

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: P920975

Luminaire Tested: DFN2DIP-TR4F0-050D110US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920975
REPORT IS A COMBINATION OF REPORTS P902017 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D110US935-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

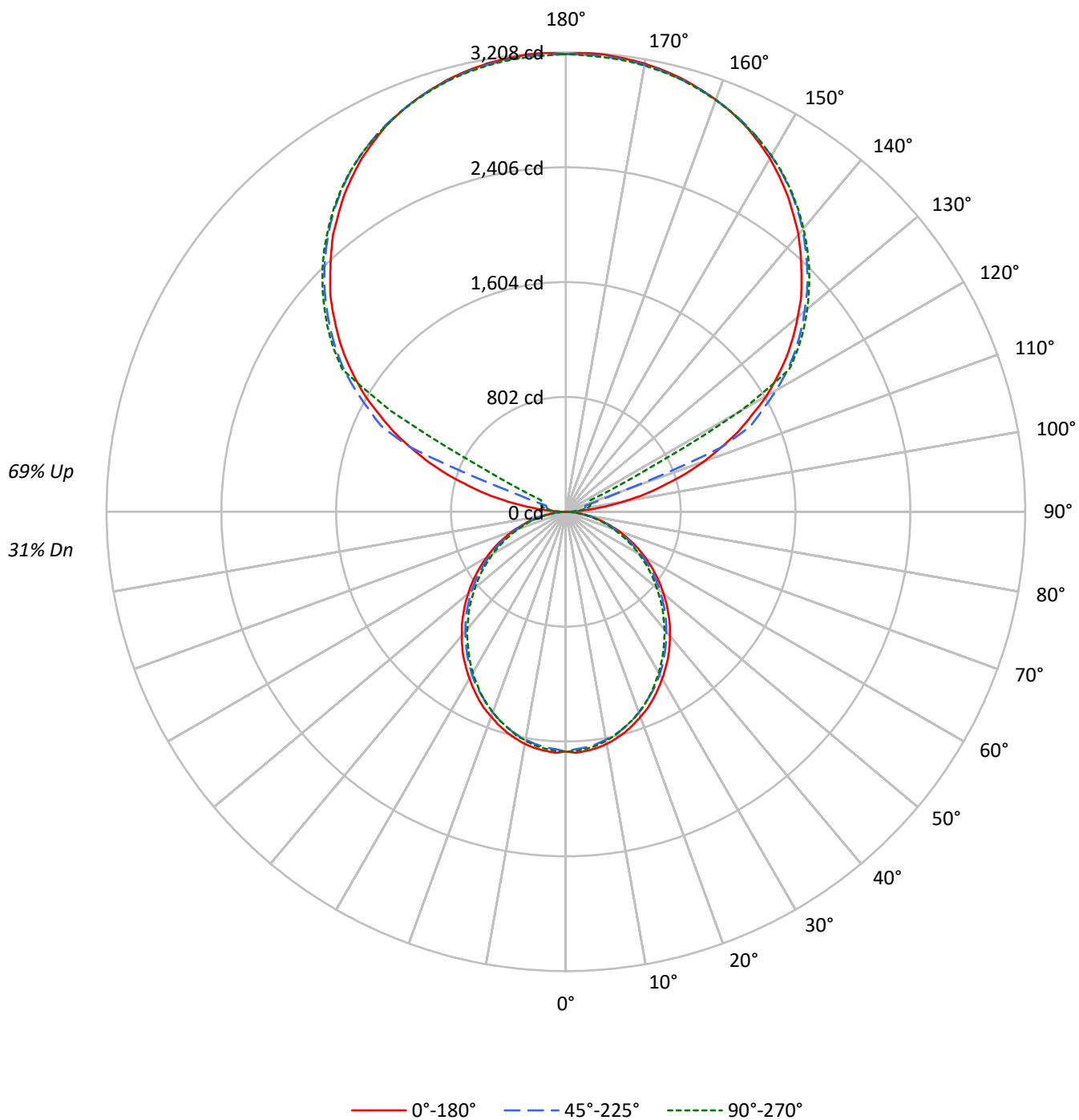
Lumens per Lamp: N/A
Luminaire Lumens: 13638.2 lumens
Efficiency: N/A
Efficacy: 107.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 126.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39
1	94	89	86	82	84	80	77	74	64	62	60	48	47	46	34	34	33
2	85	78	72	67	76	70	65	61	56	52	49	43	40	38	30	29	28
3	78	69	61	56	70	62	56	51	49	45	41	38	35	32	27	25	24
4	71	61	53	47	64	55	48	43	44	39	35	33	30	28	24	22	20
5	65	54	46	40	58	49	42	37	39	34	30	30	27	24	22	19	18
6	60	48	40	35	54	44	37	32	35	30	26	27	24	21	20	17	15
7	55	43	36	30	50	39	33	28	32	27	23	25	21	18	18	15	14
8	51	39	32	27	46	36	29	24	29	24	20	22	19	16	16	14	12
9	48	36	28	24	43	32	26	22	26	22	18	21	17	15	15	13	11
10	44	33	26	21	40	30	24	19	24	19	16	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1331	1331	1331
5°	1333	1312	1321
10°	1322	1295	1303
15°	1303	1273	1275
20°	1276	1244	1246
25°	1250	1208	1213
30°	1218	1175	1171
35°	1187	1136	1127
40°	1148	1097	1084
45°	1110	1058	1041
50°	1069	1016	991
55°	1025	968	945
60°	976	912	892
65°	922	853	829
70°	854	781	762
75°	759	696	700
80°	645	586	582
85°	467	398	385

