

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: P906662

Luminaire Tested: DFN2DIP-SQ3F0-120D120US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906662
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-SQ3F0-120D120US835-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

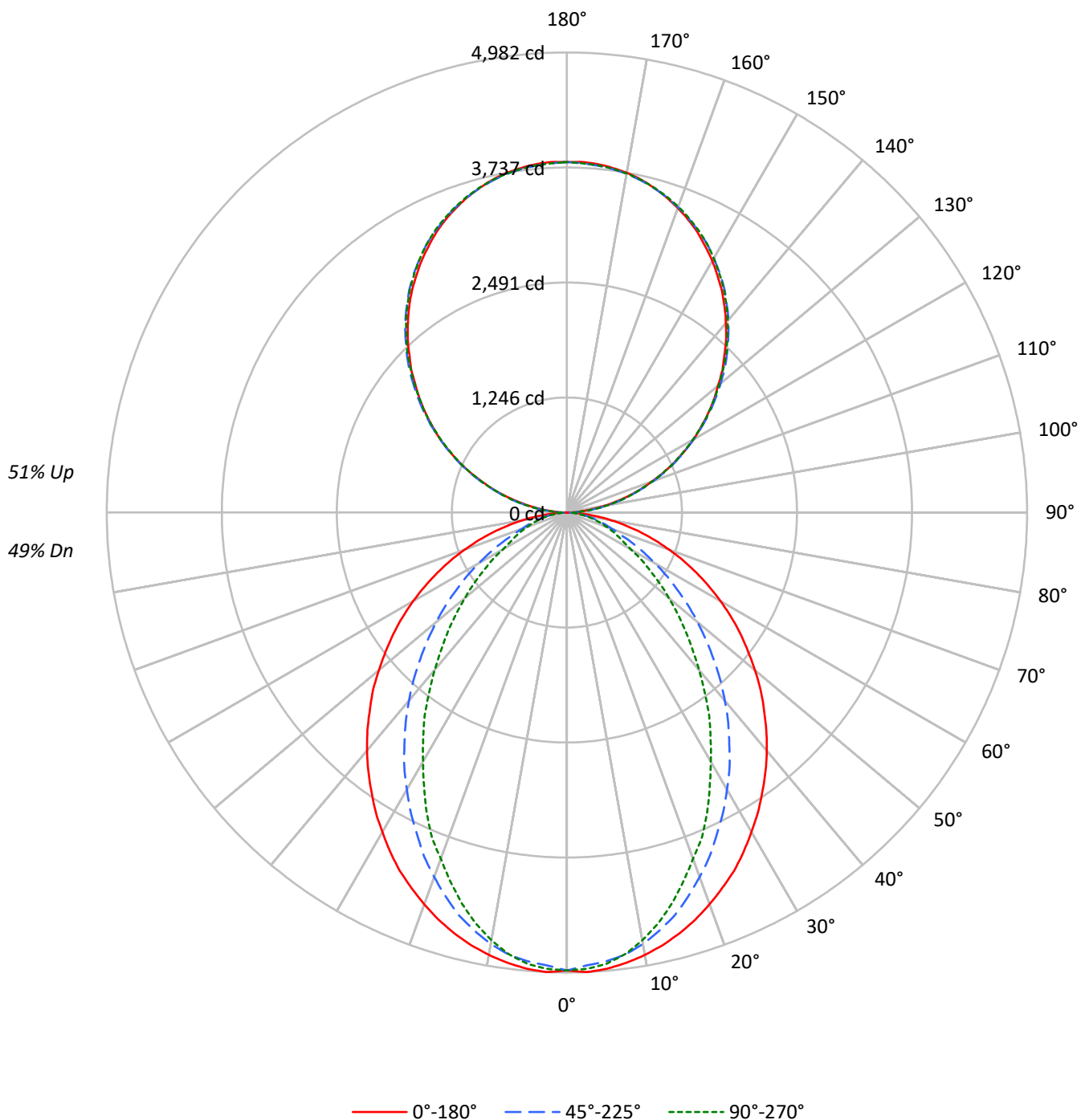
Lumens per Lamp: N/A
Luminaire Lumens: 20820.0 lumens
Efficiency: N/A
Efficacy: 94.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 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

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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	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°	5683	5683	5683
5°	5688	5589	5626
10°	5628	5475	5442
15°	5547	5291	5157
20°	5441	5038	4808
25°	5332	4755	4471
30°	5188	4465	4045
35°	5046	4154	3670
40°	4901	3833	3241
45°	4733	3476	2852
50°	4559	3117	2473
55°	4377	2734	2108
60°	4167	2333	1733
65°	3924	1927	1558
70°	3629	1548	1407
75°	3259	1356	1276
80°	2723	1125	1100
85°	1847	733	816

