

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: P920284

Luminaire Tested: DFN2DIP-SQ3F0-120D080US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920284
REPORT IS A COMBINATION OF REPORTS P899949 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D080US935-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

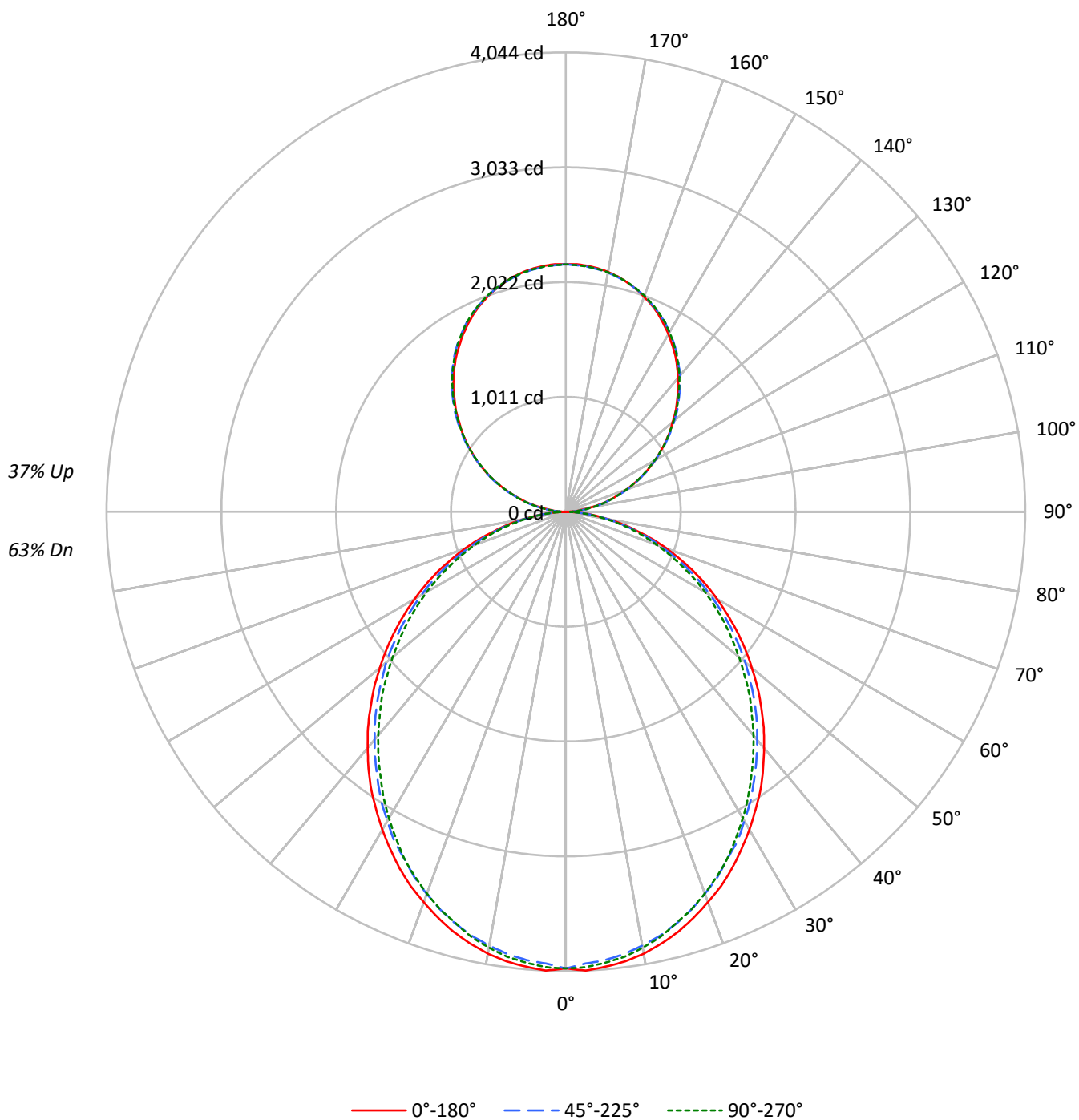
Lumens per Lamp: N/A
Luminaire Lumens: 16324.6 lumens
Efficiency: N/A
Efficacy: 87.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 186.2
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	79	79	79	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	66	60	59	57
2	92	84	78	72	86	79	73	69	70	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	58	61	56	52	54	50	46	47	44	41
4	77	66	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	38	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4606	4606	4606
5°	4611	4539	4571
10°	4570	4475	4508
15°	4500	4398	4410
20°	4407	4293	4309
25°	4313	4167	4193
30°	4197	4050	4046
35°	4087	3913	3891
40°	3951	3774	3743
45°	3816	3634	3591
50°	3668	3488	3416
55°	3513	3318	3254
60°	3337	3117	3069
65°	3145	2909	2851
70°	2900	2655	2615
75°	2562	2350	2396
80°	2154	1961	1980
85°	1516	1299	1296

