

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: P918135

Luminaire Tested: DFN2DIP-TR3F0-080D040US930-FLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918135
REPORT IS A COMBINATION OF REPORTS P901815 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-080D040US930-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

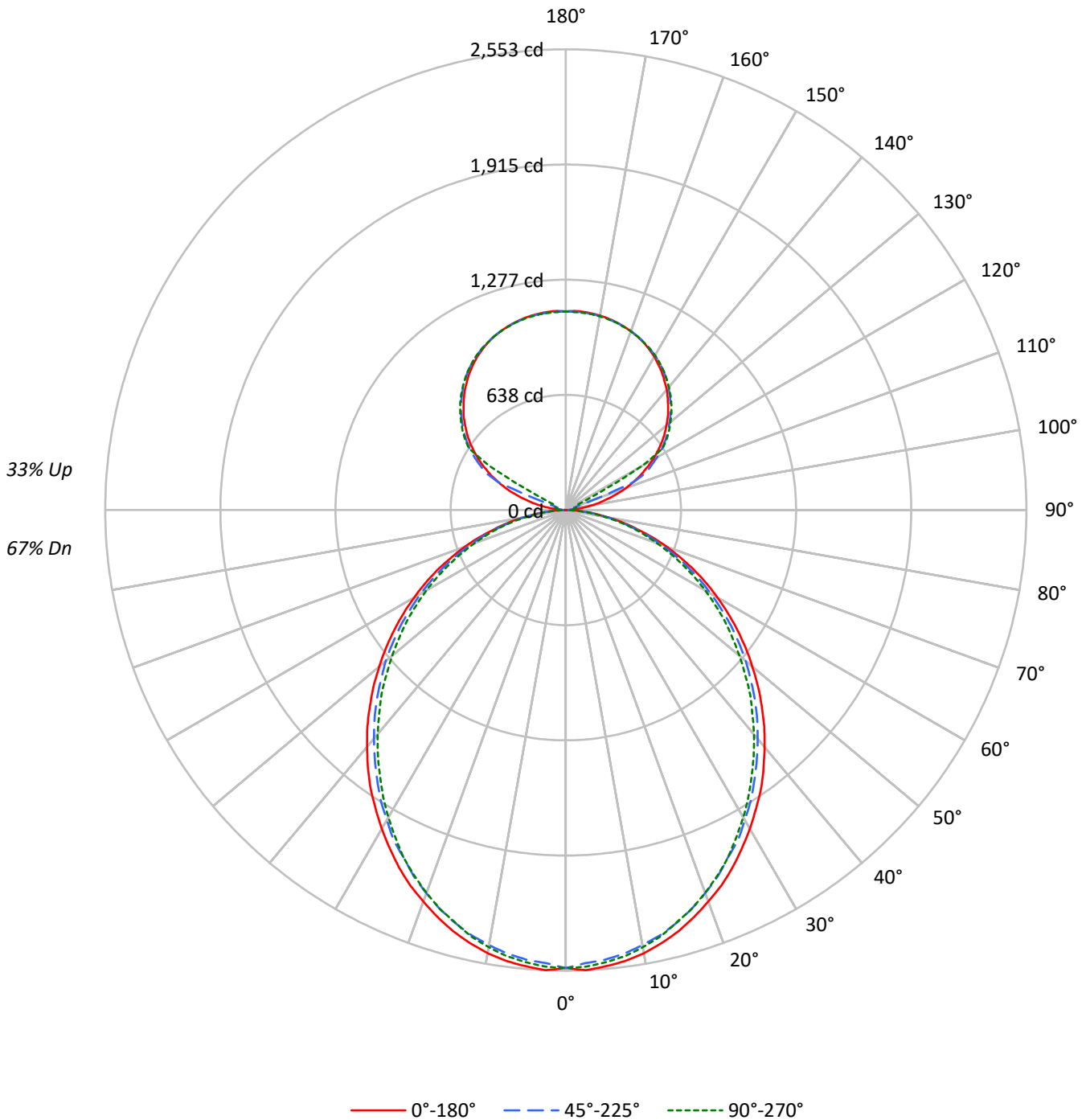
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9685.7 lumens
Efficiency: N/A
Efficacy: 87.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 110.4
Input Voltage (V):
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.9968
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			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	71	71	71	67	67	67	67
1	102	97	93	90	95	92	88	85	81	79	76	72	70	68	63	62	60	56	56	56	56
2	92	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51	47	47	47	47
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43	40	40	40	40
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37	34	34	34	34
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33	30	30	30	30
6	66	53	45	39	62	50	43	37	45	39	34	41	35	32	36	32	29	26	26	26	26
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26	23	23	23	23
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23	21	21	21	21
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21	19	19	19	19
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19	17	17	17	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3162	3162	3162
5°	3166	3116	3137
10°	3138	3071	3093
15°	3091	3018	3024
20°	3026	2945	2954
25°	2963	2858	2874
30°	2883	2778	2772
35°	2807	2683	2664
40°	2715	2587	2561
45°	2622	2490	2456
50°	2521	2389	2335
55°	2415	2272	2222
60°	2295	2133	2093
65°	2163	1989	1942
70°	1996	1813	1778
75°	1765	1603	1623
80°	1486	1334	1334
85°	1050	878	861

