

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: P917549

Luminaire Tested: DFN2DIP-SQ3F0-120D060US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917549
REPORT IS A COMBINATION OF REPORTS P901433 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D060US930-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

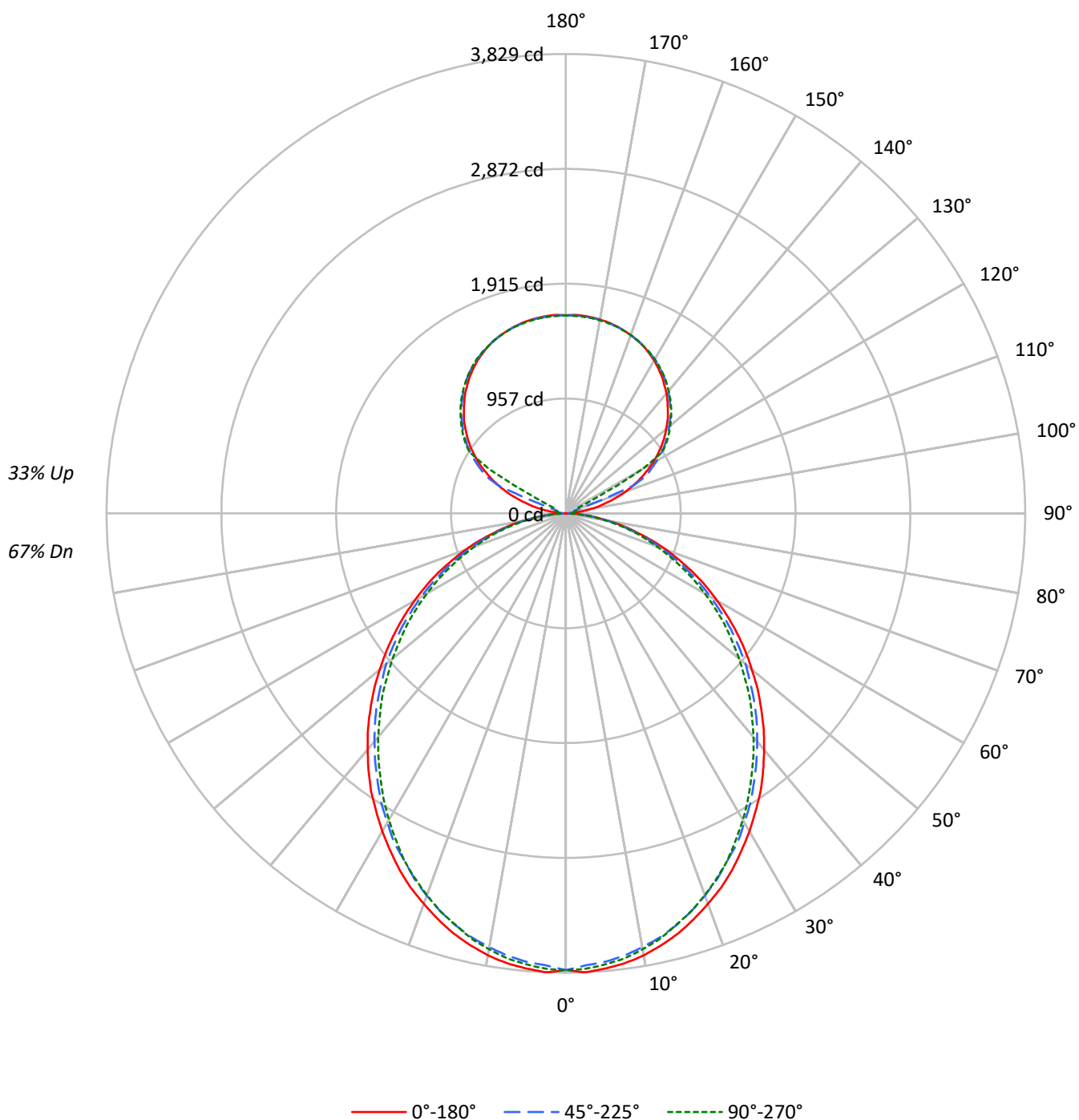
Lumens per Lamp: N/A
Luminaire Lumens: 14528.6 lumens
Efficiency: N/A
Efficacy: 85.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 170.9
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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71
1	102	97	93	90	95	92	88	85	81	79	76	72	70	68	63	62	60
2	92	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33
6	66	53	45	39	62	50	43	37	45	39	34	41	35	32	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4362	4362	4362
5°	4366	4298	4329
10°	4328	4237	4269
15°	4261	4165	4176
20°	4173	4065	4081
25°	4084	3946	3971
30°	3974	3835	3832
35°	3870	3705	3684
40°	3741	3574	3544
45°	3613	3442	3401
50°	3473	3303	3235
55°	3326	3142	3082
60°	3160	2952	2906
65°	2978	2755	2700
70°	2746	2514	2477
75°	2426	2225	2268
80°	2039	1857	1875
85°	1435	1230	1228

