

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: P903485

Luminaire Tested: DFN2DIP-SQ2F0-030D070US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903485
REPORT IS A COMBINATION OF REPORTS P901339 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D070US830-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

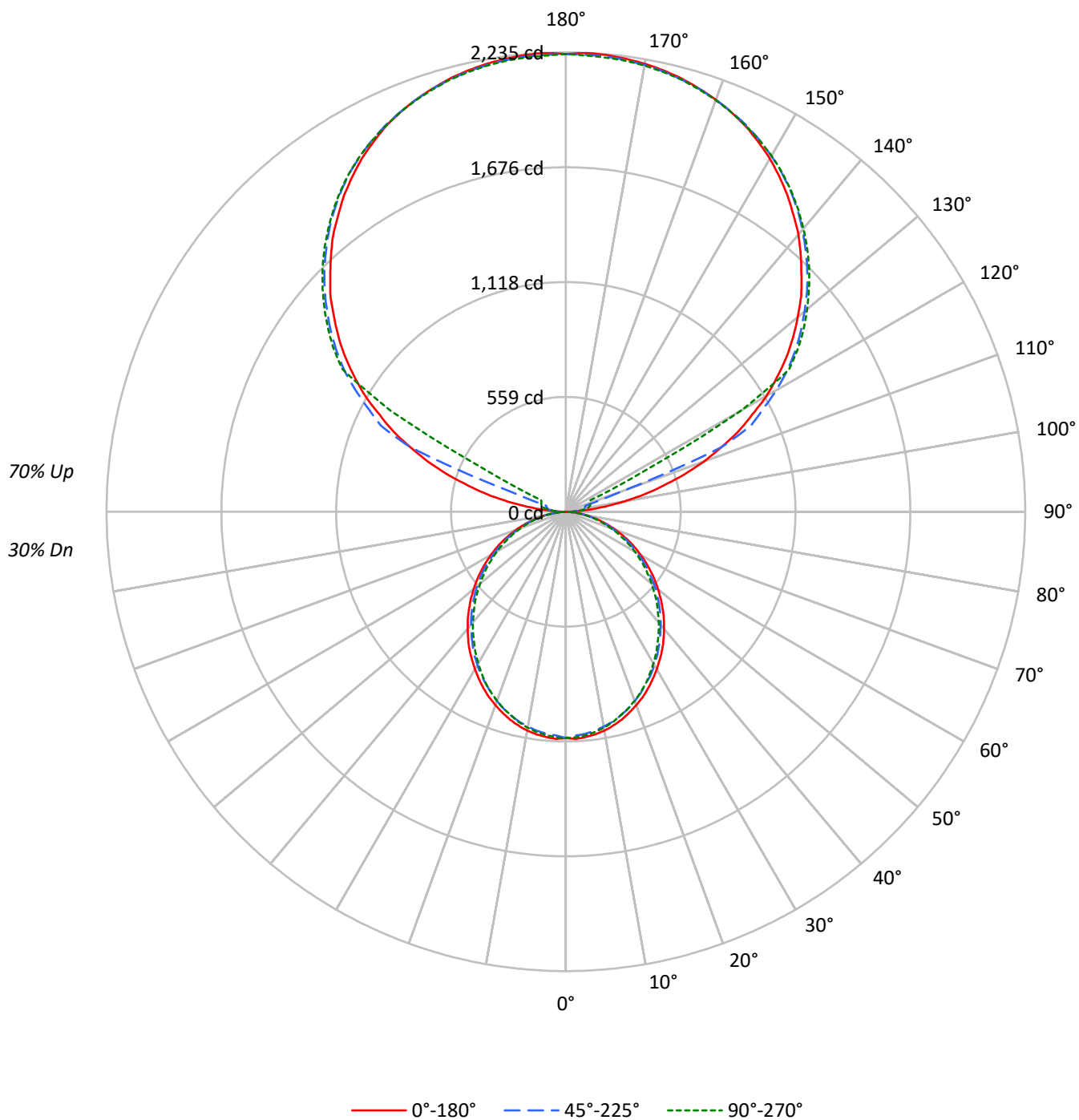
Lumens per Lamp: N/A
Luminaire Lumens: 9331.2 lumens
Efficiency: N/A
Efficacy: 120.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 77.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	93	89	85	82	84	80	77	74	63	61	59	48	46	45	33	33	32
2	85	78	72	67	76	70	65	61	55	52	49	42	40	38	29	28	27
3	77	68	61	56	69	62	56	51	49	45	41	37	34	32	26	24	23
4	71	60	53	47	63	54	48	43	43	39	35	33	30	27	23	21	20
5	65	54	46	40	58	48	42	37	39	34	30	29	26	23	21	19	17
6	60	48	40	35	53	43	37	32	35	30	26	27	23	20	19	17	15
7	55	43	35	30	49	39	32	28	31	26	23	24	21	18	17	15	13
8	51	39	32	26	46	35	29	24	28	24	20	22	19	16	16	14	12
9	47	36	28	23	42	32	26	22	26	21	18	20	17	14	15	12	11
10	44	32	26	21	40	30	23	19	24	19	16	19	15	13	14	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2419	2419	2419
5°	2419	2380	2398
10°	2395	2343	2362
15°	2356	2299	2308
20°	2304	2240	2253
25°	2252	2171	2190
30°	2189	2106	2110
35°	2128	2031	2026
40°	2054	1954	1946
45°	1980	1877	1863
50°	1899	1796	1769
55°	1814	1702	1681
60°	1717	1592	1580
65°	1611	1477	1460
70°	1477	1337	1331
75°	1292	1168	1208
80°	1066	953	982
85°	722	602	616