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2622 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	238.9	2.5
10°-20°	672.1	6.9
20°-30°	987.7	10.2
30°-40°	1147.1	11.8
40°-50°	1145.7	11.8
50°-60°	999.0	10.3
60°-70°	738.5	7.6
70°-80°	417.8	4.3
80°-90°	112.2	1.2
90°-100°	36.3	0.4
100°-110°	135.3	1.4
110°-120°	358.8	3.7
120°-130°	595.1	6.1
130°-140°	632.1	6.5
140°-150°	587.5	6.1
150°-160°	472.3	4.9
160°-170°	304.4	3.1
170°-180°	104.8	1.1
0°-30°	1898.6	19.6
0°-40°	3045.8	31.4
0°-60°	5190.5	53.6
0°-90°	6459.1	66.7
90°-120°	530.4	5.5
90°-150°	2345.2	24.2
90°-180°	3227.0	33.3
0°-180°	9685.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2538	2538	2538	2538	2538	
5°	2538	2528	2501	2521	2516	241
15°	2416	2402	2370	2379	2367	680
25°	2186	2167	2126	2130	2126	1006
35°	1886	1862	1823	1808	1796	1178
45°	1535	1518	1481	1455	1445	1185
55°	1162	1147	1118	1088	1076	1039
65°	784	769	744	722	710	775
75°	410	405	393	378	383	438
85°	100	98	95	88	85	112
90°	1	10	16	20	21	9
95°	52	25	31	35	34	61
105°	242	266	49	57	60	259
115°	458	471	491	123	65	451
125°	647	658	673	679	681	577
135°	801	814	821	829	828	619
145°	929	929	942	948	944	581
155°	1023	1016	1026	1030	1024	472
165°	1078	1074	1076	1082	1076	305
175°	1103	1097	1099	1105	1097	105
180°	1101	1101	1101	1101	1101	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2537.9	2537.9	2537.9	2537.9	2537.9
2.5°	2552.6	2540.5	2513.6	2537.9	2533.2
5°	2537.9	2528.3	2501.4	2520.8	2516.2
7.5°	2520.8	2506.3	2479.4	2499.1	2494.2
10°	2494.2	2477.0	2447.8	2467.2	2460.0
12.5°	2457.4	2442.9	2413.6	2425.8	2420.9
15°	2416.0	2401.5	2369.6	2379.4	2367.3
17.5°	2364.7	2350.2	2318.3	2330.5	2318.3
20°	2308.5	2294.0	2259.8	2267.1	2257.5
22.5°	2252.6	2230.6	2198.7	2198.7	2193.8
25°	2186.5	2167.1	2125.7	2130.4	2125.7
27.5°	2113.3	2096.2	2064.6	2057.3	2045.2
30°	2040.3	2020.6	1984.1	1976.9	1967.0
32.5°	1962.1	1947.6	1908.5	1893.7	1883.9
35°	1886.4	1862.1	1823.0	1808.2	1796.1
37.5°	1801.0	1779.0	1739.9	1722.8	1710.7
40°	1713.3	1693.5	1654.5	1632.7	1622.9
42.5°	1627.8	1608.1	1569.3	1544.7	1530.2
45°	1535.1	1518.0	1481.2	1454.6	1444.8
47.5°	1444.8	1427.7	1388.5	1361.6	1347.1
50°	1349.5	1337.3	1303.1	1268.9	1256.8
52.5°	1256.8	1239.7	1208.1	1181.2	1164.1
55°	1161.7	1147.0	1117.8	1088.5	1076.3
57.5°	1066.5	1054.3	1022.5	993.2	983.3
60°	971.2	961.6	927.4	900.5	893.2
62.5°	878.5	861.4	837.1	812.8	802.9
65°	783.5	768.7	744.4	722.4	710.2
67.5°	685.8	673.4	651.7	634.6	624.8
70°	595.5	585.6	563.7	546.6	537.0
72.5°	502.8	493.0	480.8	463.7	456.5
75°	409.9	405.2	392.8	378.3	383.2
77.5°	327.0	317.2	312.3	305.0	297.7
80°	244.2	241.6	236.7	229.4	224.5
82.5°	166.0	166.0	163.6	153.8	153.8
85°	100.0	97.6	95.3	87.8	85.4
87.5°	44.0	39.1	34.2	26.9	24.4
90°	0.7	9.5	15.9	20.0	21.4
92.5°	20.0	16.7	19.1	20.7	21.4
95°	51.7	25.4	31.0	35.1	34.2
97.5°	93.2	27.9	40.6	43.0	43.8
100°	141.0	31.9	45.4	51.7	53.3
102.5°	193.5	192.0	47.0	55.7	58.1
105°	242.1	266.0	48.6	57.3	60.5
107.5°	298.6	318.5	50.2	58.9	62.1
110°	352.9	369.5	139.4	59.8	62.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	403.8	418.1	404.6	61.3	63.8
115°	457.9	471.4	491.4	122.6	65.4
117.5°	504.9	520.8	534.4	420.4	211.8
120°	557.5	569.4	583.8	593.4	485.8
122.5°	602.0	614.8	630.8	635.5	636.3
125°	647.4	657.9	672.9	678.6	680.9
127.5°	688.8	700.0	712.0	720.0	720.7
130°	727.9	740.7	749.3	758.1	757.4
132.5°	767.7	778.1	786.8	794.0	793.3
135°	801.2	814.0	821.1	829.1	827.5
137.5°	836.2	845.7	853.8	861.7	859.3
140°	870.4	876.9	885.6	892.8	888.8
142.5°	899.2	904.7	915.1	921.4	917.5
145°	929.4	928.6	942.1	947.7	943.7
147.5°	955.6	953.2	966.8	970.8	967.7
150°	981.1	975.6	988.4	993.1	989.1
152.5°	1002.7	996.3	1008.2	1013.0	1007.5
155°	1023.4	1016.3	1025.8	1030.5	1024.2
157.5°	1040.1	1033.7	1041.0	1046.5	1040.1
160°	1054.4	1049.6	1054.4	1059.2	1053.6
162.5°	1067.1	1062.4	1066.4	1072.0	1064.8
165°	1078.3	1073.6	1075.9	1081.5	1075.9
167.5°	1087.1	1082.2	1084.8	1090.3	1083.1
170°	1094.3	1089.5	1091.0	1096.7	1089.5
172.5°	1099.0	1094.3	1095.9	1101.5	1094.3
175°	1102.9	1097.4	1099.0	1104.6	1096.7
177.5°	1104.6	1099.0	1099.8	1105.5	1098.3
180°	1100.7	1100.7	1100.7	1100.7	1100.7



