

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: P909326

Luminaire Tested: DFN2DIP-SQ3F0-110D050US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909326
REPORT IS A COMBINATION OF REPORTS P899894 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-110D050US840-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

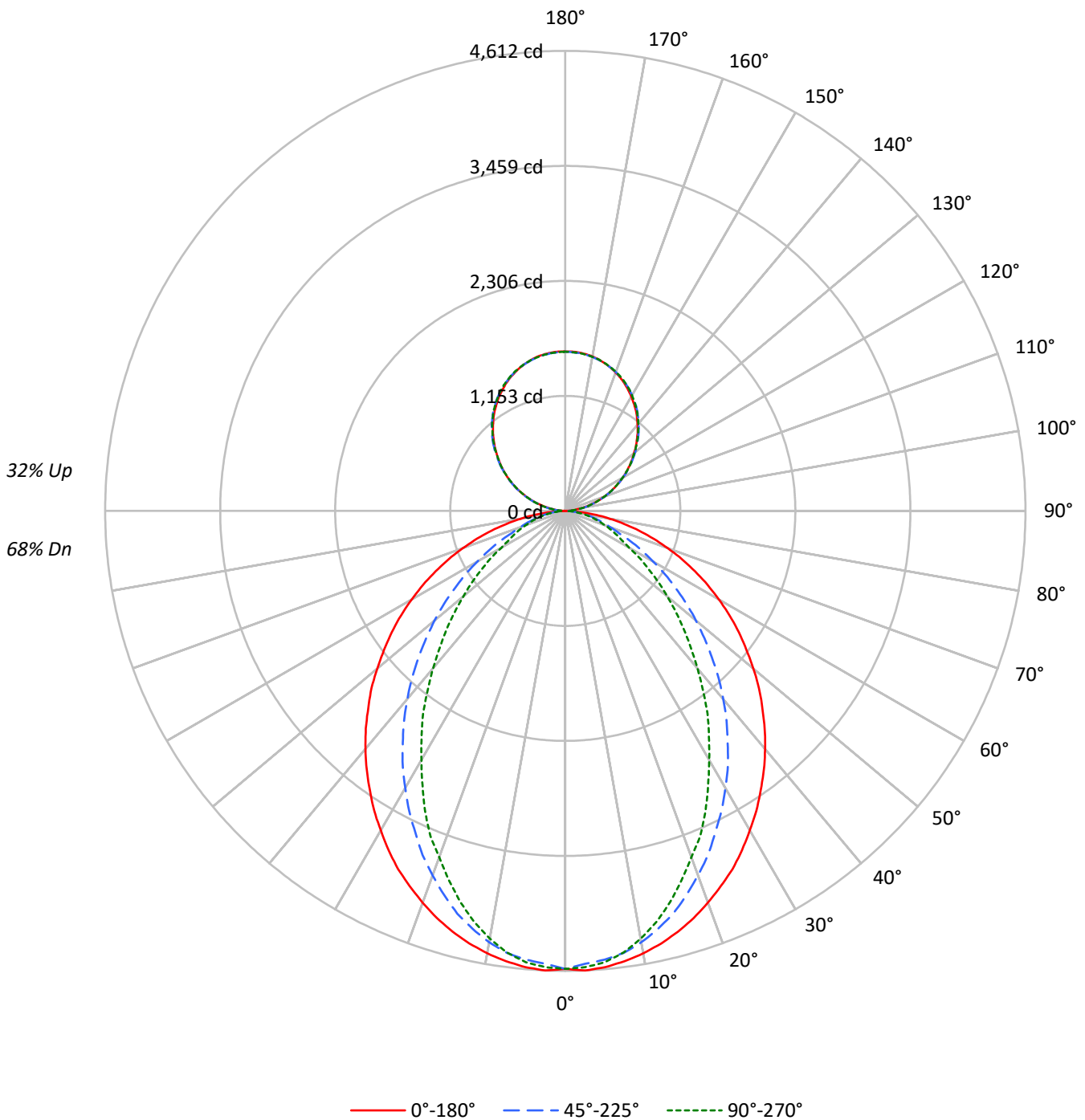
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13910.9 lumens
Efficiency: N/A
Efficacy: 93.5 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: Semi-Direct