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2116 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	1.1
10°-20°	291.4	3.1
20°-30°	428.2	4.6
30°-40°	497.3	5.3
40°-50°	496.7	5.3
50°-60°	433.1	4.6
60°-70°	320.2	3.4
70°-80°	181.1	1.9
80°-90°	51.7	0.6
90°-100°	73.4	0.8
100°-110°	273.7	2.9
110°-120°	725.9	7.8
120°-130°	1204.0	12.9
130°-140°	1278.9	13.7
140°-150°	1188.6	12.7
150°-160°	955.6	10.2
160°-170°	615.8	6.6
170°-180°	211.9	2.3
0°-30°	823.1	8.8
0°-40°	1320.4	14.2
0°-60°	2250.3	24.1
0°-90°	2803.3	30.0
90°-120°	1073.0	11.5
90°-150°	4744.6	50.8
90°-180°	6528.0	70.0
0°-180°	9331.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1100	1100	1100	1100	1100	
5°	1100	1096	1084	1093	1091	104
15°	1047	1041	1027	1032	1026	295
25°	948	940	922	924	922	436
35°	818	807	790	784	779	511
45°	666	658	642	631	626	514
55°	504	497	485	472	467	450
65°	340	333	323	313	308	336
75°	178	176	170	164	166	190
85°	43	42	41	38	37	48
90°	2	19	32	40	44	9
95°	105	52	63	71	69	124
105°	490	538	98	116	122	523
115°	926	954	994	248	132	912
125°	1310	1331	1362	1373	1378	1168
135°	1621	1647	1661	1677	1674	1252
145°	1880	1879	1906	1917	1909	1176
155°	2070	2056	2075	2085	2072	954
165°	2182	2172	2177	2188	2177	616
175°	2232	2220	2224	2235	2219	212
180°	2227	2227	2227	2227	2227	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1100.2	1100.2	1100.2	1100.2	1100.2
2.5°	1106.6	1101.4	1089.7	1100.2	1098.3
5°	1100.2	1096.1	1084.4	1092.9	1090.8
7.5°	1092.9	1086.6	1074.9	1083.5	1081.3
10°	1081.3	1073.8	1061.2	1069.6	1066.5
12.5°	1065.4	1059.0	1046.4	1051.6	1049.5
15°	1047.4	1041.1	1027.3	1031.5	1026.2
17.5°	1025.1	1018.9	1005.0	1010.3	1005.0
20°	1000.8	994.5	979.7	982.8	978.6
22.5°	976.6	967.0	953.2	953.2	951.0
25°	947.9	939.5	921.5	923.6	921.5
27.5°	916.2	908.7	895.0	891.9	886.6
30°	884.5	876.0	860.2	857.0	852.7
32.5°	850.6	844.3	827.4	821.0	816.7
35°	817.8	807.3	790.3	783.9	778.6
37.5°	780.8	771.3	754.3	746.9	741.6
40°	742.7	734.2	717.3	707.8	703.6
42.5°	705.7	697.2	680.3	669.7	663.4
45°	665.5	658.1	642.2	630.6	626.3
47.5°	626.3	619.0	602.0	590.3	584.0
50°	585.0	579.8	565.0	550.2	544.9
52.5°	544.9	537.4	523.8	512.1	504.6
55°	503.7	497.3	484.6	471.9	466.7
57.5°	462.3	457.0	443.3	430.6	426.3
60°	421.0	416.9	402.1	390.4	387.3
62.5°	380.9	373.4	362.9	352.3	348.1
65°	339.7	333.3	322.7	313.2	307.9
67.5°	297.4	292.0	282.5	275.1	270.9
70°	258.2	253.9	244.4	237.0	232.8
72.5°	218.0	213.7	208.4	201.0	197.9
75°	177.7	175.7	170.3	164.0	166.2
77.5°	141.8	137.5	135.3	132.2	129.1
80°	105.8	104.7	102.5	99.4	97.4
82.5°	71.9	71.9	71.0	66.6	66.6
85°	43.4	42.3	41.3	38.1	37.0
87.5°	19.0	17.0	14.8	11.7	10.6
90°	1.5	19.3	32.1	40.3	43.5
92.5°	40.3	33.8	38.6	41.9	43.5
95°	104.6	51.5	62.8	71.0	69.3
97.5°	188.4	56.5	82.1	87.1	88.6
100°	285.3	64.5	91.8	104.6	107.9
102.5°	391.4	388.4	95.1	112.7	117.6
105°	489.8	538.2	98.3	115.9	122.4
107.5°	604.2	644.4	101.6	119.2	125.7
110°	713.9	747.5	282.0	120.9	127.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	817.0	845.8	818.5	123.9	128.9
115°	926.4	953.8	994.1	248.2	132.2
117.5°	1021.5	1053.7	1081.2	850.6	428.6
120°	1127.8	1152.0	1181.1	1200.4	982.9
122.5°	1218.0	1243.8	1276.2	1285.7	1287.4
125°	1309.9	1330.9	1361.5	1372.8	1377.5
127.5°	1393.6	1416.2	1440.5	1456.6	1458.1
130°	1472.6	1498.5	1516.1	1533.9	1532.4
132.5°	1553.2	1574.2	1591.9	1606.4	1604.9
135°	1620.9	1646.7	1661.1	1677.3	1674.1
137.5°	1691.7	1711.1	1727.3	1743.4	1738.6
140°	1761.0	1774.0	1791.6	1806.1	1798.1
142.5°	1819.1	1830.4	1851.2	1864.1	1856.1
145°	1880.4	1878.7	1906.0	1917.3	1909.3
147.5°	1933.3	1928.6	1956.0	1964.0	1957.7
150°	1985.0	1973.8	1999.6	2009.1	2001.1
152.5°	2028.4	2015.6	2039.8	2049.5	2038.2
155°	2070.4	2056.0	2075.3	2084.9	2072.1
157.5°	2104.2	2091.4	2105.9	2117.2	2104.2
160°	2133.4	2123.5	2133.4	2142.9	2131.6
162.5°	2159.0	2149.4	2157.4	2168.7	2154.2
165°	2181.5	2172.0	2176.7	2188.0	2176.7
167.5°	2199.3	2189.5	2194.5	2205.8	2191.3
170°	2213.8	2204.1	2207.3	2218.7	2204.1
172.5°	2223.5	2213.8	2217.1	2228.4	2213.8
175°	2231.5	2220.2	2223.5	2234.7	2218.7
177.5°	2234.7	2223.5	2225.2	2236.5	2221.9
180°	2226.7	2226.7	2226.7	2226.7	2226.7

