

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: P919962

Luminaire Tested: DFN2DIP-SQ2F0-080D040US935-RLLFLL

Issue Date: 11/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P919962  
REPORT IS A COMBINATION OF REPORTS P899794 AND P896659  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ2F0-080D040US935-RLLFLL  
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

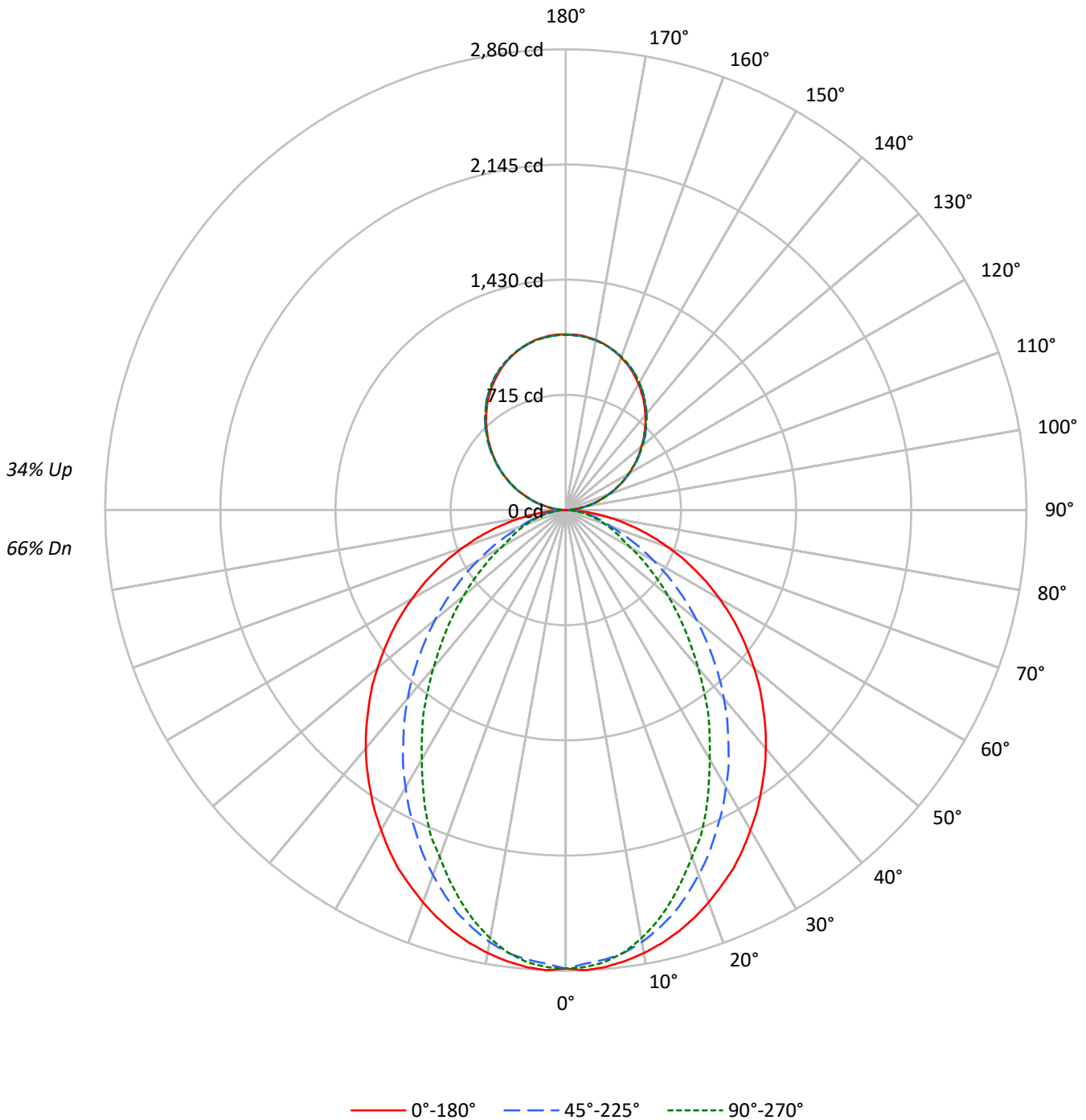
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8902.7 lumens  
Efficiency: N/A  
Efficacy: 82.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')  
CIE Type: Semi-Direct

Input Watts (W): 108.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9957  
Total Harmonic Distortion (THDi): 0.049  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P919962  
CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US935-RLFL

### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				20	
RC	80				70				50				30				10				0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71	66				66
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61	57				57
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52	49				49
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45	42				42
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40	36				36
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35	32				32
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31	29				29
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28	26				26
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25	23				23
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23	21				21
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21	19				19

