

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: P917570

Luminaire Tested: DFN2DIP-SQ3F0-120D110US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917570
REPORT IS A COMBINATION OF REPORTS P900004 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D110US930-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

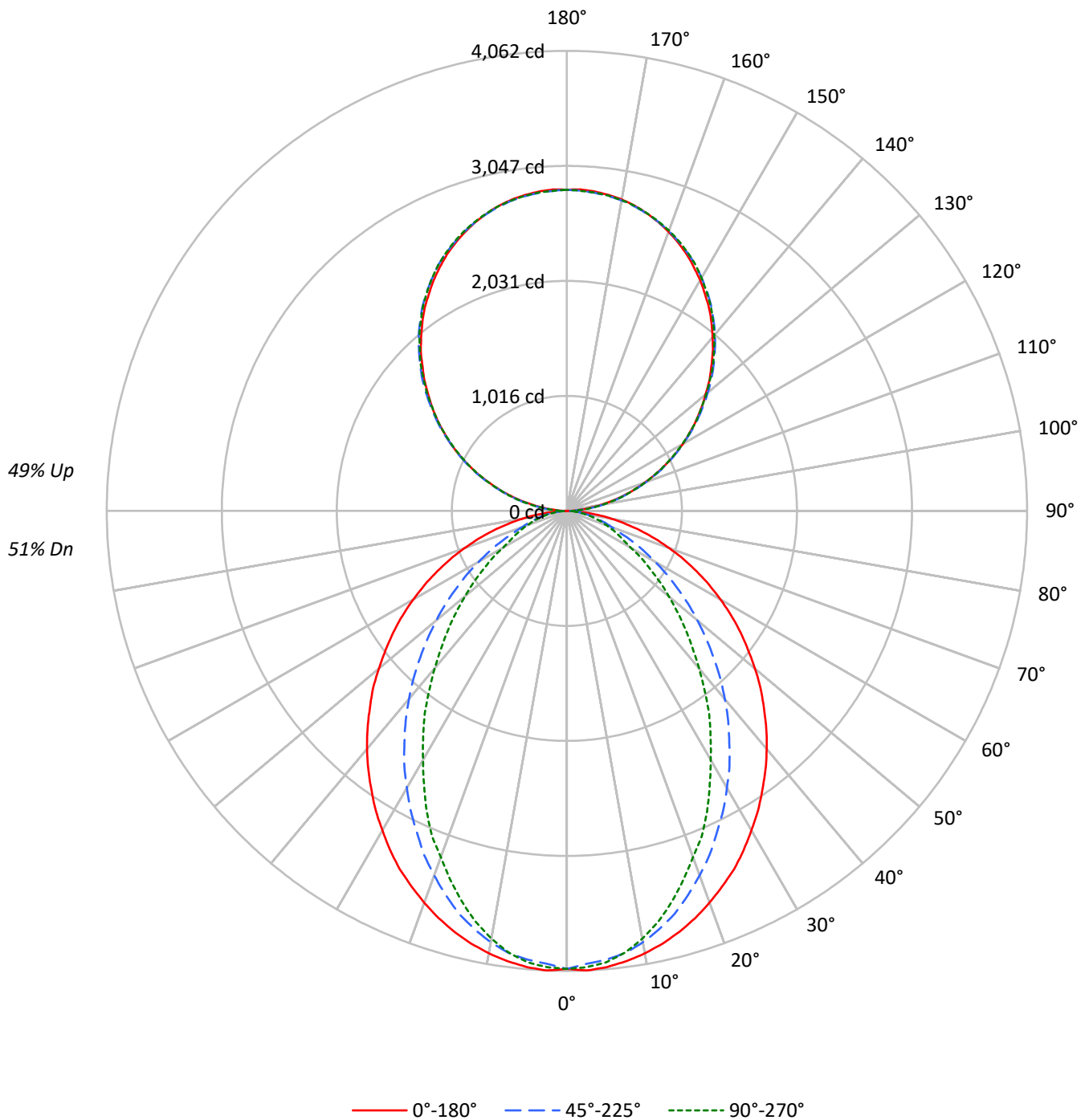
Lumens per Lamp: N/A
Luminaire Lumens: 16253.0 lumens
Efficiency: N/A
Efficacy: 76.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 211.7
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
RCR																	
0	107	107	107	107	99	99	99	99	84	84	84		70	70	70		57
1	99	94	91	87	91	87	84	81	74	72	70		62	61	59		51
2	90	83	77	72	83	77	72	68	66	62	59		55	53	50		46
3	83	73	66	61	76	68	62	57	58	54	50		49	46	43		41
4	76	65	58	52	70	61	54	49	52	47	43		44	41	37		37
5	70	58	51	45	64	54	47	42	47	42	37		40	36	33		34
6	64	53	45	39	59	49	42	37	43	37	33		36	32	29		31
7	60	48	40	34	55	45	38	33	39	33	29		33	29	26		28
8	55	43	36	31	51	41	34	29	35	30	26		31	26	23		26
9	52	40	32	27	48	37	31	26	33	27	24		28	24	21		24
10	48	37	29	25	45	34	28	24	30	25	21		26	22	19		22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4633	4633	4633
5°	4638	4556	4587
10°	4589	4464	4437
15°	4523	4314	4204
20°	4436	4107	3920
25°	4347	3877	3645
30°	4230	3640	3298
35°	4114	3387	2992
40°	3996	3125	2642
45°	3859	2834	2325
50°	3717	2541	2016
55°	3569	2229	1718
60°	3397	1902	1413
65°	3199	1571	1270
70°	2959	1262	1147
75°	2657	1106	1040
80°	2221	918	897
85°	1506	598	666

