

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: P907335

Luminaire Tested: DFN2DIP-TR4F0-050D110US835-FLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907335
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-TR4F0-050D110US835-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

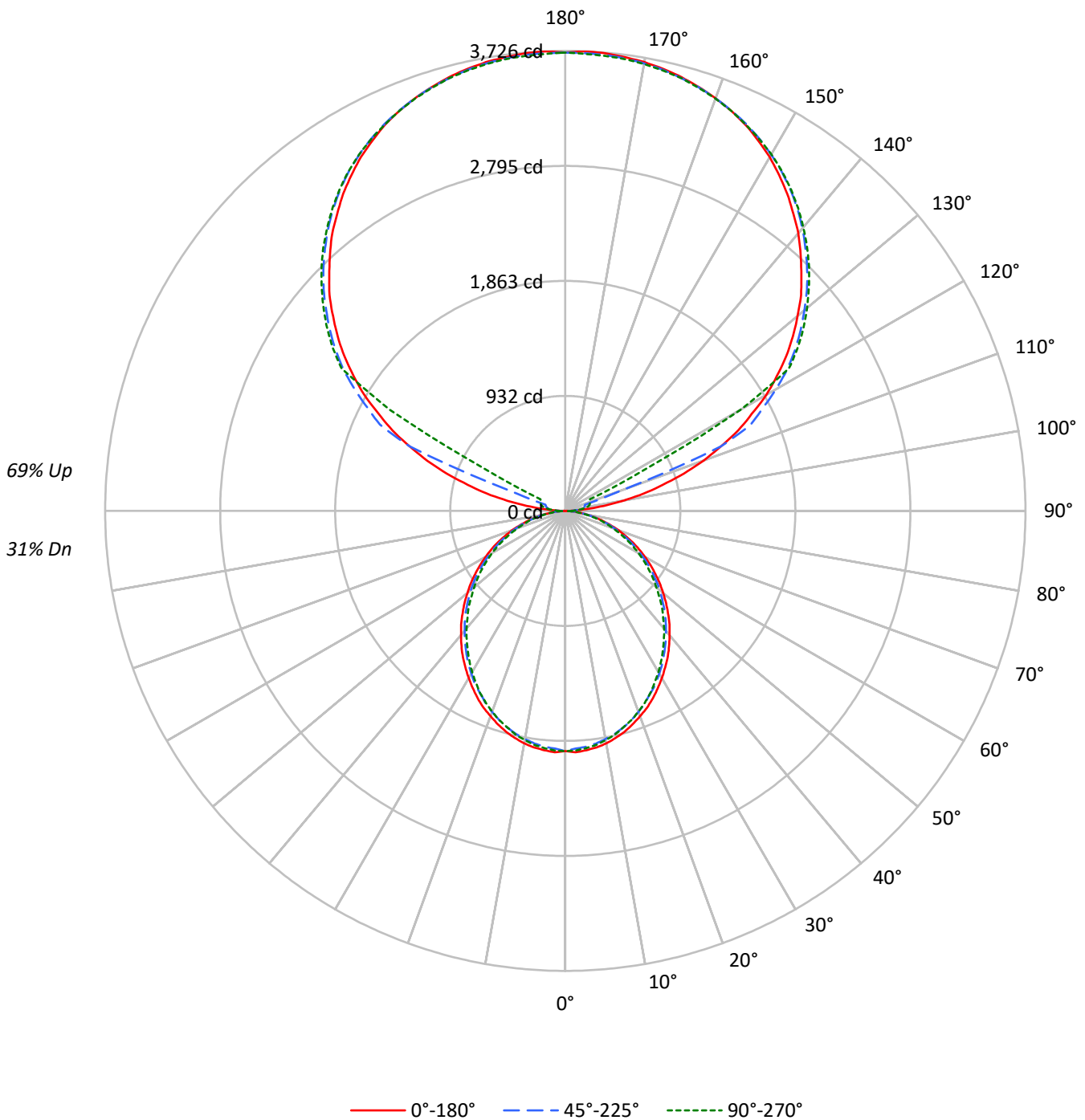
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15840.0 lumens
Efficiency: N/A
Efficacy: 125.0 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				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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39	39	39	39	31
1	94	89	86	82	84	80	77	74	64	62	60	48	47	46	34	34	33	34	34	33	26
2	85	78	72	67	76	70	65	61	56	52	49	43	40	38	30	29	28	30	29	28	22
3	78	69	61	56	70	62	56	51	49	45	41	38	35	32	27	25	24	27	25	24	19
4	71	61	53	47	64	55	48	43	44	39	35	33	30	28	24	22	20	24	22	20	16
5	65	54	46	40	58	49	42	37	39	34	30	30	27	24	22	19	18	22	19	18	14
6	60	48	40	35	54	44	37	32	35	30	26	27	24	21	20	17	15	20	17	15	12
7	55	43	36	30	50	39	33	28	32	27	23	25	21	18	18	15	14	18	15	14	11
8	51	39	32	27	46	36	29	24	29	24	20	22	19	16	16	14	12	16	14	12	10
9	48	36	28	24	43	32	26	22	26	22	18	21	17	15	15	13	11	15	13	11	9
10	44	33	26	21	40	30	24	19	24	19	16	19	16	13	14	12	10	14	12	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1546	1546	1546
5°	1548	1524	1534
10°	1536	1504	1513
15°	1513	1479	1481
20°	1482	1444	1448
25°	1452	1403	1409
30°	1414	1365	1360
35°	1378	1320	1309
40°	1334	1274	1259
45°	1290	1228	1209
50°	1241	1180	1151
55°	1191	1125	1097
60°	1133	1059	1036
65°	1071	991	963
70°	991	908	885
75°	881	808	813
80°	749	681	676
85°	542	462	448

