

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: P908998

Luminaire Tested: DFN2DIP-SQ2F0-060D030US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908998
REPORT IS A COMBINATION OF REPORTS P899778 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-060D030US840-RLLFLL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

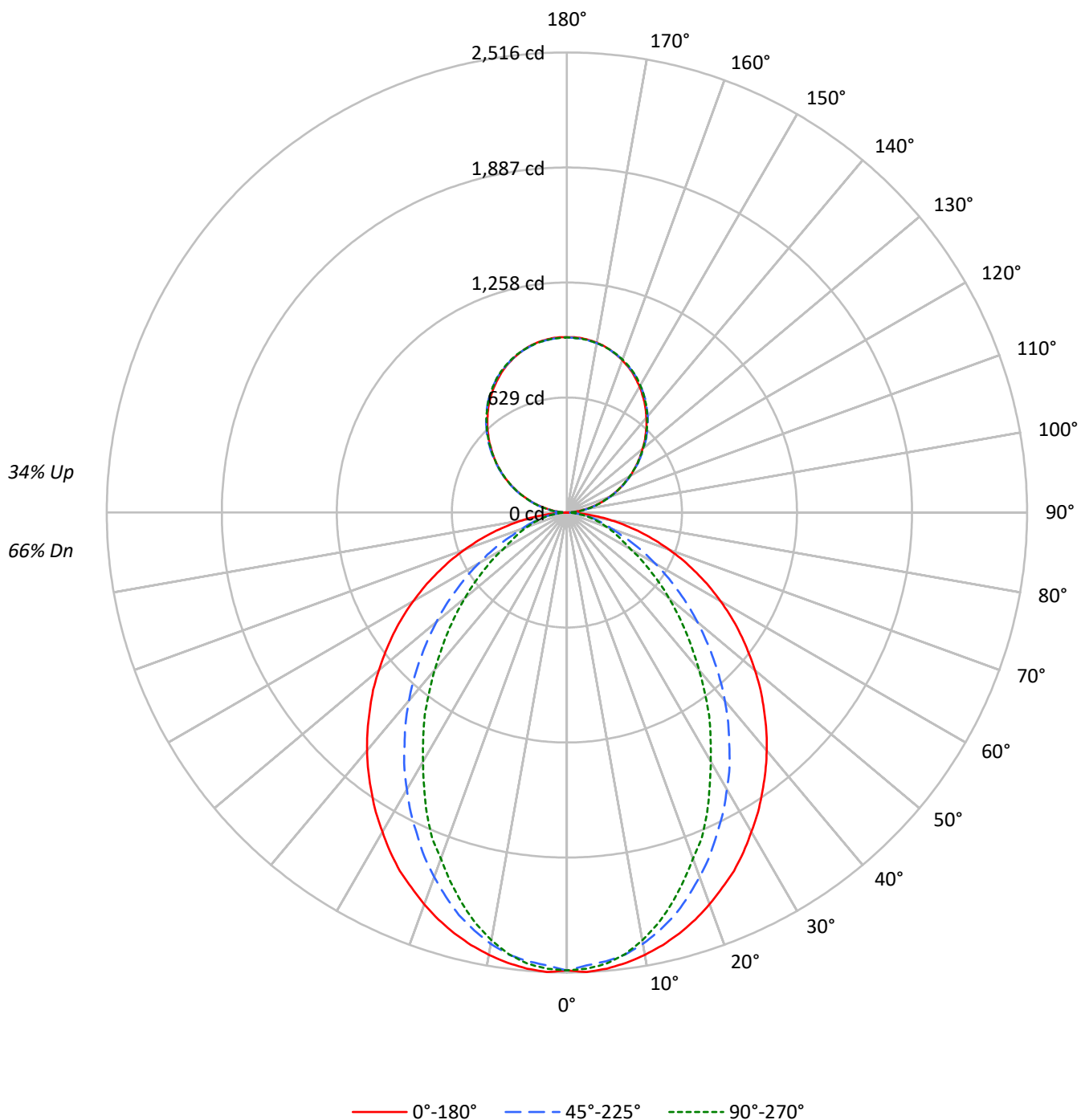
Lumens per Lamp: N/A
Luminaire Lumens: 7831.5 lumens
Efficiency: N/A
Efficacy: 100.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 77.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5507	5507	5507
5°	5506	5407	5446
10°	5442	5289	5261
15°	5357	5103	4980
20°	5249	4851	4638
25°	5137	4571	4308
30°	4991	4284	3892
35°	4848	3977	3526
40°	4701	3661	3109
45°	4531	3312	2731
50°	4355	2961	2362
55°	4170	2587	2008
60°	3956	2198	1645
65°	3709	1805	1472
70°	3408	1437	1322
75°	3031	1244	1187
80°	2489	1010	1006
85°	1620	627	715