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3859 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	379.0	2.3
10°-20°	1040.3	6.4
20°-30°	1460.6	9.0
30°-40°	1592.1	9.8
40°-50°	1463.4	9.0
50°-60°	1149.2	7.1
60°-70°	748.0	4.6
70°-80°	385.1	2.4
80°-90°	106.4	0.7
90°-100°	175.5	1.1
100°-110°	557.7	3.4
110°-120°	954.3	5.9
120°-130°	1255.1	7.7
130°-140°	1408.8	8.7
140°-150°	1381.5	8.5
150°-160°	1158.9	7.1
160°-170°	768.5	4.7
170°-180°	268.6	1.7
0°-30°	2879.9	17.7
0°-40°	4472.0	27.5
0°-60°	7084.6	43.6
0°-90°	8324.1	51.2
90°-120°	1687.5	10.4
90°-150°	5732.8	35.3
90°-180°	7929.0	48.8
0°-180°	16253.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4044	4044	4044	4044	4044	
5°	4044	4025	3978	4010	4000	383
15°	3846	3806	3681	3612	3575	1084
25°	3491	3374	3132	2982	2927	1606
35°	3008	2821	2500	2269	2188	1883
45°	2459	2214	1830	1570	1482	1899
55°	1870	1584	1189	970	900	1671
65°	1263	966	637	512	501	1252
75°	673	417	293	267	264	712
85°	157	80	70	70	70	181
90°	2	31	84	79	81	16
95°	125	149	153	153	149	139
105°	515	522	527	531	531	543
115°	958	971	967	965	958	947
125°	1393	1414	1407	1400	1397	1245
135°	1802	1828	1833	1831	1824	1393
145°	2187	2204	2218	2221	2211	1367
155°	2501	2508	2516	2528	2520	1151
165°	2721	2718	2718	2735	2723	768
175°	2831	2824	2819	2836	2822	269
180°	2836	2836	2836	2836	2836	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4043.6	4043.6	4043.6	4043.6	4043.6
2.5°	4061.8	4043.6	4003.2	4040.0	4032.6
5°	4043.6	4025.3	3977.5	4010.5	3999.7
7.5°	4010.5	3988.8	3937.6	3951.9	3933.7
10°	3966.7	3941.1	3868.0	3856.8	3835.1
12.5°	3911.9	3878.9	3779.9	3758.2	3717.8
15°	3845.9	3805.6	3681.3	3611.8	3575.3
17.5°	3769.0	3710.4	3556.7	3476.4	3417.7
20°	3681.3	3607.9	3425.1	3333.8	3253.0
22.5°	3586.2	3502.0	3289.6	3165.3	3110.6
25°	3491.1	3373.8	3132.3	2982.4	2927.3
27.5°	3377.7	3253.0	2985.9	2814.0	2729.7
30°	3257.0	3117.6	2824.8	2638.5	2539.5
32.5°	3139.7	2971.2	2671.5	2451.8	2360.1
35°	3008.1	2821.3	2499.5	2268.9	2188.1
37.5°	2880.0	2678.5	2338.4	2085.6	1994.4
40°	2744.5	2525.1	2169.9	1910.2	1815.0
42.5°	2605.4	2371.4	2001.8	1730.8	1639.6
45°	2459.1	2213.8	1829.8	1569.7	1481.9
47.5°	2320.1	2060.4	1665.2	1405.1	1324.7
50°	2166.4	1906.7	1504.1	1251.3	1174.8
52.5°	2016.2	1741.6	1350.3	1108.8	1039.3
55°	1869.8	1584.5	1189.2	969.8	900.3
57.5°	1719.9	1427.2	1046.7	841.7	783.1
60°	1566.2	1273.4	896.4	710.1	651.5
62.5°	1416.3	1123.6	768.3	592.9	563.7
65°	1262.6	966.0	636.7	512.5	501.2
67.5°	1116.2	819.5	512.5	450.0	439.1
70°	962.5	677.1	424.4	387.8	373.1
72.5°	816.1	545.1	354.8	325.7	318.4
75°	673.2	416.9	292.8	267.1	263.6
77.5°	530.8	296.2	230.6	215.9	208.5
80°	398.8	212.4	175.5	161.1	161.1
82.5°	278.0	142.8	120.7	113.3	113.3
85°	157.3	80.4	69.5	69.5	69.5
87.5°	58.6	29.1	29.1	25.6	25.6
90°	2.5	30.8	83.8	78.7	81.2
92.5°	53.0	71.8	74.4	77.0	77.0
95°	124.8	148.8	153.0	153.0	148.8
97.5°	207.8	230.0	239.5	239.5	239.5
100°	303.5	323.2	330.0	330.0	327.5
102.5°	404.5	419.0	428.4	431.0	428.4
105°	514.8	521.6	526.8	531.0	531.0
107.5°	624.2	634.5	634.5	636.2	624.2
110°	730.3	744.0	744.0	744.0	737.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	844.8	859.3	856.8	849.9	844.8
115°	957.7	971.3	967.1	964.6	957.7
117.5°	1069.8	1088.5	1076.5	1069.8	1062.9
120°	1182.6	1201.4	1182.6	1182.6	1174.9
122.5°	1285.2	1309.1	1297.1	1290.3	1285.2
125°	1392.9	1414.3	1407.4	1399.8	1397.2
127.5°	1498.1	1524.6	1515.2	1505.0	1498.1
130°	1596.4	1627.3	1622.9	1617.8	1608.4
132.5°	1706.7	1730.7	1732.4	1720.4	1713.6
135°	1801.6	1828.1	1833.3	1830.8	1823.9
137.5°	1907.7	1929.1	1933.3	1931.6	1921.4
140°	2000.9	2022.3	2034.3	2034.3	2024.9
142.5°	2096.7	2118.1	2124.9	2127.4	2118.1
145°	2187.3	2204.4	2218.1	2220.6	2211.3
147.5°	2268.6	2289.9	2300.2	2304.4	2295.1
150°	2352.4	2366.9	2376.3	2384.0	2376.3
152.5°	2426.7	2441.2	2453.2	2462.7	2453.2
155°	2501.2	2507.9	2515.7	2527.7	2519.9
157.5°	2565.3	2570.4	2574.6	2591.8	2579.8
160°	2622.6	2627.7	2630.2	2644.8	2634.6
162.5°	2675.6	2675.6	2678.2	2694.4	2682.4
165°	2720.9	2718.3	2718.3	2735.4	2723.4
167.5°	2761.9	2754.2	2754.2	2771.4	2759.4
170°	2792.7	2785.9	2783.3	2800.4	2785.9
172.5°	2814.1	2807.2	2804.7	2821.8	2807.2
175°	2831.2	2824.4	2819.2	2836.3	2821.8
177.5°	2840.6	2833.7	2828.6	2843.2	2828.6
180°	2836.3	2836.3	2836.3	2836.3	2836.3