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4733 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	464.8	2.2
10°-20°	1276.0	6.1
20°-30°	1791.5	8.6
30°-40°	1952.8	9.4
40°-50°	1794.9	8.6
50°-60°	1409.6	6.8
60°-70°	917.5	4.4
70°-80°	472.3	2.3
80°-90°	131.3	0.6
90°-100°	234.8	1.1
100°-110°	746.2	3.6
110°-120°	1276.9	6.1
120°-130°	1679.4	8.1
130°-140°	1885.0	9.1
140°-150°	1848.5	8.9
150°-160°	1550.6	7.4
160°-170°	1028.3	4.9
170°-180°	359.4	1.7
0°-30°	3532.3	17.0
0°-40°	5485.2	26.3
0°-60°	8689.6	41.7
0°-90°	10210.8	49.0
90°-120°	2257.9	10.8
90°-150°	7670.8	36.8
90°-180°	10609.0	51.0
0°-180°	20820.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4960	4960	4960	4960	4960	
5°	4960	4937	4879	4919	4906	470
15°	4717	4668	4515	4430	4385	1329
25°	4282	4138	3842	3658	3590	1969
35°	3690	3460	3066	2783	2684	2309
45°	3016	2715	2244	1925	1818	2329
55°	2293	1943	1459	1190	1104	2049
65°	1549	1185	781	629	615	1535
75°	826	511	359	328	323	873
85°	193	99	85	85	85	221
90°	3	41	112	105	109	21
95°	167	199	205	205	199	186
105°	689	698	705	710	710	727
115°	1281	1300	1294	1291	1281	1267
125°	1864	1892	1883	1873	1870	1666
135°	2411	2446	2453	2450	2440	1863
145°	2927	2950	2968	2971	2959	1829
155°	3347	3356	3366	3382	3372	1540
165°	3641	3637	3637	3660	3644	1027
175°	3788	3779	3772	3795	3776	360
180°	3795	3795	3795	3795	3795	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4959.6	4959.6	4959.6	4959.6	4959.6
2.5°	4982.0	4959.6	4910.1	4955.3	4946.2
5°	4959.6	4937.2	4878.6	4919.1	4905.8
7.5°	4919.1	4892.4	4829.6	4847.2	4824.8
10°	4865.3	4833.9	4744.3	4730.5	4703.9
12.5°	4798.1	4757.7	4636.2	4609.6	4560.1
15°	4717.2	4667.7	4515.3	4430.0	4385.3
17.5°	4622.9	4551.0	4362.4	4263.9	4192.0
20°	4515.3	4425.3	4201.0	4089.1	3990.0
22.5°	4398.6	4295.3	4034.8	3882.4	3815.3
25°	4282.0	4138.1	3841.9	3658.1	3590.5
27.5°	4142.9	3990.0	3662.4	3451.5	3348.1
30°	3994.8	3823.9	3464.8	3236.2	3114.8
32.5°	3851.0	3644.3	3276.7	3007.2	2894.8
35°	3689.6	3460.5	3065.7	2782.9	2683.8
37.5°	3532.4	3285.3	2868.1	2558.1	2446.2
40°	3366.2	3097.2	2661.5	2342.9	2226.2
42.5°	3195.7	2908.6	2455.3	2122.9	2011.0
45°	3016.2	2715.3	2244.3	1925.3	1817.6
47.5°	2845.7	2527.2	2042.4	1723.4	1624.8
50°	2657.2	2338.6	1844.8	1534.8	1441.0
52.5°	2472.9	2136.2	1656.2	1360.0	1274.8
55°	2293.4	1943.4	1458.6	1189.5	1104.3
57.5°	2109.5	1750.5	1283.8	1032.4	960.5
60°	1921.0	1561.9	1099.5	871.0	799.1
62.5°	1737.2	1378.1	942.4	727.2	691.4
65°	1548.6	1184.8	781.0	628.6	614.8
67.5°	1369.1	1005.2	628.6	551.9	538.6
70°	1180.5	830.5	520.5	475.7	457.6
72.5°	1001.0	668.6	435.2	399.5	390.5
75°	825.7	511.4	359.1	327.6	323.3
77.5°	651.0	363.3	282.9	264.8	255.7
80°	489.1	260.5	215.2	197.6	197.6
82.5°	341.0	175.2	148.1	139.0	139.0
85°	192.9	98.6	85.2	85.2	85.2
87.5°	71.9	35.7	35.7	31.4	31.4
90°	3.4	41.2	112.1	105.3	108.7
92.5°	70.9	96.1	99.5	103.0	103.0
95°	167.0	199.1	204.8	204.8	199.1
97.5°	278.0	307.8	320.4	320.4	320.4
100°	406.2	432.5	441.6	441.6	438.2
102.5°	541.2	560.6	573.2	576.7	573.2
105°	688.8	697.9	704.8	710.5	710.5
107.5°	835.2	849.0	849.0	851.2	835.2
110°	977.1	995.4	995.4	995.4	986.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1130.4	1149.9	1146.4	1137.3	1130.4
115°	1281.4	1299.8	1294.0	1290.6	1281.4
117.5°	1431.3	1456.5	1440.5	1431.3	1422.2
120°	1582.4	1607.5	1582.4	1582.4	1572.1
122.5°	1719.7	1751.7	1735.7	1726.5	1719.7
125°	1863.8	1892.4	1883.3	1873.0	1869.5
127.5°	2004.6	2040.0	2027.4	2013.7	2004.6
130°	2136.1	2177.3	2171.6	2164.7	2152.1
132.5°	2283.7	2315.8	2318.0	2302.0	2292.9
135°	2410.7	2446.2	2453.1	2449.6	2440.5
137.5°	2552.6	2581.2	2586.9	2584.6	2570.9
140°	2677.3	2705.9	2721.9	2721.9	2709.3
142.5°	2805.5	2834.1	2843.2	2846.6	2834.1
145°	2926.7	2949.6	2967.9	2971.4	2958.8
147.5°	3035.4	3064.0	3077.8	3083.5	3070.9
150°	3147.6	3167.0	3179.6	3189.9	3179.6
152.5°	3247.1	3266.5	3282.6	3295.2	3282.6
155°	3346.6	3355.8	3366.1	3382.1	3371.8
157.5°	3432.5	3439.3	3445.0	3467.9	3451.9
160°	3509.1	3516.0	3519.4	3538.9	3525.1
162.5°	3580.0	3580.0	3583.5	3605.2	3589.2
165°	3640.7	3637.3	3637.3	3660.1	3644.1
167.5°	3695.6	3685.3	3685.3	3708.2	3692.2
170°	3736.8	3727.6	3724.2	3747.1	3727.6
172.5°	3765.4	3756.2	3752.8	3775.7	3756.2
175°	3788.3	3779.1	3772.3	3795.1	3775.7
177.5°	3800.9	3791.7	3784.8	3804.3	3784.8
180°	3795.1	3795.1	3795.1	3795.1	3795.1