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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	12.63	13.67	13.43	14.49	15.50	12.20	13.24	13.00	14.06	15.07
	3H	14.30	15.23	15.11	16.06	17.10	13.83	14.76	14.64	15.59	16.63
	4H	14.89	15.76	15.72	16.60	17.65	14.42	15.30	15.25	16.14	17.19
	6H	15.29	16.10	16.13	16.94	18.01	14.82	15.63	15.66	16.48	17.54
	8H	15.39	16.16	16.24	17.03	18.10	14.93	15.70	15.78	16.56	17.63
	12H	15.44	16.18	16.30	17.04	18.13	14.97	15.71	15.83	16.57	17.66
4H	2H	13.11	13.99	13.95	14.83	15.88	12.77	13.65	13.60	14.49	15.54
	3H	14.98	15.72	15.83	16.59	17.65	14.59	15.33	15.44	16.20	17.27
	4H	15.70	16.36	16.56	17.23	18.33	15.30	15.96	16.15	16.83	17.93
	6H	16.21	16.79	17.09	17.68	18.78	15.81	16.39	16.68	17.28	18.38
	8H	16.36	16.90	17.24	17.79	18.90	15.96	16.50	16.83	17.38	18.49
	12H	16.44	16.93	17.34	17.83	18.95	16.02	16.51	16.92	17.42	18.53
8H	4H	15.90	16.44	16.78	17.33	18.44	15.55	16.09	16.42	16.97	18.09
	6H	16.53	16.98	17.44	17.91	19.02	16.17	16.62	17.08	17.55	18.66
	8H	16.75	17.14	17.66	18.07	19.19	16.38	16.78	17.30	17.70	18.83
	12H	16.88	17.23	17.80	18.15	19.32	16.50	16.85	17.42	17.77	18.95
12H	4H	15.90	16.38	16.79	17.29	18.41	15.55	16.03	16.44	16.94	18.06
	6H	16.56	16.96	17.48	17.88	19.01	16.21	16.61	17.13	17.53	18.66
	8H	16.80	17.15	17.72	18.07	19.25	16.45	16.80	17.37	17.72	18.89