

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: P922978

Luminaire Tested: DFN2DIP-SQ3F0-110D080US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922978
REPORT IS A COMBINATION OF REPORTS P899948 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-110D080US940-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

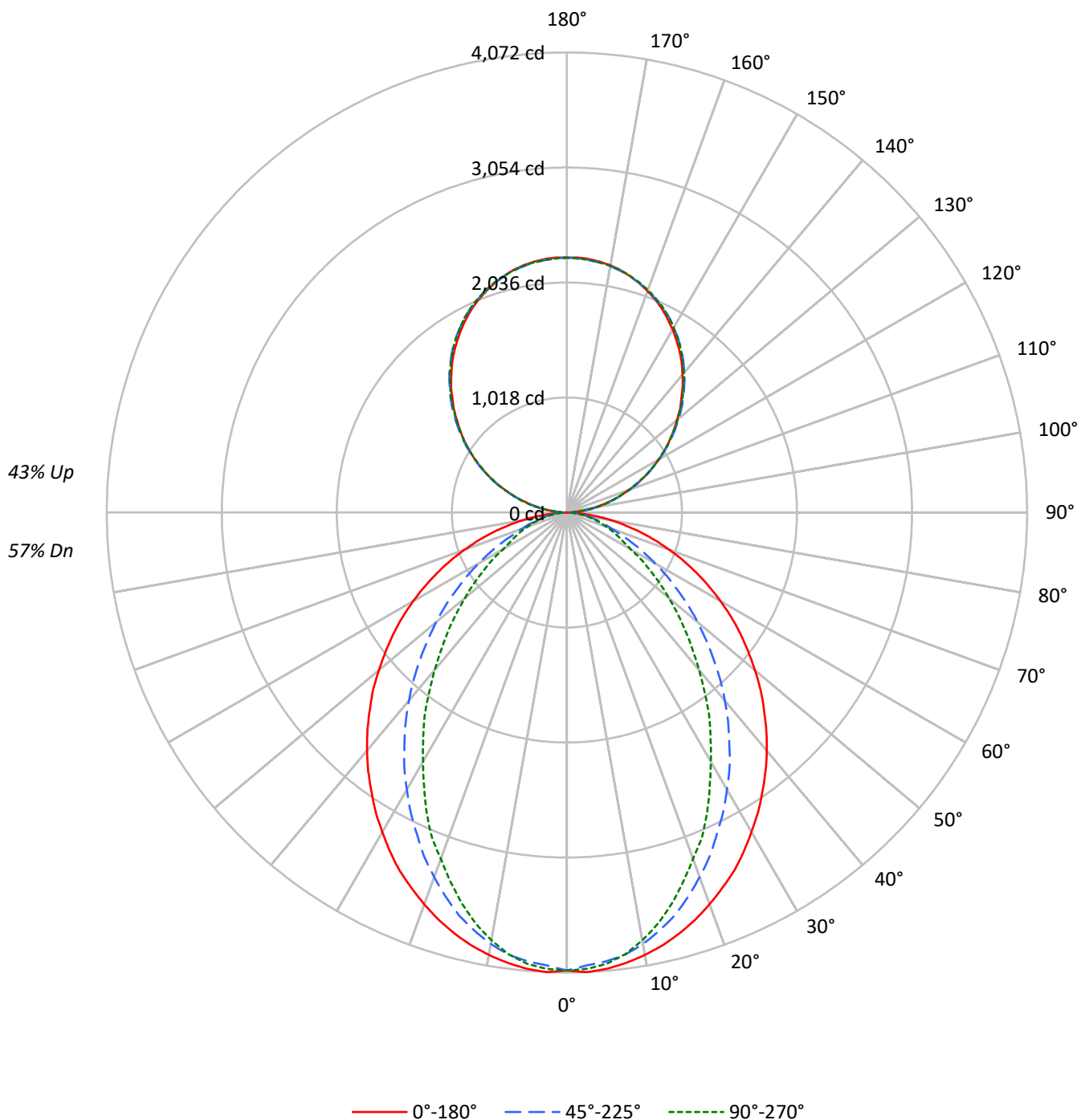
Lumens per Lamp: N/A
Luminaire Lumens: 14650.8 lumens
Efficiency: N/A
Efficacy: 85.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 172.3
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
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63
1	100	96	92	89	93	89	86	83	77	75	73	66	65	63	56	55	54
2	91	84	78	73	85	79	74	69	68	65	61	59	56	54	50	48	46
3	84	75	67	62	78	70	64	58	61	56	52	53	49	46	45	42	40
4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35
5	71	59	52	46	66	56	49	43	49	43	39	43	38	35	37	33	31
6	65	54	46	40	61	50	43	38	44	39	34	39	34	31	34	30	27
7	61	49	41	35	57	46	39	34	40	35	31	35	31	28	31	27	25
8	56	44	37	31	53	42	35	30	37	31	27	33	28	25	28	25	22
9	53	41	33	28	49	38	32	27	34	29	25	30	26	22	26	23	20
10	49	37	30	26	46	35	29	24	32	26	22	28	24	20	24	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4645	4645	4645
5°	4650	4568	4599
10°	4601	4476	4448
15°	4534	4325	4215
20°	4448	4118	3930
25°	4359	3887	3655
30°	4240	3650	3306
35°	4124	3396	3000
40°	4006	3133	2649
45°	3869	2842	2332
50°	3727	2548	2021
55°	3578	2234	1723
60°	3406	1907	1417
65°	3207	1575	1273
70°	2967	1265	1150
75°	2663	1108	1043
80°	2226	920	900
85°	1510	599	666

