

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: P915407

Luminaire Tested: DFN2DIP-TR3F0-080D040US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915407
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-TR3F0-080D040US927-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

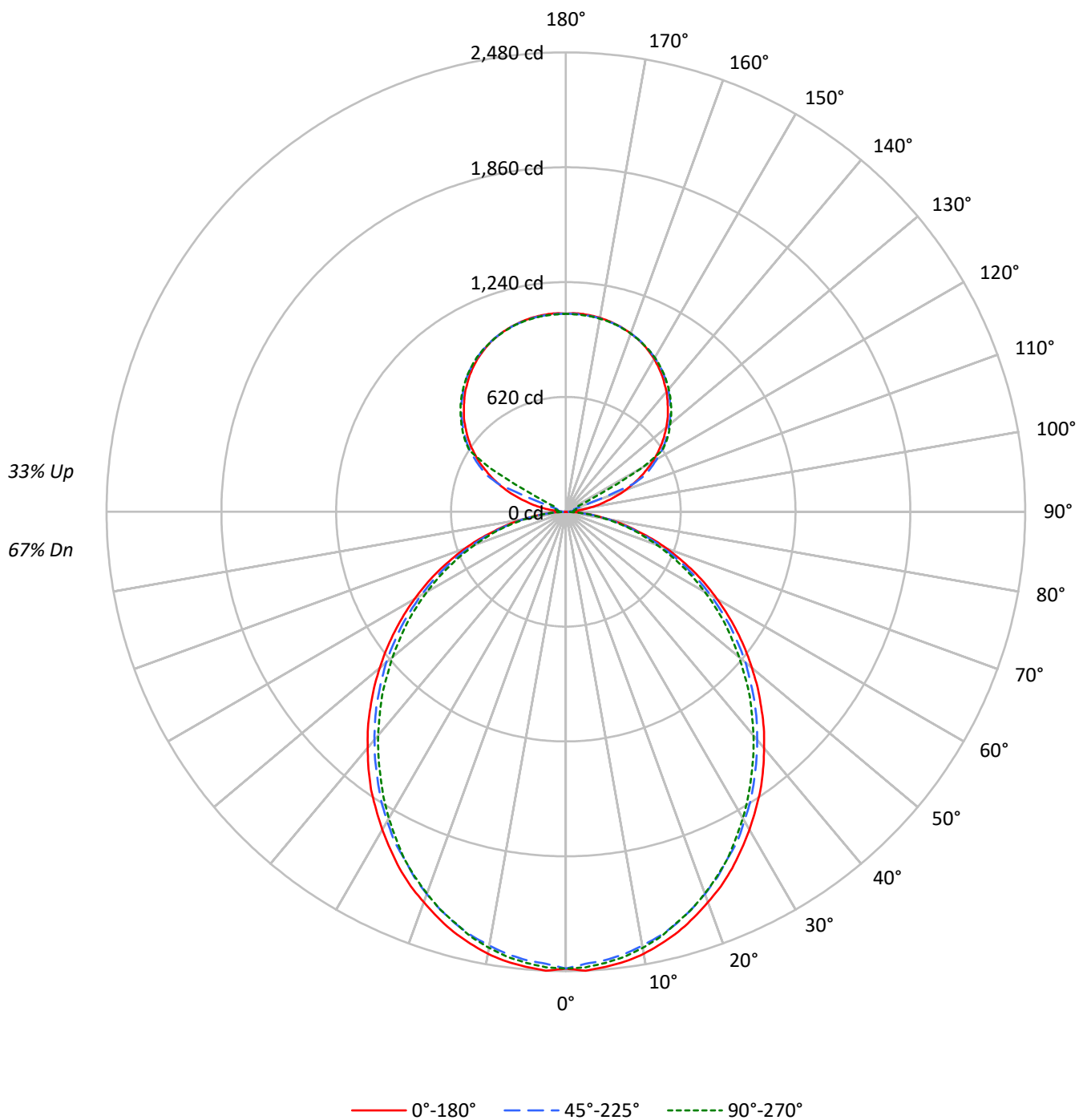
Lumens per Lamp: N/A
Luminaire Lumens: 9411.1 lumens
Efficiency: N/A
Efficacy: 85.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 110.4
Input Voltage (V):
Input Current (Ain): 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	0
RCR																				
0	111	111	111	111	105	105	105	105	93	93	93		82	82	82		71	71	71	67
1	102	97	93	90	95	92	88	85	81	79	76		72	70	68		63	62	60	56
2	92	85	79	73	87	80	75	70	71	67	63		63	60	57		56	53	51	47
3	84	75	67	61	79	71	64	58	63	58	53		56	52	48		49	46	43	40
4	77	66	58	52	72	63	55	50	56	50	45		50	45	41		44	40	37	34
5	71	59	51	44	67	56	48	43	50	44	39		45	40	36		40	36	33	30
6	66	53	45	39	62	50	43	37	45	39	34		41	35	32		36	32	29	26
7	61	48	40	34	57	46	38	33	41	35	30		37	32	28		33	29	26	23
8	56	44	36	30	53	42	34	29	38	31	27		34	29	25		30	26	23	21
9	53	40	32	27	50	38	31	26	35	29	24		31	26	23		28	24	21	19
10	49	37	29	24	46	35	28	24	32	26	22		29	24	20		26	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3073	3073	3073
5°	3076	3027	3048
10°	3049	2984	3005
15°	3003	2932	2939
20°	2941	2862	2871
25°	2879	2777	2792
30°	2801	2699	2693
35°	2728	2606	2589
40°	2638	2513	2489
45°	2548	2420	2387
50°	2449	2321	2268
55°	2346	2207	2159
60°	2229	2073	2034
65°	2102	1933	1887
70°	1939	1762	1727
75°	1715	1557	1577
80°	1444	1296	1296
85°	1019	853	837