Input Watts (W): 148.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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				20	
RC	80				70				50				30				10				0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	73	73	73	68				68
1	102	98	94	91	97	93	90	87	83	80	78	74	72	70	65	64	63	59				59
2	94	87	81	76	88	82	77	72	73	69	66	66	62	60	58	56	54	50				50
3	86	77	70	64	81	73	66	61	65	60	56	59	55	51	52	49	47	43				43
4	79	68	61	55	74	65	58	53	59	53	49	53	48	45	47	44	41	38				38
5	73	61	53	47	69	58	51	46	53	47	42	48	43	39	43	39	36	33				33
6	68	56	47	42	64	53	46	40	48	42	37	43	38	35	39	35	32	29				29
7	63	50	42	37	59	48	41	36	44	38	33	40	35	31	36	32	29	26				26
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26	24				24
9	55	42	35	30	52	40	34	29	37	31	27	34	29	25	31	27	24	22				22
10	51	39	32	27	48	37	31	26	34	29	25	31	27	23	29	25	22	20				20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5261	5261	5261
5°	5266	5174	5209
10°	5210	5069	5037
15°	5135	4898	4774
20°	5037	4664	4451
25°	4936	4402	4139
30°	4802	4133	3744
35°	4671	3845	3398
40°	4537	3548	3000
45°	4382	3218	2640
50°	4220	2886	2289
55°	4052	2530	1951
60°	3857	2160	1604
65°	3632	1784	1442
70°	3360	1432	1302
75°	3017	1255	1181
80°	2521	1042	1019
85°	1709	679	756

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4382 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	430.3	3.1
10°-20°	1181.2	8.5
20°-30°	1658.4	11.9
30°-40°	1807.8	13.0
40°-50°	1661.5	11.9
50°-60°	1304.9	9.4
60°-70°	849.4	6.1
70°-80°	437.2	3.1
80°-90°	116.2	0.8
90°-100°	98.8	0.7
100°-110°	314.0	2.3
110°-120°	537.3	3.9
120°-130°	706.6	5.1
130°-140°	793.2	5.7
140°-150°	777.8	5.6
150°-160°	652.5	4.7
160°-170°	432.7	3.1
170°-180°	151.2	1.1
0°-30°	3269.9	23.5
0°-40°	5077.7	36.5
0°-60°	8044.1	57.8
0°-90°	9446.8	67.9
90°-120°	950.1	6.8
90°-150°	3227.7	23.2
90°-180°	4464.0	32.1
0°-180°	13910.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4591	4591	4591	4591	4591	
5°	4591	4570	4516	4554	4541	435
15°	4367	4321	4180	4101	4060	1231
25°	3964	3831	3556	3386	3324	1823
35°	3416	3203	2838	2576	2484	2138
45°	2792	2514	2078	1782	1683	2156
55°	2123	1799	1350	1101	1022	1897
65°	1434	1097	723	582	569	1421
75°	764	473	332	303	299	808
85°	178	91	79	79	79	205
90°	1	17	47	44	46	14
95°	70	84	86	86	84	78
105°	290	294	297	299	299	306
115°	539	547	544	543	539	533
125°	784	796	792	788	787	701
135°	1014	1029	1032	1031	1027	784
145°	1232	1241	1249	1250	1245	769
155°	1408	1412	1416	1423	1419	648
165°	1532	1530	1530	1540	1533	432
175°	1594	1590	1587	1597	1589	151
180°	1597	1597	1597	1597	1597	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4591.2	4591.2	4591.2	4591.2	4591.2
2.5°	4611.9	4591.2	4545.3	4587.2	4578.8
5°	4591.2	4570.4	4516.2	4553.7	4541.4
7.5°	4553.7	4528.9	4470.8	4487.1	4466.3
10°	4503.9	4474.7	4391.9	4379.1	4354.4
12.5°	4441.7	4404.2	4291.8	4267.1	4221.2
15°	4366.8	4320.9	4179.8	4101.0	4059.5
17.5°	4279.5	4213.0	4038.4	3947.1	3880.5
20°	4179.8	4096.5	3888.9	3785.3	3693.6
22.5°	4071.9	3976.1	3735.1	3594.0	3531.8
25°	3963.8	3830.7	3556.5	3386.4	3323.8
27.5°	3835.2	3693.6	3390.3	3195.0	3099.4
30°	3698.0	3539.8	3207.4	2995.8	2883.4
32.5°	3564.9	3373.6	3033.2	2783.8	2679.8
35°	3415.5	3203.4	2838.0	2576.2	2484.5
37.5°	3270.0	3041.2	2655.0	2368.0	2264.5
40°	3116.1	2867.1	2463.8	2168.8	2060.8
42.5°	2958.3	2692.5	2272.9	1965.2	1861.6
45°	2792.2	2513.6	2077.6	1782.2	1682.6
47.5°	2634.3	2339.5	1890.7	1595.3	1504.1
50°	2459.7	2164.8	1707.8	1420.8	1333.9
52.5°	2289.2	1977.5	1533.2	1259.0	1180.0
55°	2122.9	1799.0	1350.2	1101.2	1022.3
57.5°	1952.9	1620.4	1188.4	955.7	889.1
60°	1778.3	1445.9	1017.8	806.3	739.7
62.5°	1608.1	1275.8	872.4	673.2	640.1
65°	1433.5	1096.7	723.0	581.9	569.1
67.5°	1267.4	930.6	581.9	510.9	498.6
70°	1092.8	768.8	481.8	440.4	423.6
72.5°	926.6	618.9	402.9	369.8	361.4
75°	764.4	473.4	332.3	303.3	299.3
77.5°	602.6	336.4	261.9	245.1	236.7
80°	452.7	241.2	199.2	183.0	183.0
82.5°	315.6	162.2	137.1	128.8	128.8
85°	178.5	91.3	78.9	78.9	78.9
87.5°	66.6	33.0	33.0	29.1	29.1
90°	1.4	17.4	47.2	44.3	45.7
92.5°	29.9	40.4	41.9	43.3	43.3
95°	70.3	83.8	86.1	86.1	83.8
97.5°	116.9	129.5	134.8	134.8	134.8
100°	170.9	182.0	185.8	185.8	184.4
102.5°	227.7	235.9	241.2	242.7	241.2
105°	289.8	293.7	296.6	298.9	298.9
107.5°	351.4	357.2	357.2	358.2	351.4
110°	411.1	418.9	418.9	418.9	415.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	475.6	483.8	482.4	478.6	475.6
115°	539.2	546.9	544.5	543.1	539.2
117.5°	602.3	612.9	606.1	602.3	598.4
120°	665.8	676.4	665.8	665.8	661.5
122.5°	723.6	737.1	730.3	726.5	723.6
125°	784.3	796.3	792.4	788.1	786.7
127.5°	843.4	858.4	853.1	847.3	843.4
130°	898.9	916.2	913.7	910.9	905.5
132.5°	961.0	974.4	975.4	968.7	964.8
135°	1014.4	1029.3	1032.2	1030.8	1026.9
137.5°	1074.1	1086.1	1088.5	1087.5	1081.8
140°	1126.5	1138.6	1145.3	1145.3	1140.0
142.5°	1180.4	1192.6	1196.4	1197.8	1192.6
145°	1231.5	1241.1	1248.8	1250.3	1245.0
147.5°	1277.3	1289.3	1295.1	1297.5	1292.1
150°	1324.4	1332.6	1337.9	1342.2	1337.9
152.5°	1366.3	1374.5	1381.2	1386.5	1381.2
155°	1408.2	1412.0	1416.3	1423.1	1418.8
157.5°	1444.3	1447.1	1449.6	1459.3	1452.5
160°	1476.5	1479.5	1480.9	1489.0	1483.3
162.5°	1506.4	1506.4	1507.8	1517.0	1510.3
165°	1532.0	1530.5	1530.5	1540.1	1533.4
167.5°	1555.0	1550.6	1550.6	1560.3	1553.6
170°	1572.4	1568.5	1567.1	1576.7	1568.5
172.5°	1584.4	1580.5	1579.1	1588.7	1580.5
175°	1594.1	1590.1	1587.3	1596.9	1588.7
177.5°	1599.3	1595.5	1592.6	1600.7	1592.6
180°	1596.9	1596.9	1596.9	1596.9	1596.9