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	6260	6260	6260
5°	6259	6147	6191
10°	6186	6013	5981
15°	6090	5801	5662
20°	5967	5514	5273
25°	5840	5196	4897
30°	5674	4870	4424
35°	5511	4521	4008
40°	5344	4162	3534
45°	5151	3765	3104
50°	4951	3366	2685
55°	4741	2941	2283
60°	4497	2499	1871
65°	4216	2051	1673
70°	3875	1634	1502
75°	3446	1414	1349
80°	2829	1149	1143
85°	1842	713	813

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5151 cd/sqm



TEST NUMBER: P919962

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US935-RLFL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	266.8	3.0
10°-20°	732.4	8.2
20°-30°	1028.3	11.6
30°-40°	1120.9	12.6
40°-50°	1030.3	11.6
50°-60°	809.1	9.1
60°-70°	526.6	5.9
70°-80°	271.1	3.0
80°-90°	72.3	0.8
90°-100°	67.4	0.8
100°-110°	214.2	2.4
110°-120°	366.5	4.1
120°-130°	482.0	5.4
130°-140°	541.0	6.1
140°-150°	530.5	6.0
150°-160°	445.0	5.0
160°-170°	295.1	3.3
170°-180°	103.2	1.2
0°-30°	2027.6	22.8
0°-40°	3148.5	35.4
0°-60°	4987.8	56.0
0°-90°	5857.9	65.8
90°-120°	648.0	7.3
90°-150°	2201.5	24.7
90°-180°	3045.0	34.2
0°-180°	8902.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2847	2847	2847	2847	2847	
5°	2847	2834	2800	2824	2816	270
15°	2708	2679	2592	2543	2517	763
25°	2458	2375	2205	2100	2061	1130
35°	2118	1986	1760	1597	1540	1326
45°	1731	1559	1288	1105	1043	1337
55°	1316	1116	837	683	634	1176
65°	889	680	448	361	353	881
75°	474	294	206	188	186	501
85°	111	57	49	49	49	127
90°	1	12	32	30	31	9
95°	48	57	59	59	57	53
105°	198	200	202	204	204	209
115°	368	373	371	370	368	364
125°	535	543	540	538	537	478
135°	692	702	704	703	700	535
145°	840	846	852	853	849	525
155°	960	963	966	971	968	442
165°	1045	1044	1044	1050	1046	295
175°	1087	1085	1083	1089	1084	103
180°	1089	1089	1089	1089	1089	



TEST NUMBER: P919962

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US935-RLFL

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2846.8	2846.8	2846.8	2846.8	2846.8
2.5°	2859.6	2846.8	2818.4	2844.3	2839.1
5°	2846.8	2834.0	2800.3	2823.6	2815.9
7.5°	2823.6	2808.2	2772.2	2782.3	2769.4
10°	2792.6	2774.7	2723.3	2715.3	2700.0
12.5°	2754.2	2730.9	2661.2	2645.8	2617.4
15°	2707.7	2679.3	2591.8	2542.9	2517.1
17.5°	2653.5	2612.3	2504.0	2447.5	2406.1
20°	2591.8	2540.1	2411.4	2347.2	2290.3
22.5°	2524.8	2465.5	2316.0	2228.5	2189.9
25°	2457.8	2375.3	2205.3	2099.8	2061.0
27.5°	2378.0	2290.3	2102.2	1981.2	1921.8
30°	2293.0	2194.9	1988.8	1857.6	1787.9
32.5°	2210.4	2091.9	1880.8	1726.1	1661.6
35°	2117.8	1986.3	1759.7	1597.4	1540.5
37.5°	2027.6	1885.8	1646.3	1468.3	1404.1
40°	1932.3	1777.8	1527.7	1344.8	1277.8
42.5°	1834.4	1669.6	1409.3	1218.6	1154.3
45°	1731.3	1558.6	1288.2	1105.1	1043.4
47.5°	1633.5	1450.6	1172.3	989.2	932.6
50°	1525.2	1342.4	1058.9	881.0	827.1
52.5°	1419.4	1226.1	950.6	780.7	731.8
55°	1316.4	1115.5	837.2	682.8	633.9
57.5°	1210.9	1004.8	736.9	592.6	551.3
60°	1102.6	896.6	631.1	499.9	458.7
62.5°	997.1	791.0	541.0	417.4	396.9
65°	888.9	680.0	448.2	360.8	352.8
67.5°	785.8	577.0	360.8	316.8	309.2
70°	677.6	476.7	298.8	273.0	262.7
72.5°	574.5	383.7	249.9	229.4	224.1
75°	474.0	293.6	206.1	188.0	185.6
77.5°	373.7	208.5	162.4	152.0	146.8
80°	280.7	149.6	123.6	113.4	113.4
82.5°	195.7	100.6	85.0	79.8	79.8
85°	110.7	56.6	48.9	48.9	48.9
87.5°	41.2	20.5	20.5	18.1	18.1
90°	0.9	11.8	32.2	30.2	31.2
92.5°	20.3	27.6	28.6	29.5	29.5
95°	48.0	57.2	58.8	58.8	57.2
97.5°	79.8	88.3	92.0	92.0	92.0
100°	116.6	124.2	126.7	126.7	125.8
102.5°	155.3	160.9	164.5	165.5	164.5
105°	197.7	200.3	202.2	203.9	203.9
107.5°	239.7	243.7	243.7	244.3	239.7
110°	280.4	285.7	285.7	285.7	283.1