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1696 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.7	1.2
10°-20°	443.6	3.3
20°-30°	651.9	4.8
30°-40°	757.2	5.6
40°-50°	756.2	5.5
50°-60°	659.4	4.8
60°-70°	487.4	3.6
70°-80°	275.8	2.0
80°-90°	78.4	0.6
90°-100°	105.4	0.8
100°-110°	392.9	2.9
110°-120°	1042.0	7.6
120°-130°	1728.3	12.7
130°-140°	1835.9	13.5
140°-150°	1706.2	12.5
150°-160°	1371.8	10.1
160°-170°	883.9	6.5
170°-180°	304.2	2.2
0°-30°	1253.2	9.2
0°-40°	2010.3	14.7
0°-60°	3425.9	25.1
0°-90°	4267.6	31.3
90°-120°	1540.3	11.3
90°-150°	6810.7	49.9
90°-180°	9371.0	68.7
0°-180°	13638.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1675	1675	1675	1675	1675	
5°	1675	1669	1651	1664	1661	159
15°	1595	1585	1564	1570	1562	449
25°	1443	1430	1403	1406	1403	664
35°	1245	1229	1203	1194	1186	778
45°	1013	1002	978	960	954	782
55°	767	757	738	718	710	686
65°	517	507	491	477	469	511
75°	270	267	259	250	253	289
85°	66	64	63	58	56	74
90°	2	28	46	58	62	13
95°	150	74	90	102	99	178
105°	703	773	141	166	176	751
115°	1330	1369	1427	356	190	1309
125°	1880	1910	1954	1971	1978	1677
135°	2327	2364	2384	2408	2403	1797
145°	2699	2697	2736	2752	2741	1688
155°	2972	2951	2979	2993	2974	1370
165°	3132	3118	3125	3141	3125	885
175°	3203	3187	3192	3208	3185	305
180°	3196	3196	3196	3196	3196	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1675.1	1675.1	1675.1	1675.1	1675.1
2.5°	1684.8	1676.8	1659.1	1675.1	1672.1
5°	1675.1	1668.8	1651.0	1663.8	1660.8
7.5°	1663.8	1654.2	1636.5	1649.5	1646.2
10°	1646.2	1634.9	1615.7	1628.4	1623.7
12.5°	1621.9	1612.4	1593.1	1601.1	1597.8
15°	1594.6	1585.0	1564.0	1570.5	1562.5
17.5°	1560.7	1551.2	1530.2	1538.2	1530.2
20°	1523.7	1514.2	1491.6	1496.3	1490.0
22.5°	1486.8	1472.2	1451.2	1451.2	1447.9
25°	1443.2	1430.4	1403.0	1406.1	1403.0
27.5°	1394.8	1383.5	1362.7	1357.9	1349.9
30°	1346.6	1333.7	1309.6	1304.8	1298.3
32.5°	1295.0	1285.5	1259.6	1249.9	1243.5
35°	1245.1	1229.1	1203.2	1193.5	1185.5
37.5°	1188.7	1174.2	1148.4	1137.1	1129.1
40°	1130.8	1117.8	1092.0	1077.6	1071.2
42.5°	1074.4	1061.4	1035.8	1019.5	1010.0
45°	1013.2	1001.9	977.7	960.1	953.6
47.5°	953.6	942.3	916.5	898.7	889.2
50°	890.7	882.7	860.1	837.6	829.5
52.5°	829.5	818.2	797.4	779.6	768.4
55°	766.8	757.1	737.7	718.4	710.4
57.5°	703.9	695.9	674.9	655.6	649.0
60°	641.0	634.7	612.2	594.3	589.6
62.5°	579.9	568.6	552.5	536.4	529.9
65°	517.1	507.4	491.3	476.8	468.7
67.5°	452.7	444.5	430.2	418.9	412.3
70°	393.0	386.6	372.0	360.8	354.5
72.5°	331.9	325.4	317.4	306.1	301.3
75°	270.5	267.4	259.2	249.7	253.0
77.5°	215.9	209.3	206.1	201.3	196.6
80°	161.2	159.5	156.2	151.4	148.2
82.5°	109.5	109.5	108.0	101.5	101.5
85°	66.0	64.4	62.9	57.9	56.4
87.5°	29.0	25.8	22.6	17.7	16.1
90°	2.2	27.7	46.1	57.9	62.3
92.5°	57.9	48.6	55.4	60.2	62.3
95°	150.2	73.9	90.1	101.9	99.4
97.5°	270.5	81.0	117.8	124.9	127.2
100°	409.5	92.6	131.8	150.2	154.9
102.5°	561.9	557.5	136.5	161.8	168.9
105°	703.1	772.6	141.2	166.4	175.8
107.5°	867.4	925.0	145.9	171.1	180.5
110°	1024.7	1073.1	404.8	173.6	182.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1172.8	1214.2	1174.9	178.0	185.1
115°	1329.8	1369.1	1427.1	356.2	189.8
117.5°	1466.4	1512.5	1552.0	1221.1	615.2
120°	1619.0	1653.6	1695.4	1723.1	1410.8
122.5°	1748.4	1785.5	1831.9	1845.6	1848.1
125°	1880.2	1910.5	1954.4	1970.6	1977.5
127.5°	2000.5	2032.9	2067.8	2090.8	2093.1
130°	2113.9	2151.0	2176.3	2201.8	2199.7
132.5°	2229.6	2259.8	2285.1	2305.9	2303.8
135°	2326.8	2363.9	2384.4	2407.9	2403.1
137.5°	2428.4	2456.2	2479.5	2502.6	2495.7
140°	2527.9	2546.5	2571.8	2592.6	2581.1
142.5°	2611.3	2627.5	2657.5	2675.9	2664.4
145°	2699.2	2696.7	2736.0	2752.3	2740.7
147.5°	2775.3	2768.5	2807.7	2819.3	2810.2
150°	2849.5	2833.3	2870.3	2884.1	2872.5
152.5°	2911.8	2893.4	2928.0	2942.0	2925.8
155°	2972.0	2951.3	2979.1	2992.8	2974.4
157.5°	3020.6	3002.1	3023.0	3039.2	3020.6
160°	3062.3	3048.3	3062.3	3076.0	3059.8
162.5°	3099.1	3085.4	3096.9	3113.1	3092.3
165°	3131.5	3117.8	3124.6	3140.8	3124.6
167.5°	3157.0	3143.1	3150.2	3166.4	3145.6
170°	3177.9	3163.9	3168.6	3184.8	3163.9
172.5°	3191.6	3177.9	3182.6	3198.8	3177.9
175°	3203.2	3187.0	3191.6	3207.9	3184.8
177.5°	3207.9	3191.6	3194.1	3210.3	3189.5
180°	3196.4	3196.4	3196.4	3196.4	3196.4