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3869 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	379.9	2.6
10°-20°	1043.0	7.1
20°-30°	1464.4	10.0
30°-40°	1596.2	10.9
40°-50°	1467.1	10.0
50°-60°	1152.2	7.9
60°-70°	750.0	5.1
70°-80°	386.0	2.6
80°-90°	105.0	0.7
90°-100°	139.6	1.0
100°-110°	443.6	3.0
110°-120°	759.1	5.2
120°-130°	998.3	6.8
130°-140°	1120.6	7.6
140°-150°	1098.9	7.5
150°-160°	921.8	6.3
160°-170°	611.3	4.2
170°-180°	213.7	1.5
0°-30°	2887.3	19.7
0°-40°	4483.6	30.6
0°-60°	7102.9	48.5
0°-90°	8343.9	57.0
90°-120°	1342.3	9.2
90°-150°	4560.1	31.1
90°-180°	6307.0	43.0
0°-180°	14650.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4054	4054	4054	4054	4054	
5°	4054	4036	3988	4021	4010	384
15°	3856	3815	3691	3621	3584	1087
25°	3500	3382	3140	2990	2935	1610
35°	3016	2829	2506	2275	2194	1888
45°	2466	2220	1834	1574	1486	1904
55°	1875	1588	1192	972	903	1675
65°	1266	968	638	514	502	1255
75°	675	418	294	268	264	714
85°	158	81	70	70	70	181
90°	2	24	67	63	65	14
95°	99	118	122	122	118	111
105°	410	415	419	422	422	432
115°	762	773	769	767	762	753
125°	1108	1125	1120	1113	1111	990
135°	1433	1454	1458	1456	1451	1108
145°	1740	1754	1764	1766	1759	1087
155°	1990	1995	2001	2010	2004	916
165°	2164	2162	2162	2176	2166	611
175°	2252	2247	2242	2256	2244	214
180°	2256	2256	2256	2256	2256	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4054.0	4054.0	4054.0	4054.0	4054.0
2.5°	4072.3	4054.0	4013.5	4050.5	4043.1
5°	4054.0	4035.7	3987.8	4020.9	4010.0
7.5°	4020.9	3999.1	3947.7	3962.1	3943.8
10°	3976.9	3951.2	3878.0	3866.7	3845.0
12.5°	3922.0	3888.9	3789.7	3767.8	3727.3
15°	3855.8	3815.4	3690.8	3621.1	3584.5
17.5°	3778.8	3720.0	3565.9	3485.2	3426.5
20°	3690.8	3617.2	3433.9	3342.4	3261.4
22.5°	3595.5	3510.9	3298.1	3173.5	3118.6
25°	3500.1	3382.5	3140.4	2990.2	2934.9
27.5°	3386.4	3261.4	2993.7	2821.2	2736.7
30°	3265.4	3125.6	2832.2	2645.3	2546.0
32.5°	3147.8	2978.8	2678.3	2458.1	2366.2
35°	3015.9	2828.6	2506.0	2274.8	2193.8
37.5°	2887.4	2685.4	2344.4	2091.0	1999.6
40°	2751.6	2531.7	2175.5	1915.0	1819.7
42.5°	2612.2	2377.5	2007.0	1735.3	1643.8
45°	2465.5	2219.5	1834.5	1573.7	1485.8
47.5°	2326.1	2065.7	1669.5	1408.6	1328.1
50°	2171.9	1911.6	1508.0	1254.5	1177.9
52.5°	2021.3	1746.1	1353.8	1111.7	1042.0
55°	1874.6	1588.5	1192.2	972.3	902.7
57.5°	1724.4	1430.8	1049.4	843.9	785.1
60°	1570.2	1276.8	898.8	711.9	653.2
62.5°	1420.0	1126.5	770.3	594.4	565.2
65°	1265.8	968.4	638.4	513.8	502.5
67.5°	1119.1	821.7	513.8	451.1	440.2
70°	964.9	678.9	425.4	388.9	374.1
72.5°	818.1	546.5	355.8	326.5	319.1
75°	674.9	418.0	293.5	267.8	264.3
77.5°	532.1	297.0	231.2	216.4	209.0
80°	399.8	212.9	175.9	161.6	161.6
82.5°	278.7	143.2	121.1	113.7	113.7
85°	157.7	80.6	69.6	69.6	69.6
87.5°	58.8	29.2	29.2	25.7	25.7
90°	2.1	24.5	66.7	62.6	64.6
92.5°	42.2	57.2	59.2	61.2	61.2
95°	99.3	118.3	121.7	121.7	118.3
97.5°	165.3	183.0	190.5	190.5	190.5
100°	241.5	257.1	262.5	262.5	260.5
102.5°	321.7	333.3	340.7	342.8	340.7
105°	409.5	414.9	419.0	422.4	422.4
107.5°	496.5	504.7	504.7	506.0	496.5
110°	580.9	591.7	591.7	591.7	586.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	672.0	683.6	681.5	676.1	672.0
115°	761.8	772.7	769.3	767.2	761.8
117.5°	850.9	865.9	856.3	850.9	845.4
120°	940.7	955.6	940.7	940.7	934.5
122.5°	1022.3	1041.3	1031.8	1026.4	1022.3
125°	1108.0	1125.0	1119.5	1113.4	1111.4
127.5°	1191.7	1212.7	1205.2	1197.1	1191.7
130°	1269.9	1294.3	1290.9	1286.9	1279.4
132.5°	1357.6	1376.6	1378.0	1368.5	1363.1
135°	1433.1	1454.2	1458.3	1456.3	1450.8
137.5°	1517.4	1534.5	1537.8	1536.5	1528.3
140°	1591.6	1608.6	1618.1	1618.1	1610.6
142.5°	1667.8	1684.8	1690.2	1692.3	1684.8
145°	1739.9	1753.5	1764.3	1766.4	1758.9
147.5°	1804.5	1821.5	1829.6	1833.1	1825.6
150°	1871.2	1882.7	1890.2	1896.3	1890.2
152.5°	1930.3	1941.9	1951.4	1958.9	1951.4
155°	1989.5	1994.9	2001.1	2010.5	2004.5
157.5°	2040.5	2044.6	2048.0	2061.5	2052.1
160°	2086.1	2090.2	2092.2	2103.7	2095.6
162.5°	2128.2	2128.2	2130.3	2143.2	2133.7
165°	2164.3	2162.2	2162.2	2175.9	2166.3
167.5°	2196.9	2190.8	2190.8	2204.4	2194.9
170°	2221.4	2216.0	2213.9	2227.6	2216.0
172.5°	2238.5	2233.0	2231.0	2244.5	2233.0
175°	2252.0	2246.6	2242.5	2256.1	2244.5
177.5°	2259.5	2254.1	2250.0	2261.6	2250.0
180°	2256.1	2256.1	2256.1	2256.1	2256.1