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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	14.41	15.41	15.20	16.22	17.21	10.37	11.37	11.16	12.18	13.18
	3H	16.10	16.99	16.90	17.81	18.83	11.57	12.46	12.37	13.28	14.30
	4H	16.71	17.55	17.53	18.38	19.42	12.02	12.86	12.84	13.69	14.73
	6H	17.14	17.91	17.97	18.75	19.80	12.34	13.12	13.18	13.96	15.00
	8H	17.26	18.00	18.11	18.86	19.91	12.44	13.18	13.28	14.03	15.08
	12H	17.33	18.03	18.18	18.88	19.96	12.48	13.19	13.33	14.03	15.11
4H	2H	14.45	15.29	15.28	16.12	17.15	10.98	11.83	11.81	12.66	13.69
	3H	16.29	16.99	17.13	17.85	18.90	12.34	13.04	13.18	13.91	14.96
	4H	16.98	17.62	17.83	18.48	19.56	12.89	13.53	13.74	14.39	15.47
	6H	17.50	18.05	18.37	18.93	20.02	13.31	13.86	14.18	14.75	15.83
	8H	17.68	18.19	18.55	19.07	20.16	13.44	13.95	14.31	14.83	15.93
	12H	17.78	18.24	18.67	19.14	20.24	13.51	13.97	14.40	14.87	15.97
8H	4H	16.96	17.47	17.83	18.35	19.45	13.18	13.69	14.05	14.57	15.67
	6H	17.53	17.95	18.43	18.87	19.97	13.70	14.12	14.60	15.04	16.14
	8H	17.74	18.12	18.65	19.03	20.14	13.88	14.26	14.79	15.18	16.29
	12H	17.88	18.21	18.79	19.12	20.28	14.01	14.34	14.92	15.24	16.41
12H	4H	16.92	17.38	17.81	18.28	19.38	13.19	13.65	14.08	14.55	15.65
	6H	17.50	17.88	18.41	18.79	19.90	13.75	14.12	14.66	15.04	16.15
	8H	17.73	18.06	18.64	18.96	20.13	13.96	14.29	14.87	15.20	16.36