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3613 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	358.3	2.5
10°-20°	1008.1	6.9
20°-30°	1481.5	10.2
30°-40°	1720.7	11.8
40°-50°	1718.6	11.8
50°-60°	1498.5	10.3
60°-70°	1107.8	7.6
70°-80°	626.7	4.3
80°-90°	168.3	1.2
90°-100°	54.4	0.4
100°-110°	202.9	1.4
110°-120°	538.2	3.7
120°-130°	892.7	6.1
130°-140°	948.2	6.5
140°-150°	881.3	6.1
150°-160°	708.5	4.9
160°-170°	456.5	3.1
170°-180°	157.1	1.1
0°-30°	2848.0	19.6
0°-40°	4568.7	31.4
0°-60°	7785.8	53.6
0°-90°	9688.6	66.7
90°-120°	795.6	5.5
90°-150°	3517.8	24.2
90°-180°	4840.0	33.3
0°-180°	14528.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3807	3807	3807	3807	3807	
5°	3807	3792	3752	3781	3774	361
15°	3624	3602	3554	3569	3551	1021
25°	3280	3251	3188	3196	3188	1509
35°	2830	2793	2734	2712	2694	1767
45°	2303	2277	2222	2182	2167	1777
55°	1743	1720	1677	1633	1614	1558
65°	1175	1153	1117	1084	1065	1162
75°	615	608	589	567	575	656
85°	150	146	143	132	128	167
90°	1	14	24	30	32	13
95°	78	38	47	53	51	92
105°	363	399	73	86	91	388
115°	687	707	737	184	98	676
125°	971	987	1009	1018	1021	866
135°	1202	1221	1232	1244	1241	928
145°	1394	1393	1413	1422	1416	872
155°	1535	1524	1539	1546	1536	707
165°	1618	1610	1614	1622	1614	457
175°	1654	1646	1648	1657	1645	157
180°	1651	1651	1651	1651	1651	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3806.9	3806.9	3806.9	3806.9	3806.9
2.5°	3829.0	3810.7	3770.3	3806.9	3799.9
5°	3806.9	3792.4	3752.1	3781.2	3774.2
7.5°	3781.2	3759.4	3719.1	3748.6	3741.2
10°	3741.2	3715.6	3671.7	3700.8	3690.0
12.5°	3686.0	3664.3	3620.4	3638.7	3631.3
15°	3623.9	3602.2	3554.4	3569.1	3550.9
17.5°	3547.0	3525.3	3477.5	3495.8	3477.5
20°	3462.7	3441.0	3389.8	3400.6	3386.3
22.5°	3378.8	3345.8	3298.0	3298.0	3290.7
25°	3279.8	3250.7	3188.5	3195.6	3188.5
27.5°	3169.9	3144.3	3096.9	3086.0	3067.8
30°	3060.4	3030.9	2976.1	2965.2	2950.5
32.5°	2943.1	2921.4	2862.7	2840.6	2825.8
35°	2829.7	2793.2	2734.5	2712.4	2694.2
37.5°	2701.5	2668.6	2609.9	2584.3	2566.0
40°	2569.9	2540.4	2481.7	2449.1	2434.3
42.5°	2441.7	2412.2	2353.9	2317.1	2295.3
45°	2302.6	2277.0	2221.9	2181.9	2167.1
47.5°	2167.1	2141.5	2082.8	2042.5	2020.7
50°	2024.2	2006.0	1954.7	1903.4	1885.1
52.5°	1885.1	1859.5	1812.2	1771.7	1746.1
55°	1742.6	1720.5	1676.6	1632.7	1614.5
57.5°	1599.7	1581.4	1533.7	1489.8	1475.0
60°	1456.8	1442.4	1391.1	1350.8	1339.9
62.5°	1317.8	1292.1	1255.6	1219.1	1204.4
65°	1175.3	1153.1	1116.6	1083.5	1065.4
67.5°	1028.8	1010.2	977.5	951.9	937.2
70°	893.2	878.5	845.5	819.9	805.5
72.5°	754.2	739.5	721.2	695.6	684.7
75°	614.8	607.8	589.1	567.4	574.8
77.5°	490.5	475.7	468.4	457.5	446.6
80°	366.2	362.3	355.0	344.1	336.7
82.5°	248.9	248.9	245.5	230.7	230.7
85°	149.9	146.4	142.9	131.7	128.2
87.5°	66.0	58.6	51.3	40.4	36.5
90°	1.1	14.3	23.8	29.9	32.2
92.5°	29.9	25.1	28.6	31.1	32.2
95°	77.6	38.2	46.6	52.7	51.4
97.5°	139.7	41.8	60.8	64.6	65.7
100°	211.5	47.8	68.1	77.6	80.0
102.5°	290.2	288.0	70.5	83.6	87.2
105°	363.1	399.0	72.9	85.9	90.8
107.5°	448.0	477.8	75.3	88.4	93.2
110°	529.3	554.2	209.1	89.7	94.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	605.7	627.1	606.8	91.9	95.6
115°	686.9	707.2	737.1	184.0	98.0
117.5°	757.3	781.2	801.6	630.7	317.7
120°	836.3	854.1	875.7	890.0	728.7
122.5°	903.0	922.2	946.2	953.2	954.6
125°	971.2	986.8	1009.4	1017.8	1021.3
127.5°	1033.3	1050.0	1068.0	1079.9	1081.1
130°	1091.8	1111.0	1124.1	1137.3	1136.1
132.5°	1151.6	1167.2	1180.2	1191.0	1189.8
135°	1201.8	1221.0	1231.6	1243.7	1241.2
137.5°	1254.3	1268.6	1280.7	1292.6	1289.1
140°	1305.6	1315.3	1328.4	1339.1	1333.2
142.5°	1348.7	1357.1	1372.6	1382.1	1376.1
145°	1394.2	1392.9	1413.2	1421.6	1415.6
147.5°	1433.5	1429.9	1450.2	1456.1	1451.5
150°	1471.8	1463.4	1482.5	1489.6	1483.7
152.5°	1504.0	1494.4	1512.3	1519.6	1511.2
155°	1535.0	1524.4	1538.7	1545.8	1536.3
157.5°	1560.2	1550.6	1561.4	1569.8	1560.2
160°	1581.7	1574.4	1581.7	1588.8	1580.5
162.5°	1600.7	1593.6	1599.5	1607.9	1597.2
165°	1617.5	1610.4	1613.9	1622.3	1613.9
167.5°	1630.6	1623.4	1627.1	1635.5	1624.6
170°	1641.4	1634.2	1636.6	1644.9	1634.2
172.5°	1648.5	1641.4	1643.8	1652.2	1641.4
175°	1654.5	1646.1	1648.5	1656.8	1644.9
177.5°	1656.8	1648.5	1649.8	1658.2	1647.4
180°	1650.9	1650.9	1650.9	1650.9	1650.9