TEST NUMBER: P919962

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US935-RLFL

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	324.4	330.0	329.0	326.4	324.4
115°	367.7	373.1	371.3	370.4	367.7
117.5°	410.8	418.0	413.5	410.8	408.2
120°	454.2	461.3	454.2	454.2	451.2
122.5°	493.5	502.7	498.2	495.5	493.5
125°	534.9	543.1	540.5	537.5	536.6
127.5°	575.3	585.5	581.9	577.9	575.3
130°	613.0	624.9	623.3	621.3	617.7
132.5°	655.4	664.6	665.3	660.6	658.1
135°	691.9	702.1	704.0	703.0	700.4
137.5°	732.6	740.8	742.4	741.7	737.9
140°	768.4	776.6	781.2	781.2	777.6
142.5°	805.2	813.4	816.0	817.0	813.4
145°	840.0	846.5	851.8	852.8	849.2
147.5°	871.2	879.3	883.3	884.9	881.3
150°	903.4	909.0	912.6	915.5	912.6
152.5°	931.9	937.5	942.1	945.7	942.1
155°	960.4	963.1	966.0	970.7	967.7
157.5°	985.2	987.0	988.7	995.3	990.7
160°	1007.1	1009.1	1010.0	1015.6	1011.7
162.5°	1027.4	1027.4	1028.5	1034.7	1030.1
165°	1044.9	1043.9	1043.9	1050.4	1045.9
167.5°	1060.7	1057.6	1057.6	1064.3	1059.6
170°	1072.5	1069.8	1068.8	1075.4	1069.8
172.5°	1080.6	1078.1	1077.0	1083.7	1078.1
175°	1087.3	1084.6	1082.6	1089.2	1083.7
177.5°	1090.9	1088.2	1086.2	1091.8	1086.2
180°	1089.2	1089.2	1089.2	1089.2	1089.2



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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	14.76	15.74	15.58	16.58	17.61	10.73	11.70	11.54	12.54	13.57
	3H	16.43	17.31	17.26	18.15	19.21	11.91	12.78	12.74	13.63	14.68
	4H	17.04	17.86	17.88	18.71	19.78	12.35	13.18	13.20	14.03	15.10
	6H	17.45	18.21	18.31	19.07	20.15	12.66	13.42	13.52	14.28	15.36
	8H	17.57	18.29	18.44	19.17	20.25	12.75	13.47	13.62	14.35	15.43
	12H	17.63	18.32	18.50	19.19	20.29	12.79	13.48	13.66	14.35	15.45
4H	2H	14.80	15.62	15.65	16.47	17.54	11.33	12.15	12.18	13.00	14.07
	3H	16.62	17.30	17.48	18.18	19.27	12.67	13.36	13.53	14.24	15.32
	4H	17.30	17.92	18.17	18.80	19.91	13.21	13.83	14.08	14.71	15.82
	6H	17.80	18.34	18.69	19.24	20.36	13.62	14.15	14.51	15.06	16.17
	8H	17.97	18.47	18.86	19.37	20.50	13.74	14.24	14.63	15.14	16.26
	12H	18.06	18.51	18.97	19.43	20.56	13.80	14.25	14.71	15.17	16.30
8H	4H	17.27	17.77	18.16	18.67	19.80	13.49	13.99	14.38	14.89	16.01
	6H	17.82	18.24	18.74	19.18	20.30	13.99	14.40	14.91	15.34	16.47
	8H	18.03	18.39	18.96	19.33	20.47	14.16	14.53	15.09	15.47	16.61
	12H	18.16	18.48	19.09	19.41	20.60	14.28	14.60	15.21	15.52	16.72
12H	4H	17.23	17.68	18.14	18.60	19.73	13.50	13.95	14.41	14.87	16.00
	6H	17.80	18.16	18.73	19.10	20.24	14.03	14.40	14.96	15.33	16.48
	8H	18.01	18.33	18.94	19.26	20.45	14.23	14.56	15.16	15.48	16.68