6	1246.4
127.5°	1336.4	1360.0	1351.6	1342.5	1336.4
130°	1424.1	1451.5	1447.7	1443.2	1434.8
132.5°	1522.5	1543.8	1545.4	1534.7	1528.6
135°	1607.1	1630.8	1635.4	1633.1	1627.0
137.5°	1701.7	1720.8	1724.6	1723.1	1713.9
140°	1784.9	1803.9	1814.6	1814.6	1806.2
142.5°	1870.3	1889.4	1895.5	1897.8	1889.4
145°	1951.2	1966.4	1978.6	1980.9	1972.5
147.5°	2023.6	2042.7	2051.8	2055.7	2047.3
150°	2098.4	2111.3	2119.7	2126.6	2119.7
152.5°	2164.7	2177.7	2188.4	2196.8	2188.4
155°	2231.1	2237.2	2244.1	2254.7	2247.9
157.5°	2288.3	2292.9	2296.7	2311.9	2301.3
160°	2339.4	2344.0	2346.3	2359.2	2350.1
162.5°	2386.7	2386.7	2389.0	2403.5	2392.8
165°	2427.1	2424.8	2424.8	2440.1	2429.4
167.5°	2463.7	2456.9	2456.9	2472.1	2461.4
170°	2491.2	2485.1	2482.8	2498.1	2485.1
172.5°	2510.3	2504.2	2501.9	2517.1	2504.2
175°	2525.5	2519.4	2514.8	2530.1	2517.1
177.5°	2533.9	2527.8	2523.2	2536.2	2523.2
180°	2530.1	2530.1	2530.1	2530.1	2530.1

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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	11.95	12.84	12.85	13.75	14.92	7.91	8.80	8.81	9.72	10.89
	3H	13.63	14.43	14.55	15.35	16.55	9.11	9.90	10.02	10.83	12.02
	4H	14.24	15.00	15.17	15.93	17.13	9.56	10.31	10.49	11.24	12.45
	6H	14.67	15.36	15.61	16.30	17.52	9.88	10.58	10.82	11.51	12.73
	8H	14.80	15.46	15.75	16.41	17.63	9.98	10.63	10.92	11.59	12.81
	12H	14.87	15.49	15.82	16.44	17.68	10.02	10.65	10.98	11.60	12.84
4H	2H	11.97	12.72	12.91	13.66	14.86	8.52	9.27	9.45	10.20	11.40
	3H	13.81	14.43	14.75	15.40	16.62	9.87	10.50	10.82	11.46	12.68
	4H	14.51	15.08	15.46	16.03	17.28	10.42	10.99	11.38	11.95	13.19
	6H	15.03	15.52	16.00	16.50	17.74	10.85	11.34	11.81	12.32	13.56
	8H	15.21	15.66	16.17	16.64	17.90	10.98	11.44	11.95	12.41	13.67
	12H	15.31	15.72	16.29	16.71	17.97	11.05	11.46	12.03	12.45	13.71
8H	4H	14.48	14.94	15.45	15.91	17.17	10.71	11.17	11.68	12.14	13.40
	6H	15.05	15.43	16.04	16.44	17.70	11.23	11.61	12.23	12.63	13.88
	8H	15.27	15.60	16.27	16.61	17.88	11.42	11.76	12.43	12.76	14.04
	12H	15.41	15.71	16.42	16.70	18.02	11.55	11.84	12.55	12.84	14.16
12H	4H	14.43	14.85	15.42	15.84	17.10	10.72	11.13	11.71	12.12	13.38
	6H	15.03	15.36	16.03	16.36	17.64	11.28	11.62	12.28	12.62	13.89
	8H	15.25	15.54	16.26	16.54	17.86	11.50	11.79	12.50	12.79	14.11