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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	13.77	14.80	14.57	15.62	16.64	13.32	14.36	14.12	15.18	16.19
	3H	15.44	16.37	16.25	17.20	18.24	14.95	15.88	15.76	16.71	17.75
	4H	16.03	16.91	16.86	17.75	18.80	15.54	16.41	16.36	17.25	18.30
	6H	16.43	17.24	17.28	18.09	19.16	15.93	16.74	16.78	17.59	18.66
	8H	16.54	17.31	17.39	18.18	19.24	16.04	16.81	16.89	17.68	18.74
	12H	16.59	17.33	17.45	18.19	19.28	16.09	16.82	16.94	17.68	18.77
4H	2H	14.25	15.12	15.08	15.96	17.01	13.89	14.77	14.72	15.61	16.66
	3H	16.12	16.85	16.97	17.73	18.79	15.71	16.45	16.56	17.32	18.39
	4H	16.84	17.51	17.70	18.38	19.47	16.42	17.08	17.27	17.95	19.05
	6H	17.36	17.94	18.23	18.83	19.93	16.93	17.51	17.80	18.40	19.50
	8H	17.51	18.05	18.39	18.94	20.05	17.07	17.61	17.95	18.50	19.61
	12H	17.59	18.08	18.49	18.98	20.10	17.14	17.63	18.04	18.54	19.65
8H	4H	17.05	17.59	17.92	18.47	19.58	16.67	17.21	17.55	18.10	19.21
	6H	17.68	18.12	18.58	19.06	20.17	17.29	17.74	18.20	18.67	19.78
	8H	17.90	18.29	18.81	19.22	20.34	17.50	17.90	18.42	18.82	19.95
	12H	18.03	18.38	18.95	19.30	20.48	17.62	17.97	18.54	18.89	20.07
12H	4H	17.04	17.52	17.94	18.43	19.55	16.67	17.16	17.57	18.06	19.18
	6H	17.71	18.10	18.62	19.03	20.16	17.34	17.73	18.25	18.66	19.78
	8H	17.95	18.30	18.87	19.22	20.40	17.57	17.92	18.49	18.84	20.02

END OF REPORT