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2548 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.1	2.5
10°-20°	653.0	6.9
20°-30°	959.7	10.2
30°-40°	1114.6	11.8
40°-50°	1113.2	11.8
50°-60°	970.7	10.3
60°-70°	717.6	7.6
70°-80°	406.0	4.3
80°-90°	109.0	1.2
90°-100°	35.2	0.4
100°-110°	131.5	1.4
110°-120°	348.6	3.7
120°-130°	578.2	6.1
130°-140°	614.2	6.5
140°-150°	570.9	6.1
150°-160°	458.9	4.9
160°-170°	295.7	3.1
170°-180°	101.8	1.1
0°-30°	1844.8	19.6
0°-40°	2959.4	31.4
0°-60°	5043.4	53.6
0°-90°	6275.9	66.7
90°-120°	515.3	5.5
90°-150°	2278.7	24.2
90°-180°	3135.0	33.3
0°-180°	9411.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2466	2466	2466	2466	2466	
5°	2466	2457	2430	2449	2445	234
15°	2348	2333	2302	2312	2300	661
25°	2125	2106	2066	2070	2066	978
35°	1833	1809	1771	1757	1745	1145
45°	1492	1475	1439	1413	1404	1151
55°	1129	1114	1086	1058	1046	1009
65°	761	747	723	702	690	753
75°	398	394	382	368	372	425
85°	97	95	93	85	83	108
90°	1	9	15	19	21	9
95°	50	25	30	34	33	60
105°	235	258	47	56	59	251
115°	445	458	477	119	64	438
125°	629	639	654	659	662	561
135°	778	791	798	806	804	601
145°	903	902	915	921	917	565
155°	994	988	997	1001	995	458
165°	1048	1043	1045	1051	1045	296
175°	1072	1066	1068	1073	1066	102
180°	1069	1069	1069	1069	1069	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2465.9	2465.9	2465.9	2465.9	2465.9
2.5°	2480.2	2468.4	2442.3	2465.9	2461.4
5°	2465.9	2456.6	2430.5	2449.3	2444.8
7.5°	2449.3	2435.2	2409.1	2428.2	2423.4
10°	2423.4	2406.8	2378.4	2397.2	2390.2
12.5°	2387.7	2373.6	2345.2	2357.0	2352.2
15°	2347.5	2333.4	2302.4	2312.0	2300.2
17.5°	2297.6	2283.5	2252.6	2264.4	2252.6
20°	2243.1	2229.0	2195.8	2202.8	2193.5
22.5°	2188.7	2167.3	2136.4	2136.4	2131.6
25°	2124.6	2105.7	2065.5	2070.0	2065.5
27.5°	2053.3	2036.8	2006.0	1999.0	1987.2
30°	1982.4	1963.3	1927.9	1920.8	1911.2
32.5°	1906.5	1892.4	1854.3	1840.0	1830.5
35°	1832.9	1809.3	1771.3	1757.0	1745.2
37.5°	1749.9	1728.5	1690.6	1674.0	1662.2
40°	1664.7	1645.5	1607.6	1586.4	1576.8
42.5°	1581.7	1562.5	1524.8	1500.9	1486.8
45°	1491.6	1475.0	1439.2	1413.3	1403.8
47.5°	1403.8	1387.2	1349.2	1323.0	1308.9
50°	1311.2	1299.4	1266.1	1233.0	1221.1
52.5°	1221.1	1204.5	1173.9	1147.7	1131.1
55°	1128.8	1114.4	1086.1	1057.6	1045.8
57.5°	1036.3	1024.4	993.5	965.0	955.4
60°	943.6	934.4	901.1	875.0	867.9
62.5°	853.6	837.0	813.3	789.7	780.1
65°	761.3	746.9	723.3	701.9	690.1
67.5°	666.4	654.3	633.2	616.6	607.0
70°	578.6	569.0	547.7	531.1	521.7
72.5°	488.5	479.0	467.1	450.6	443.5
75°	398.2	393.7	381.7	367.6	372.3
77.5°	317.7	308.2	303.4	296.4	289.3
80°	237.3	234.7	230.0	222.9	218.1
82.5°	161.3	161.3	159.0	149.4	149.4
85°	97.1	94.8	92.6	85.3	83.0
87.5°	42.8	38.0	33.2	26.1	23.7
90°	0.7	9.3	15.4	19.4	20.8
92.5°	19.4	16.2	18.5	20.1	20.8
95°	50.2	24.7	30.1	34.1	33.3
97.5°	90.5	27.1	39.5	41.8	42.5
100°	137.0	31.0	44.1	50.2	51.8
102.5°	188.0	186.6	45.6	54.1	56.5
105°	235.2	258.5	47.2	55.7	58.8
107.5°	290.2	309.5	48.8	57.3	60.4
110°	342.9	359.0	135.5	58.1	61.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	392.4	406.2	393.1	59.6	61.9
115°	444.9	458.0	477.4	119.1	63.5
117.5°	490.6	506.0	519.3	408.5	205.8
120°	541.7	553.3	567.2	576.5	472.1
122.5°	584.9	597.4	612.9	617.5	618.3
125°	629.1	639.2	653.9	659.3	661.6
127.5°	669.3	680.2	691.8	699.6	700.3
130°	707.3	719.7	728.1	736.6	735.9
132.5°	745.9	756.1	764.5	771.5	770.8
135°	778.5	790.9	797.8	805.6	804.1
137.5°	812.5	821.7	829.6	837.3	835.0
140°	845.7	852.0	860.5	867.4	863.6
142.5°	873.7	879.1	889.1	895.2	891.4
145°	903.1	902.3	915.4	920.8	916.9
147.5°	928.5	926.2	939.4	943.3	940.2
150°	953.3	947.9	960.4	965.0	961.1
152.5°	974.2	968.0	979.6	984.3	978.9
155°	994.3	987.5	996.7	1001.3	995.1
157.5°	1010.6	1004.4	1011.5	1016.8	1010.6
160°	1024.5	1019.9	1024.5	1029.1	1023.7
162.5°	1036.9	1032.3	1036.2	1041.6	1034.6
165°	1047.7	1043.1	1045.4	1050.8	1045.4
167.5°	1056.3	1051.5	1054.0	1059.4	1052.4
170°	1063.3	1058.6	1060.1	1065.6	1058.6
172.5°	1067.9	1063.3	1064.8	1070.2	1063.3
175°	1071.7	1066.3	1067.9	1073.2	1065.6
177.5°	1073.2	1067.9	1068.7	1074.1	1067.1
180°	1069.4	1069.4	1069.4	1069.4	1069.4