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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	13.07	13.96	13.98	14.88	16.05	9.03	9.92	9.94	10.84	12.01
	3H	14.75	15.55	15.67	16.47	17.67	10.22	11.02	11.14	11.94	13.14
	4H	15.36	16.11	16.29	17.04	18.25	10.67	11.42	11.60	12.35	13.56
	6H	15.78	16.47	16.72	17.41	18.63	10.99	11.68	11.93	12.62	13.84
	8H	15.91	16.56	16.85	17.52	18.74	11.08	11.74	12.03	12.69	13.91
	12H	15.97	16.59	16.92	17.54	18.78	11.12	11.75	12.07	12.69	13.93
4H	2H	13.10	13.85	14.03	14.78	15.99	9.63	10.39	10.57	11.32	12.52
	3H	14.93	15.55	15.87	16.51	17.73	10.98	11.61	11.93	12.57	13.79
	4H	15.62	16.19	16.57	17.14	18.39	11.53	12.10	12.48	13.05	14.30
	6H	16.13	16.62	17.10	17.60	18.85	11.94	12.43	12.91	13.41	14.66
	8H	16.30	16.76	17.27	17.74	18.99	12.07	12.53	13.04	13.50	14.76
	12H	16.40	16.81	17.39	17.80	19.07	12.13	12.55	13.12	13.54	14.80
8H	4H	15.59	16.05	16.56	17.02	18.28	11.81	12.27	12.78	13.24	14.50
	6H	16.15	16.53	17.15	17.54	18.80	12.32	12.70	13.32	13.72	14.97
	8H	16.36	16.70	17.37	17.70	18.98	12.51	12.84	13.51	13.85	15.12
	12H	16.50	16.80	17.51	17.79	19.11	12.62	12.92	13.63	13.91	15.24
12H	4H	15.54	15.95	16.53	16.95	18.21	11.82	12.23	12.80	13.22	14.48
	6H	16.13	16.46	17.13	17.46	18.74	12.37	12.70	13.37	13.71	14.98
	8H	16.35	16.64	17.35	17.64	18.96	12.58	12.87	13.58	13.87	15.19