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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	8.02	8.72	9.13	9.83	11.36	7.57	8.28	8.69	9.39	10.92
	3H	9.65	10.28	10.77	11.40	12.94	9.16	9.79	10.28	10.91	12.45
	4H	10.22	10.82	11.34	11.93	13.48	9.72	10.32	10.85	11.44	12.99
	6H	10.59	11.14	11.73	12.26	13.83	10.09	10.65	11.23	11.76	13.33
	8H	10.68	11.21	11.83	12.34	13.90	10.18	10.71	11.32	11.84	13.40
	12H	10.72	11.22	11.87	12.35	13.93	10.21	10.71	11.36	11.84	13.42
4H	2H	8.45	9.05	9.59	10.17	11.72	8.09	8.70	9.23	9.81	11.36
	3H	10.28	10.78	11.42	11.92	13.49	9.87	10.37	11.01	11.51	13.08
	4H	10.97	11.43	12.12	12.56	14.15	10.55	11.01	11.69	12.14	13.72
	6H	11.46	11.85	12.61	13.01	14.58	11.03	11.42	12.18	12.58	14.15
	8H	11.59	11.96	12.75	13.11	14.70	11.16	11.53	12.31	12.67	14.26
	12H	11.65	11.99	12.82	13.14	14.74	11.20	11.54	12.37	12.69	14.29
8H	4H	11.14	11.51	12.29	12.66	14.25	10.77	11.13	11.92	12.28	13.87
	6H	11.74	12.05	12.92	13.24	14.82	11.36	11.66	12.53	12.85	14.44
	8H	11.95	12.21	13.13	13.38	14.99	11.56	11.82	12.73	12.99	14.60
	12H	12.06	12.29	13.24	13.46	15.10	11.65	11.88	12.83	13.05	14.69
12H	4H	11.12	11.45	12.29	12.61	14.21	10.75	11.08	11.92	12.24	13.84
	6H	11.77	12.03	12.94	13.20	14.81	11.39	11.66	12.57	12.83	14.43
	8H	11.99	12.22	13.17	13.38	15.03	11.60	11.84	12.79	13.00	14.64