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3816 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	378.4	2.3
10°-20°	1064.6	6.5
20°-30°	1564.6	9.6
30°-40°	1817.2	11.1
40°-50°	1814.9	11.1
50°-60°	1582.5	9.7
60°-70°	1169.9	7.2
70°-80°	661.9	4.1
80°-90°	180.9	1.1
90°-100°	134.8	0.8
100°-110°	428.3	2.6
110°-120°	733.0	4.5
120°-130°	964.0	5.9
130°-140°	1082.0	6.6
140°-150°	1061.0	6.5
150°-160°	890.1	5.5
160°-170°	590.3	3.6
170°-180°	206.3	1.3
0°-30°	3007.6	18.4
0°-40°	4824.8	29.6
0°-60°	8222.2	50.4
0°-90°	10234.8	62.7
90°-120°	1296.1	7.9
90°-150°	4403.1	27.0
90°-180°	6090.0	37.3
0°-180°	16324.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4020	4020	4020	4020	4020	
5°	4020	4005	3962	3993	3986	382
15°	3827	3804	3754	3769	3750	1078
25°	3464	3433	3367	3375	3367	1594
35°	2988	2950	2888	2864	2845	1866
45°	2432	2405	2346	2304	2289	1877
55°	1840	1817	1771	1724	1705	1645
65°	1241	1218	1179	1144	1125	1227
75°	649	642	622	599	607	693
85°	158	155	151	139	135	177
90°	2	24	64	60	62	16
95°	96	114	118	118	114	107
105°	395	401	405	408	408	417
115°	736	746	743	741	736	728
125°	1070	1086	1081	1075	1073	956
135°	1384	1404	1408	1406	1401	1070
145°	1680	1693	1704	1706	1698	1050
155°	1921	1926	1932	1941	1935	884
165°	2090	2088	2088	2101	2092	590
175°	2174	2169	2165	2178	2167	207
180°	2178	2178	2178	2178	2178	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4020.3	4020.3	4020.3	4020.3	4020.3
2.5°	4043.6	4024.3	3981.7	4020.3	4012.9
5°	4020.3	4005.0	3962.4	3993.1	3985.7
7.5°	3993.1	3970.1	3927.5	3958.7	3950.9
10°	3950.9	3923.8	3877.5	3908.2	3896.8
12.5°	3892.7	3869.7	3823.3	3842.6	3834.8
15°	3827.0	3804.1	3753.6	3769.2	3749.9
17.5°	3745.9	3722.9	3672.4	3691.7	3672.4
20°	3656.8	3633.8	3579.8	3591.2	3576.1
22.5°	3568.2	3533.4	3482.9	3482.9	3475.2
25°	3463.6	3432.9	3367.3	3374.7	3367.3
27.5°	3347.6	3320.5	3270.5	3259.0	3239.8
30°	3231.9	3200.8	3142.9	3131.4	3115.9
32.5°	3108.0	3085.1	3023.1	2999.8	2984.2
35°	2988.3	2949.8	2887.8	2864.5	2845.2
37.5°	2852.9	2818.1	2756.1	2729.1	2709.8
40°	2714.0	2682.8	2620.8	2586.4	2570.8
42.5°	2578.6	2547.4	2485.9	2447.0	2424.0
45°	2431.7	2404.7	2346.4	2304.2	2288.6
47.5°	2288.6	2261.5	2199.6	2157.0	2134.0
50°	2137.7	2118.4	2064.2	2010.1	1990.8
52.5°	1990.8	1963.8	1913.7	1871.0	1844.0
55°	1840.3	1817.0	1770.6	1724.2	1704.9
57.5°	1689.4	1670.1	1619.6	1573.3	1557.7
60°	1538.4	1523.3	1469.1	1426.5	1415.0
62.5°	1391.6	1364.5	1326.0	1287.5	1271.9
65°	1241.1	1217.7	1179.1	1144.3	1125.1
67.5°	1086.5	1066.8	1032.3	1005.3	989.7
70°	943.3	927.7	892.9	865.8	850.7
72.5°	796.5	780.9	761.6	734.6	723.1
75°	649.3	641.9	622.2	599.3	607.0
77.5°	518.0	502.4	494.6	483.1	471.7
80°	386.8	382.6	374.9	363.4	355.6
82.5°	262.9	262.9	259.2	243.7	243.7
85°	158.3	154.6	150.9	139.1	135.3
87.5°	69.7	61.9	54.2	42.6	38.6
90°	2.0	23.7	64.4	60.4	62.4
92.5°	40.7	55.2	57.2	59.1	59.1
95°	95.9	114.3	117.5	117.5	114.3
97.5°	159.6	176.7	183.9	183.9	183.9
100°	233.2	248.2	253.5	253.5	251.5
102.5°	310.6	321.8	329.0	331.0	329.0
105°	395.4	400.6	404.6	407.9	407.9
107.5°	479.4	487.3	487.3	488.6	479.4
110°	560.9	571.4	571.4	571.4	566.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	648.8	660.0	658.1	652.8	648.8
115°	735.6	746.1	742.8	740.8	735.6
117.5°	821.6	836.0	826.8	821.6	816.3
120°	908.3	922.7	908.3	908.3	902.3
122.5°	987.0	1005.5	996.3	991.0	987.0
125°	1069.8	1086.2	1081.0	1075.0	1073.1
127.5°	1150.6	1171.0	1163.7	1155.9	1150.6
130°	1226.1	1249.7	1246.5	1242.6	1235.4
132.5°	1310.9	1329.2	1330.6	1321.4	1316.1
135°	1383.7	1404.1	1408.1	1406.1	1400.8
137.5°	1465.2	1481.6	1484.9	1483.6	1475.7
140°	1536.8	1553.2	1562.4	1562.4	1555.1
142.5°	1610.3	1626.8	1632.0	1634.0	1626.8
145°	1680.0	1693.1	1703.6	1705.6	1698.3
147.5°	1742.3	1758.8	1766.6	1770.0	1762.7
150°	1806.7	1817.8	1825.1	1831.0	1825.1
152.5°	1863.8	1875.0	1884.2	1891.4	1884.2
155°	1921.0	1926.2	1932.2	1941.3	1935.4
157.5°	1970.2	1974.2	1977.5	1990.5	1981.4
160°	2014.2	2018.2	2020.2	2031.3	2023.4
162.5°	2054.9	2054.9	2056.9	2069.4	2060.2
165°	2089.7	2087.7	2087.7	2100.9	2091.7
167.5°	2121.2	2115.4	2115.4	2128.5	2119.3
170°	2144.9	2139.7	2137.7	2150.9	2139.7
172.5°	2161.4	2156.1	2154.1	2167.2	2156.1
175°	2174.5	2169.2	2165.2	2178.4	2167.2
177.5°	2181.7	2176.4	2172.5	2183.7	2172.5
180°	2178.4	2178.4	2178.4	2178.4	2178.4