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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	6.22	6.93	7.32	8.03	9.55	5.79	6.50	6.89	7.60	9.12
	3H	7.87	8.51	8.98	9.62	11.15	7.40	8.04	8.51	9.14	10.68
	4H	8.45	9.06	9.57	10.17	11.70	7.98	8.58	9.10	9.69	11.23
	6H	8.84	9.40	9.97	10.51	12.06	8.37	8.93	9.50	10.04	11.59
	8H	8.94	9.47	10.07	10.60	12.14	8.47	9.00	9.60	10.13	11.67
	12H	8.98	9.49	10.12	10.61	12.18	8.50	9.01	9.64	10.13	11.70
4H	2H	6.66	7.27	7.79	8.38	9.92	6.32	6.93	7.45	8.04	9.57
	3H	8.52	9.02	9.65	10.16	11.71	8.12	8.63	9.26	9.77	11.32
	4H	9.22	9.69	10.36	10.81	12.38	8.82	9.28	9.96	10.41	11.98
	6H	9.73	10.13	10.87	11.28	12.84	9.32	9.72	10.47	10.87	12.43
	8H	9.88	10.25	11.02	11.39	12.97	9.46	9.84	10.61	10.98	12.55
	12H	9.94	10.28	11.10	11.43	13.01	9.52	9.86	10.68	11.01	12.59
8H	4H	9.41	9.78	10.55	10.92	12.50	9.05	9.42	10.19	10.56	12.14
	6H	10.03	10.34	11.20	11.52	13.10	9.67	9.98	10.84	11.16	12.73
	8H	10.25	10.52	11.42	11.68	13.28	9.88	10.15	11.05	11.31	12.91
	12H	10.38	10.61	11.55	11.77	13.40	9.99	10.23	11.17	11.39	13.02
12H	4H	9.39	9.72	10.55	10.88	12.46	9.04	9.37	10.20	10.52	12.11
	6H	10.06	10.33	11.23	11.49	13.09	9.71	9.98	10.88	11.14	12.73
	8H	10.30	10.53	11.47	11.69	13.32	9.94	10.18	11.11	11.33	12.96

END OF REPORT