

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: P925758

Luminaire Tested: DFN2DIP-SQ3F0-120D120US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925758
REPORT IS A COMBINATION OF REPORTS P900022 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D120US950-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

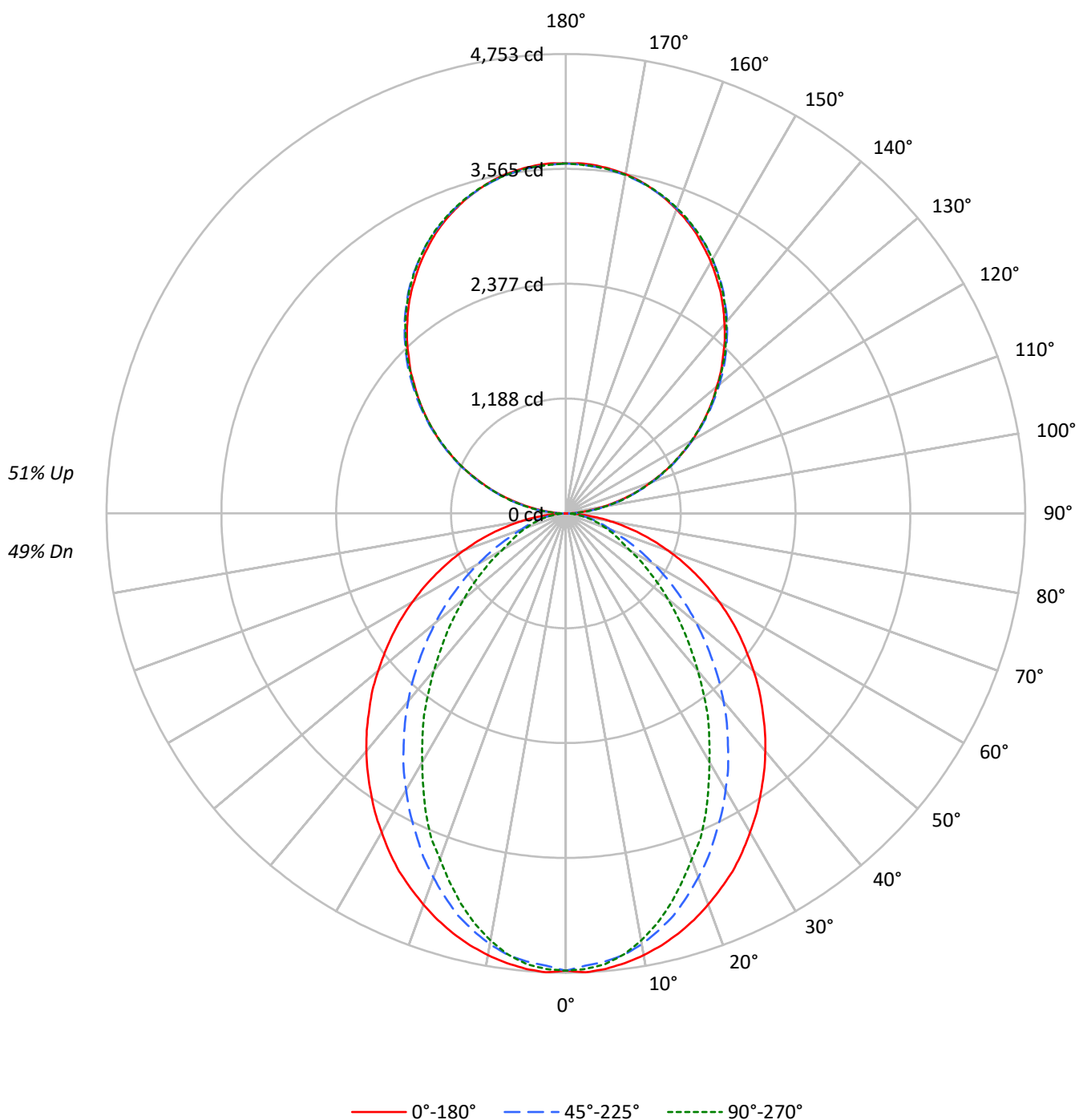
Lumens per Lamp: N/A
Luminaire Lumens: 19862.3 lumens
Efficiency: N/A
Efficacy: 90.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 219.9
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: P925758

CATALOG NUMBER: DFN2DIP-SQ3F0-120D120US950-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P925758

CATALOG NUMBER: DFN2DIP-SQ3F0-120D120US950-RLLFLL

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°	5421	5421	5421
5°	5427	5332	5368
10°	5369	5224	5191
15°	5292	5047	4920
20°	5191	4806	4587
25°	5087	4536	4266
30°	4949	4260	3859
35°	4814	3963	3501
40°	4675	3656	3092
45°	4515	3316	2721
50°	4350	2974	2359
55°	4176	2608	2011
60°	3975	2226	1653
65°	3744	1838	1486
70°	3463	1476	1342
75°	3109	1294	1217
80°	2598	1074	1050
85°	1762	700	778