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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	12.53	13.57	13.33	14.39	15.40	12.10	13.14	12.90	13.96	14.97
	3H	14.20	15.13	15.01	15.96	17.00	13.73	14.66	14.54	15.49	16.53
	4H	14.79	15.66	15.62	16.50	17.55	14.32	15.20	15.15	16.04	17.09
	6H	15.19	16.00	16.03	16.84	17.91	14.72	15.53	15.56	16.37	17.44
	8H	15.29	16.06	16.14	16.93	18.00	14.83	15.60	15.68	16.46	17.53
	12H	15.34	16.08	16.20	16.94	18.03	14.87	15.61	15.73	16.46	17.56
4H	2H	13.01	13.89	13.85	14.73	15.78	12.67	13.55	13.50	14.39	15.44
	3H	14.88	15.62	15.73	16.49	17.55	14.49	15.23	15.34	16.10	17.17
	4H	15.60	16.26	16.46	17.13	18.23	15.20	15.86	16.05	16.73	17.83
	6H	16.11	16.69	16.99	17.58	18.68	15.71	16.29	16.58	17.18	18.28
	8H	16.26	16.80	17.14	17.69	18.80	15.86	16.40	16.73	17.28	18.39
	12H	16.34	16.82	17.24	17.73	18.85	15.92	16.41	16.82	17.32	18.43
8H	4H	15.80	16.34	16.68	17.23	18.34	15.45	15.99	16.32	16.87	17.99
	6H	16.43	16.88	17.34	17.81	18.92	16.07	16.52	16.98	17.45	18.56
	8H	16.65	17.04	17.56	17.97	19.09	16.28	16.68	17.20	17.60	18.73
	12H	16.78	17.13	17.70	18.05	19.22	16.40	16.75	17.32	17.67	18.85
12H	4H	15.80	16.28	16.69	17.19	18.31	15.45	15.93	16.34	16.84	17.96
	6H	16.46	16.86	17.38	17.78	18.91	16.11	16.51	17.03	17.43	18.56
	8H	16.70	17.05	17.62	17.97	19.15	16.35	16.70	17.27	17.62	18.79