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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	12.55	13.39	13.51	14.36	15.61	8.51	9.35	9.47	10.32	11.57
	3H	14.23	14.98	15.19	15.95	17.23	9.70	10.45	10.66	11.42	12.70
	4H	14.83	15.54	15.81	16.52	17.81	10.14	10.85	11.12	11.83	13.12
	6H	15.25	15.90	16.24	16.89	18.19	10.46	11.11	11.45	12.09	13.39
	8H	15.37	16.00	16.37	17.00	18.29	10.55	11.17	11.54	12.17	13.46
	12H	15.43	16.03	16.44	17.02	18.34	10.59	11.18	11.59	12.17	13.49
4H	2H	12.57	13.28	13.55	14.26	15.55	9.11	9.82	10.09	10.79	12.08
	3H	14.39	14.98	15.39	15.99	17.29	10.45	11.04	11.44	12.05	13.35
	4H	15.08	15.62	16.08	16.62	17.95	10.99	11.53	12.00	12.53	13.86
	6H	15.59	16.06	16.61	17.08	18.40	11.41	11.87	12.42	12.89	14.22
	8H	15.77	16.20	16.78	17.22	18.55	11.53	11.96	12.55	12.98	14.32
	12H	15.86	16.25	16.89	17.28	18.62	11.59	11.98	12.63	13.02	14.36
8H	4H	15.05	15.48	16.06	16.50	17.84	11.27	11.70	12.29	12.72	14.06
	6H	15.61	15.97	16.65	17.03	18.36	11.78	12.14	12.82	13.20	14.53
	8H	15.82	16.14	16.87	17.18	18.54	11.97	12.28	13.01	13.33	14.68
	12H	15.96	16.24	17.01	17.28	18.67	12.08	12.36	13.13	13.40	14.79
12H	4H	15.00	15.39	16.03	16.42	17.77	11.28	11.67	12.31	12.70	14.04
	6H	15.59	15.90	16.63	16.94	18.30	11.83	12.14	12.88	13.19	14.54
	8H	15.80	16.08	16.85	17.12	18.52	12.03	12.31	13.08	13.35	14.75