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4515 cd/sqm

TEST NUMBER: P925758

CATALOG NUMBER: DFN2DIP-SQ3F0-120D120US950-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	443.4	2.2
10°-20°	1217.3	6.1
20°-30°	1709.1	8.6
30°-40°	1863.0	9.4
40°-50°	1712.3	8.6
50°-60°	1344.7	6.8
60°-70°	875.3	4.4
70°-80°	450.6	2.3
80°-90°	125.3	0.6
90°-100°	224.0	1.1
100°-110°	711.8	3.6
110°-120°	1218.2	6.1
120°-130°	1602.1	8.1
130°-140°	1798.3	9.1
140°-150°	1763.5	8.9
150°-160°	1479.3	7.4
160°-170°	981.0	4.9
170°-180°	342.9	1.7
0°-30°	3369.8	17.0
0°-40°	5232.8	26.3
0°-60°	8289.9	41.7
0°-90°	9741.1	49.0
90°-120°	2154.1	10.8
90°-150°	7318.0	36.8
90°-180°	10121.0	51.0
0°-180°	19862.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4732	4732	4732	4732	4732	
5°	4732	4710	4654	4693	4680	449
15°	4500	4453	4308	4226	4184	1268
25°	4085	3948	3665	3490	3425	1879
35°	3520	3301	2925	2655	2560	2203
45°	2878	2590	2141	1837	1734	2222
55°	2188	1854	1392	1135	1054	1955
65°	1477	1130	745	600	586	1465
75°	788	488	343	312	308	833
85°	184	94	81	81	81	211
90°	3	39	107	100	104	20
95°	159	190	195	195	190	177
105°	657	666	672	678	678	693
115°	1222	1240	1234	1231	1222	1209
125°	1778	1805	1797	1787	1784	1589
135°	2300	2334	2340	2337	2328	1778
145°	2792	2814	2831	2835	2823	1745
155°	3193	3201	3211	3226	3217	1470
165°	3473	3470	3470	3492	3476	980
175°	3614	3605	3599	3620	3602	343
180°	3620	3620	3620	3620	3620	

TEST NUMBER: P925758

CATALOG NUMBER: DFN2DIP-SQ3F0-120D120US950-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4731.5	4731.5	4731.5	4731.5	4731.5
2.5°	4752.8	4731.5	4684.2	4727.4	4718.7
5°	4731.5	4710.1	4654.2	4692.8	4680.1
7.5°	4692.8	4667.3	4607.4	4624.2	4602.9
10°	4641.5	4611.5	4526.1	4512.9	4487.5
12.5°	4577.4	4538.8	4422.9	4397.6	4350.3
15°	4500.2	4453.0	4307.6	4226.2	4183.6
17.5°	4410.2	4341.7	4161.7	4067.8	3999.2
20°	4307.6	4221.7	4007.8	3901.0	3806.5
22.5°	4196.3	4097.7	3849.2	3703.8	3639.8
25°	4085.0	3947.7	3665.2	3489.8	3425.3
27.5°	3952.3	3806.5	3493.9	3292.7	3194.1
30°	3811.0	3648.0	3305.4	3087.3	2971.5
32.5°	3673.9	3476.7	3126.0	2868.9	2761.6
35°	3519.9	3301.3	2924.7	2654.9	2560.3
37.5°	3369.9	3134.2	2736.2	2440.4	2333.7
40°	3211.4	2954.7	2539.1	2235.1	2123.8
42.5°	3048.7	2774.8	2342.4	2025.2	1918.5
45°	2877.5	2590.4	2141.1	1836.7	1734.0
47.5°	2714.8	2410.9	1948.4	1644.1	1550.1
50°	2535.0	2231.0	1759.9	1464.2	1374.7
52.5°	2359.1	2037.9	1580.0	1297.4	1216.2
55°	2187.9	1854.0	1391.5	1134.8	1053.5
57.5°	2012.5	1670.0	1224.7	984.9	916.3
60°	1832.6	1490.1	1048.9	830.9	762.3
62.5°	1657.3	1314.7	899.0	693.7	659.6
65°	1477.4	1130.3	745.1	599.7	586.5
67.5°	1306.1	959.0	599.7	526.5	513.8
70°	1126.2	792.3	496.6	453.8	436.6
72.5°	955.0	637.8	415.2	381.1	372.5
75°	787.7	487.9	342.6	312.5	308.4
77.5°	621.1	346.6	269.9	252.6	243.9
80°	466.6	248.5	205.3	188.5	188.5
82.5°	325.3	167.1	141.3	132.6	132.6
85°	184.0	94.1	81.3	81.3	81.3
87.5°	68.6	34.1	34.1	30.0	30.0
90°	3.2	39.3	106.9	100.5	103.7
92.5°	67.6	91.7	94.9	98.3	98.3
95°	159.3	189.9	195.4	195.4	189.9
97.5°	265.2	293.6	305.7	305.7	305.7
100°	387.5	412.6	421.3	421.3	418.0
102.5°	516.3	534.8	546.8	550.2	546.8
105°	657.1	665.8	672.4	677.8	677.8
107.5°	796.8	809.9	809.9	812.0	796.8
110°	932.2	949.6	949.6	949.6	940.9