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4531 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.7	3.0
10°-20°	644.3	8.2
20°-30°	904.6	11.6
30°-40°	986.1	12.6
40°-50°	906.3	11.6
50°-60°	711.7	9.1
60°-70°	463.3	5.9
70°-80°	238.5	3.0
80°-90°	63.6	0.8
90°-100°	59.3	0.8
100°-110°	188.4	2.4
110°-120°	322.4	4.1
120°-130°	424.0	5.4
130°-140°	475.9	6.1
140°-150°	466.7	6.0
150°-160°	391.5	5.0
160°-170°	259.6	3.3
170°-180°	90.7	1.2
0°-30°	1783.6	22.8
0°-40°	2769.6	35.4
0°-60°	4387.7	56.0
0°-90°	5153.0	65.8
90°-120°	570.1	7.3
90°-150°	1936.6	24.7
90°-180°	2678.0	34.2
0°-180°	7831.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2504	2504	2504	2504	2504	
5°	2504	2493	2463	2484	2477	237
15°	2382	2357	2280	2237	2214	671
25°	2162	2090	1940	1847	1813	994
35°	1863	1747	1548	1405	1355	1166
45°	1523	1371	1133	972	918	1176
55°	1158	981	736	601	558	1035
65°	782	598	394	317	310	775
75°	417	258	181	165	163	441
85°	97	50	43	43	43	112
90°	1	10	28	27	28	8
95°	42	50	52	52	50	47
105°	174	176	178	179	179	184
115°	324	328	327	326	324	320
125°	471	478	475	473	472	420
135°	609	618	619	618	616	470
145°	739	745	749	750	747	462
155°	845	847	850	854	851	389
165°	919	918	918	924	920	259
175°	956	954	952	958	953	91
180°	958	958	958	958	958	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2504.3	2504.3	2504.3	2504.3	2504.3
2.5°	2515.6	2504.3	2479.2	2502.0	2497.5
5°	2504.3	2493.0	2463.4	2483.9	2477.1
7.5°	2483.9	2470.3	2438.6	2447.5	2436.2
10°	2456.6	2440.7	2395.6	2388.6	2375.1
12.5°	2422.8	2402.3	2341.0	2327.5	2302.5
15°	2381.9	2356.8	2279.9	2236.9	2214.2
17.5°	2334.3	2297.9	2202.7	2152.9	2116.7
20°	2279.9	2234.4	2121.2	2064.7	2014.7
22.5°	2221.0	2168.8	2037.3	1960.4	1926.4
25°	2162.1	2089.5	1940.0	1847.1	1813.0
27.5°	2091.9	2014.7	1849.3	1742.7	1690.6
30°	2017.1	1930.8	1749.5	1634.1	1572.8
32.5°	1944.5	1840.2	1654.6	1518.4	1461.7
35°	1863.0	1747.4	1548.0	1405.1	1355.1
37.5°	1783.6	1658.8	1448.2	1291.7	1235.2
40°	1699.7	1563.9	1343.8	1183.0	1124.1
42.5°	1613.7	1468.6	1239.7	1071.9	1015.4
45°	1523.0	1371.0	1133.3	972.1	917.8
47.5°	1436.9	1276.1	1031.3	870.2	820.4
50°	1341.7	1180.8	931.5	775.0	727.6
52.5°	1248.6	1078.6	836.3	686.7	643.7
55°	1158.0	981.3	736.5	600.7	557.5
57.5°	1065.2	883.8	648.2	521.3	484.9
60°	970.0	788.7	555.2	439.8	403.4
62.5°	877.2	695.9	475.8	367.2	349.1
65°	781.9	598.2	394.4	317.4	310.4
67.5°	691.3	507.6	317.4	278.7	272.0
70°	596.0	419.3	262.8	240.2	231.1
72.5°	505.4	337.6	219.7	201.8	197.1
75°	417.0	258.2	181.3	165.4	163.3
77.5°	328.7	183.5	142.8	133.7	129.2
80°	246.9	131.5	108.7	99.8	99.8
82.5°	172.2	88.5	74.7	70.2	70.2
85°	97.4	49.8	43.0	43.0	43.0
87.5°	36.4	18.1	18.1	15.9	15.9
90°	0.9	10.4	28.3	26.6	27.5
92.5°	17.9	24.2	25.1	26.0	26.0
95°	42.2	50.3	51.7	51.7	50.3
97.5°	70.2	77.7	80.9	80.9	80.9
100°	102.5	109.2	111.5	111.5	110.7
102.5°	136.6	141.6	144.7	145.6	144.7
105°	173.9	176.2	177.9	179.4	179.4
107.5°	210.9	214.3	214.3	214.9	210.9
110°	246.7	251.4	251.4	251.4	249.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	285.4	290.3	289.4	287.1	285.4
115°	323.6	328.1	326.7	325.9	323.6
117.5°	361.3	367.7	363.7	361.3	359.0
120°	399.5	405.9	399.5	399.5	396.9
122.5°	434.1	442.2	438.2	435.9	434.1
125°	470.6	477.8	475.4	472.8	472.0
127.5°	506.0	515.0	511.9	508.4	506.0
130°	539.3	549.7	548.3	546.5	543.3
132.5°	576.5	584.6	585.2	581.2	578.9
135°	608.6	617.5	619.4	618.4	616.1
137.5°	644.4	651.7	653.1	652.6	649.0
140°	675.9	683.2	687.2	687.2	684.0
142.5°	708.3	715.5	717.8	718.7	715.5
145°	738.9	744.7	749.3	750.1	747.0
147.5°	766.4	773.6	777.0	778.5	775.3
150°	794.7	799.6	802.7	805.4	802.7
152.5°	819.8	824.7	828.7	831.9	828.7
155°	845.0	847.2	849.8	853.8	851.3
157.5°	866.6	868.3	869.8	875.6	871.5
160°	886.0	887.7	888.6	893.4	890.0
162.5°	903.8	903.8	904.7	910.2	906.2
165°	919.2	918.3	918.3	924.0	920.0
167.5°	933.0	930.4	930.4	936.1	932.1
170°	943.4	941.1	940.3	946.0	941.1
172.5°	950.6	948.4	947.5	953.2	948.4
175°	956.4	954.1	952.4	958.2	953.2
177.5°	959.6	957.3	955.5	960.5	955.5
180°	958.2	958.2	958.2	958.2	958.2

