

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: P906642

Luminaire Tested: DFN2DIP-SQ3F0-120D070US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906642
REPORT IS A COMBINATION OF REPORTS P899932 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D070US835-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

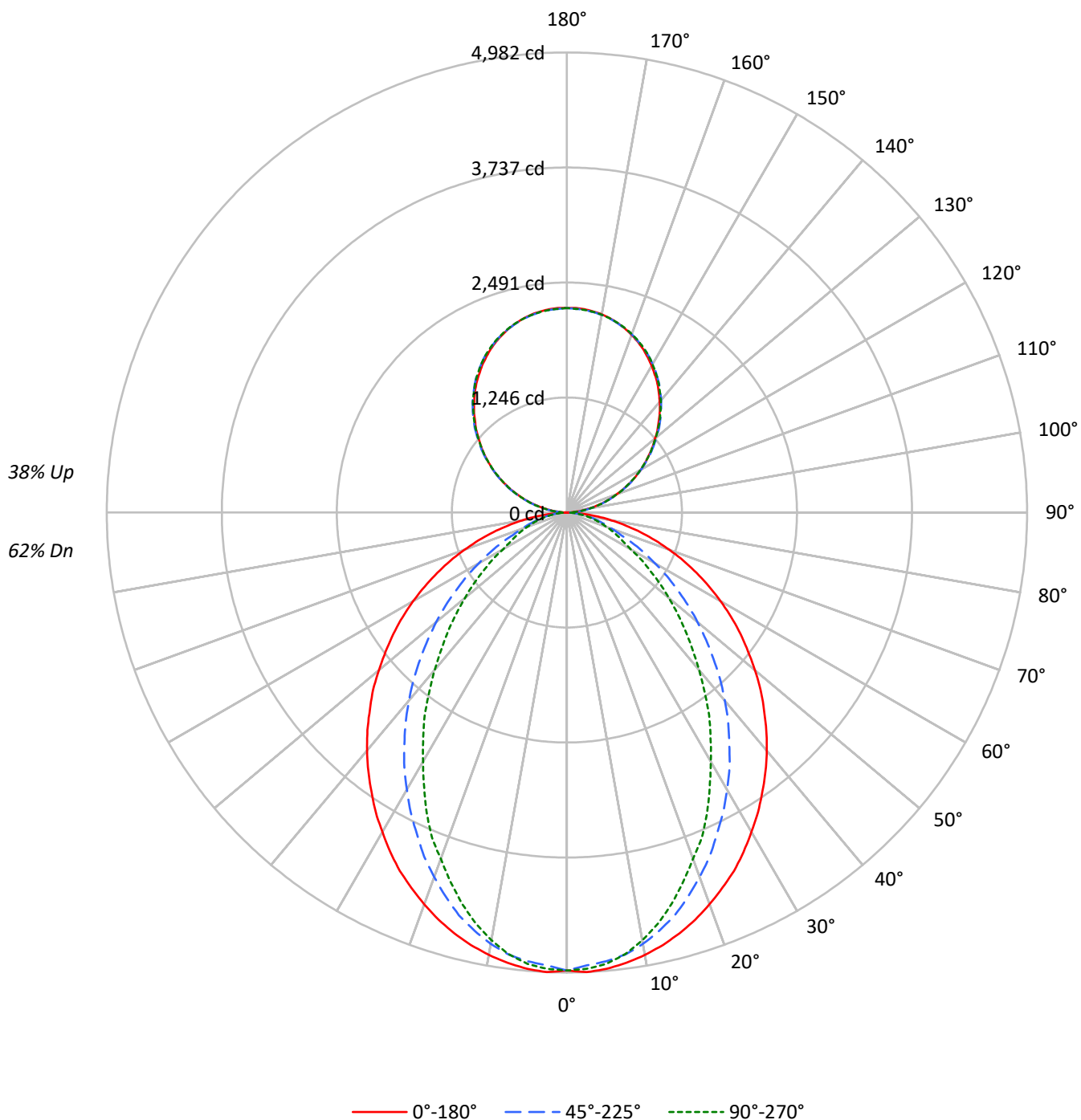
Lumens per Lamp: N/A
Luminaire Lumens: 16395.0 lumens
Efficiency: N/A
Efficacy: 92.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 178.3
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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67
1	101	97	93	90	95	91	88	85	80	78	75	70	68	66	60	59	58
2	93	85	79	74	87	80	75	71	71	67	63	62	59	56	54	52	50
3	85	76	68	63	79	71	65	60	63	58	54	55	52	48	48	46	43
4	78	67	60	54	73	64	57	51	56	51	47	50	46	42	44	40	38
5	72	60	52	47	67	57	50	45	51	45	41	45	41	37	40	36	33
6	66	55	47	41	62	52	44	39	46	40	36	41	36	33	36	32	30
7	62	49	42	36	58	47	40	35	42	36	32	38	33	29	33	29	27
8	57	45	37	32	54	43	36	31	39	33	29	34	30	26	31	27	24
9	54	41	34	29	50	39	33	28	36	30	26	32	27	24	28	25	22
10	50	38	31	26	47	36	30	25	33	27	24	30	25	22	26	23	20