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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	13.64	14.63	14.48	15.49	16.57	13.19	14.18	14.03	15.05	16.12
	3H	15.30	16.19	16.16	17.06	18.17	14.81	15.70	15.67	16.57	17.68
	4H	15.89	16.73	16.76	17.61	18.73	15.40	16.24	16.27	17.12	18.23
	6H	16.30	17.07	17.18	17.96	19.09	15.80	16.57	16.68	17.46	18.58
	8H	16.40	17.14	17.29	18.04	19.17	15.90	16.64	16.79	17.54	18.67
	12H	16.46	17.16	17.35	18.05	19.21	15.95	16.65	16.84	17.55	18.70
4H	2H	14.11	14.95	14.99	15.83	16.94	13.76	14.60	14.63	15.47	16.59
	3H	15.98	16.68	16.87	17.59	18.72	15.58	16.28	16.46	17.19	18.32
	4H	16.70	17.34	17.60	18.24	19.40	16.28	16.91	17.17	17.82	18.98
	6H	17.22	17.77	18.13	18.70	19.86	16.78	17.34	17.70	18.27	19.43
	8H	17.37	17.88	18.28	18.81	19.98	16.93	17.45	17.84	18.37	19.54
	12H	17.44	17.91	18.38	18.85	20.03	17.00	17.46	17.93	18.40	19.58
8H	4H	16.90	17.42	17.82	18.34	19.51	16.52	17.04	17.44	17.97	19.14
	6H	17.53	17.96	18.47	18.93	20.10	17.15	17.58	18.09	18.54	19.71
	8H	17.75	18.13	18.70	19.09	20.27	17.36	17.74	18.31	18.69	19.88
	12H	17.88	18.22	18.84	19.17	20.41	17.47	17.81	18.43	18.76	20.00
12H	4H	16.89	17.36	17.83	18.30	19.48	16.52	16.99	17.46	17.93	19.11
	6H	17.56	17.94	18.51	18.90	20.09	17.19	17.57	18.14	18.52	19.71
	8H	17.81	18.14	18.76	19.09	20.33	17.43	17.76	18.38	18.71	19.95