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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	13.06	13.88	14.03	14.86	16.15	9.02	9.84	9.99	10.82	12.11
	3H	14.73	15.47	15.71	16.46	17.77	10.20	10.94	11.18	11.93	13.24
	4H	15.34	16.03	16.33	17.02	18.34	10.65	11.34	11.64	12.33	13.65
	6H	15.75	16.39	16.76	17.39	18.72	10.96	11.60	11.97	12.60	13.93
	8H	15.88	16.49	16.89	17.50	18.83	11.05	11.66	12.06	12.67	14.00
	12H	15.94	16.52	16.95	17.52	18.87	11.09	11.67	12.10	12.67	14.03
4H	2H	13.07	13.77	14.08	14.76	16.08	9.61	10.31	10.61	11.30	12.62
	3H	14.90	15.47	15.91	16.50	17.83	10.95	11.53	11.96	12.55	13.88
	4H	15.58	16.11	16.60	17.13	18.48	11.49	12.02	12.51	13.04	14.39
	6H	16.09	16.55	17.12	17.59	18.94	11.91	12.36	12.94	13.40	14.75
	8H	16.27	16.69	17.30	17.72	19.09	12.03	12.46	13.06	13.49	14.85
	12H	16.36	16.74	17.41	17.79	19.16	12.09	12.47	13.14	13.52	14.89
8H	4H	15.55	15.97	16.58	17.01	18.37	11.77	12.20	12.80	13.23	14.59
	6H	16.11	16.46	17.16	17.53	18.90	12.28	12.63	13.34	13.70	15.07
	8H	16.32	16.63	17.39	17.69	19.07	12.47	12.77	13.53	13.83	15.22
	12H	16.46	16.73	17.52	17.78	19.21	12.58	12.85	13.64	13.90	15.33
12H	4H	15.50	15.88	16.55	16.93	18.30	11.78	12.16	12.82	13.20	14.58
	6H	16.09	16.39	17.15	17.45	18.83	12.33	12.64	13.39	13.70	15.08
	8H	16.30	16.57	17.37	17.63	19.05	12.53	12.80	13.60	13.86	15.28