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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	14.32	15.30	15.13	16.13	17.16	10.28	11.26	11.10	12.09	13.12
	3H	15.99	16.86	16.82	17.71	18.76	11.46	12.34	12.29	13.18	14.24
	4H	16.59	17.42	17.44	18.27	19.33	11.91	12.73	12.75	13.58	14.65
	6H	17.00	17.76	17.86	18.62	19.70	12.22	12.98	13.08	13.84	14.92
	8H	17.13	17.85	17.99	18.72	19.81	12.30	13.03	13.17	13.90	14.98
	12H	17.18	17.87	18.06	18.74	19.85	12.34	13.03	13.22	13.90	15.01
4H	2H	14.35	15.18	15.20	16.03	17.09	10.88	11.71	11.73	12.56	13.63
	3H	16.17	16.86	17.03	17.74	18.82	12.23	12.91	13.09	13.79	14.88
	4H	16.85	17.48	17.73	18.36	19.47	12.76	13.39	13.64	14.27	15.38
	6H	17.36	17.89	18.25	18.80	19.91	13.17	13.71	14.06	14.61	15.73
	8H	17.52	18.03	18.42	18.92	20.05	13.29	13.79	14.18	14.69	15.82
	12H	17.62	18.07	18.53	18.98	20.12	13.35	13.80	14.26	14.72	15.85
8H	4H	16.83	17.33	17.72	18.23	19.35	13.04	13.54	13.93	14.44	15.57
	6H	17.38	17.79	18.30	18.73	19.86	13.54	13.96	14.46	14.90	16.02
	8H	17.58	17.95	18.51	18.88	20.03	13.72	14.09	14.65	15.02	16.16
	12H	17.71	18.04	18.64	18.96	20.16	13.83	14.15	14.76	15.08	16.27
12H	4H	16.79	17.24	17.70	18.15	19.29	13.05	13.50	13.96	14.42	15.55
	6H	17.35	17.72	18.28	18.65	19.80	13.59	13.95	14.52	14.89	16.03
	8H	17.56	17.89	18.50	18.81	20.01	13.79	14.11	14.72	15.04	16.23