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	2.8
10°-20°	1276.0	7.8
20°-30°	1791.5	10.9
30°-40°	1952.8	11.9
40°-50°	1794.9	10.9
50°-60°	1409.6	8.6
60°-70°	917.5	5.6
70°-80°	472.3	2.9
80°-90°	126.9	0.8
90°-100°	137.0	0.8
100°-110°	435.3	2.7
110°-120°	744.9	4.5
120°-130°	979.6	6.0
130°-140°	1099.6	6.7
140°-150°	1078.3	6.6
150°-160°	904.5	5.5
160°-170°	599.9	3.7
170°-180°	209.7	1.3
0°-30°	3532.3	21.5
0°-40°	5485.2	33.5
0°-60°	8689.6	53.0
0°-90°	10206.3	62.3
90°-120°	1317.2	8.0
90°-150°	4474.7	27.3
90°-180°	6189.0	37.7
0°-180°	16395.0	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°	2	24	65	61	63	16
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	

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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°	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

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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

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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	14.22	15.16	15.07	16.03	17.12	10.18	11.12	11.03	11.99	13.08
	3H	15.90	16.75	16.77	17.62	18.74	11.37	12.21	12.24	13.09	14.21
	4H	16.51	17.31	17.39	18.19	19.32	11.82	12.62	12.70	13.50	14.63
	6H	16.94	17.67	17.83	18.56	19.70	12.14	12.88	13.04	13.77	14.91
	8H	17.06	17.76	17.97	18.67	19.81	12.24	12.93	13.14	13.84	14.98
	12H	17.13	17.79	18.03	18.69	19.86	12.28	12.94	13.18	13.84	15.01
4H	2H	14.25	15.05	15.14	15.93	17.06	10.79	11.58	11.67	12.47	13.59
	3H	16.09	16.75	16.98	17.66	18.80	12.14	12.80	13.04	13.72	14.86
	4H	16.78	17.38	17.69	18.29	19.46	12.69	13.29	13.60	14.20	15.37
	6H	17.29	17.81	18.22	18.75	19.92	13.11	13.62	14.03	14.56	15.73
	8H	17.47	17.95	18.39	18.88	20.06	13.23	13.72	14.16	14.65	15.83
	12H	17.57	18.00	18.51	18.95	20.14	13.30	13.73	14.24	14.68	15.87
8H	4H	16.75	17.24	17.68	18.17	19.35	12.97	13.46	13.90	14.39	15.57
	6H	17.32	17.72	18.27	18.69	19.87	13.49	13.89	14.44	14.86	16.04
	8H	17.53	17.88	18.49	18.85	20.04	13.67	14.03	14.63	14.99	16.19
	12H	17.67	17.98	18.63	18.94	20.18	13.79	14.10	14.75	15.06	16.31
12H	4H	16.71	17.14	17.65	18.09	19.28	12.98	13.42	13.93	14.37	15.55
	6H	17.29	17.65	18.25	18.61	19.81	13.54	13.89	14.50	14.85	16.05
	8H	17.51	17.83	18.48	18.78	20.03	13.75	14.06	14.71	15.01	16.26