TEST NUMBER: P925758

CATALOG NUMBER: DFN2DIP-SQ3F0-120D120US950-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1078.4	1097.0	1093.7	1085.0	1078.4
115°	1222.5	1240.0	1234.5	1231.2	1222.5
117.5°	1365.5	1389.5	1374.2	1365.5	1356.8
120°	1509.6	1533.6	1509.6	1509.6	1499.8
122.5°	1640.6	1671.1	1655.9	1647.1	1640.6
125°	1778.1	1805.3	1796.7	1786.8	1783.5
127.5°	1912.4	1946.2	1934.1	1921.1	1912.4
130°	2037.8	2077.1	2071.7	2065.1	2053.1
132.5°	2178.6	2209.3	2211.4	2196.1	2187.4
135°	2299.8	2333.7	2340.3	2336.9	2328.2
137.5°	2435.2	2462.5	2467.9	2465.7	2452.6
140°	2554.1	2581.4	2596.7	2596.7	2584.7
142.5°	2676.4	2703.7	2712.4	2715.7	2703.7
145°	2792.1	2813.9	2831.4	2834.7	2822.7
147.5°	2895.8	2923.1	2936.2	2941.7	2929.6
150°	3002.8	3021.3	3033.3	3043.2	3033.3
152.5°	3097.7	3116.2	3131.6	3143.6	3131.6
155°	3192.7	3201.4	3211.3	3226.5	3216.7
157.5°	3274.6	3281.1	3286.5	3308.4	3293.1
160°	3347.7	3354.3	3357.5	3376.1	3362.9
162.5°	3415.3	3415.3	3418.7	3439.4	3424.1
165°	3473.2	3470.0	3470.0	3491.7	3476.5
167.5°	3525.6	3515.8	3515.8	3537.6	3522.4
170°	3564.9	3556.1	3552.9	3574.7	3556.1
172.5°	3592.2	3583.4	3580.2	3602.0	3583.4
175°	3614.0	3605.3	3598.8	3620.5	3602.0
177.5°	3626.1	3617.3	3610.7	3629.3	3610.7
180°	3620.5	3620.5	3620.5	3620.5	3620.5

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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	12.89	13.72	13.87	14.70	15.99	8.85	9.68	9.83	10.66	11.95
	3H	14.57	15.30	15.55	16.29	17.60	10.04	10.77	11.02	11.76	13.07
	4H	15.17	15.87	16.17	16.86	18.18	10.48	11.18	11.48	12.17	13.49
	6H	15.59	16.23	16.60	17.23	18.56	10.80	11.44	11.80	12.44	13.77
	8H	15.71	16.32	16.73	17.34	18.66	10.88	11.49	11.90	12.51	13.83
	12H	15.77	16.35	16.79	17.36	18.71	10.92	11.50	11.94	12.51	13.86
4H	2H	12.91	13.60	13.91	14.60	15.92	9.45	10.14	10.45	11.14	12.45
	3H	14.73	15.31	15.74	16.33	17.67	10.79	11.37	11.80	12.39	13.72
	4H	15.42	15.95	16.44	16.96	18.32	11.33	11.86	12.35	12.87	14.23
	6H	15.93	16.38	16.96	17.42	18.78	11.74	12.20	12.77	13.24	14.59
	8H	16.10	16.53	17.13	17.56	18.92	11.87	12.29	12.90	13.32	14.69
	12H	16.20	16.58	17.24	17.62	19.00	11.93	12.31	12.98	13.36	14.73
8H	4H	15.39	15.81	16.42	16.84	18.21	11.61	12.03	12.64	13.06	14.43
	6H	15.95	16.30	17.00	17.37	18.73	12.12	12.47	13.17	13.54	14.90
	8H	16.16	16.47	17.22	17.53	18.91	12.30	12.61	13.36	13.67	15.05
	12H	16.29	16.57	17.36	17.62	19.04	12.42	12.69	13.48	13.74	15.17
12H	4H	15.34	15.72	16.39	16.77	18.14	11.61	11.99	12.66	13.04	14.41
	6H	15.92	16.23	16.98	17.29	18.67	12.16	12.47	13.23	13.53	14.91
	8H	16.14	16.41	17.20	17.46	18.89	12.37	12.64	13.43	13.69	15.12