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1970 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.1	1.2
10°-20°	515.2	3.3
20°-30°	757.2	4.8
30°-40°	879.4	5.6
40°-50°	878.3	5.5
50°-60°	765.8	4.8
60°-70°	566.1	3.6
70°-80°	320.3	2.0
80°-90°	91.1	0.6
90°-100°	122.4	0.8
100°-110°	456.3	2.9
110°-120°	1210.3	7.6
120°-130°	2007.3	12.7
130°-140°	2132.2	13.5
140°-150°	1981.7	12.5
150°-160°	1593.2	10.1
160°-170°	1026.6	6.5
170°-180°	353.3	2.2
0°-30°	1455.5	9.2
0°-40°	2334.9	14.7
0°-60°	3979.0	25.1
0°-90°	4956.5	31.3
90°-120°	1789.0	11.3
90°-150°	7910.3	49.9
90°-180°	10883.0	68.7
0°-180°	15840.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1946	1946	1946	1946	1946	
5°	1946	1938	1918	1932	1929	185
15°	1852	1841	1816	1824	1815	522
25°	1676	1661	1630	1633	1630	771
35°	1446	1428	1398	1386	1377	903
45°	1177	1164	1136	1115	1108	908
55°	891	879	857	834	825	796
65°	601	589	571	554	544	594
75°	314	311	301	290	294	335
85°	77	75	73	67	66	85
90°	3	32	54	67	72	15
95°	174	86	105	118	116	207
105°	817	897	164	193	204	873
115°	1544	1590	1658	414	220	1521
125°	2184	2219	2270	2289	2297	1948
135°	2702	2746	2769	2797	2791	2088
145°	3135	3132	3178	3197	3183	1961
155°	3452	3428	3460	3476	3455	1591
165°	3637	3621	3629	3648	3629	1028
175°	3720	3702	3707	3726	3699	354
180°	3712	3712	3712	3712	3712	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1945.5	1945.5	1945.5	1945.5	1945.5
2.5°	1956.8	1947.5	1926.9	1945.5	1942.0
5°	1945.5	1938.2	1917.5	1932.4	1928.9
7.5°	1932.4	1921.3	1900.7	1915.8	1912.0
10°	1912.0	1898.9	1876.5	1891.3	1885.8
12.5°	1883.8	1872.7	1850.3	1859.6	1855.8
15°	1852.0	1840.9	1816.5	1824.1	1814.7
17.5°	1812.7	1801.6	1777.2	1786.5	1777.2
20°	1769.7	1758.6	1732.4	1737.9	1730.6
22.5°	1726.8	1709.9	1685.5	1685.5	1681.7
25°	1676.2	1661.3	1629.5	1633.1	1629.5
27.5°	1620.0	1606.9	1582.7	1577.1	1567.8
30°	1564.0	1549.0	1521.0	1515.4	1507.9
32.5°	1504.1	1493.0	1463.0	1451.7	1444.2
35°	1446.1	1427.5	1397.5	1386.2	1376.9
37.5°	1380.6	1363.8	1333.8	1320.7	1311.4
40°	1313.4	1298.3	1268.3	1251.6	1244.1
42.5°	1247.9	1232.8	1203.0	1184.1	1173.0
45°	1176.8	1163.7	1135.5	1115.1	1107.5
47.5°	1107.5	1094.4	1064.5	1043.8	1032.7
50°	1034.5	1025.2	999.0	972.8	963.4
52.5°	963.4	950.3	926.1	905.5	892.4
55°	890.6	879.3	856.8	834.4	825.1
57.5°	817.5	808.2	783.8	761.4	753.8
60°	744.5	737.2	711.0	690.3	684.8
62.5°	673.5	660.4	641.7	623.0	615.5
65°	600.6	589.3	570.6	553.8	544.4
67.5°	525.8	516.3	499.6	486.5	478.9
70°	456.5	449.0	432.1	419.0	411.7
72.5°	385.5	377.9	368.6	355.5	349.9
75°	314.2	310.6	301.1	290.0	293.8
77.5°	250.7	243.1	239.4	233.8	228.3
80°	187.2	185.2	181.4	175.9	172.1
82.5°	127.2	127.2	125.4	117.9	117.9
85°	76.6	74.8	73.0	67.3	65.5
87.5°	33.7	30.0	26.2	20.6	18.7
90°	2.6	32.2	53.6	67.3	72.4
92.5°	67.3	56.5	64.4	69.9	72.4
95°	174.5	85.8	104.6	118.3	115.5
97.5°	314.2	94.1	136.8	145.1	147.7
100°	475.6	107.5	153.1	174.5	179.9
102.5°	652.6	647.5	158.5	187.9	196.2
105°	816.6	897.3	164.0	193.3	204.2
107.5°	1007.4	1074.3	169.4	198.7	209.6
110°	1190.1	1246.3	470.2	201.6	212.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1362.1	1410.2	1364.6	206.7	215.0
115°	1544.5	1590.1	1657.5	413.7	220.4
117.5°	1703.1	1756.7	1802.6	1418.2	714.5
120°	1880.4	1920.6	1969.1	2001.3	1638.6
122.5°	2030.7	2073.7	2127.6	2143.6	2146.5
125°	2183.8	2218.9	2269.9	2288.7	2296.7
127.5°	2323.5	2361.1	2401.6	2428.4	2431.0
130°	2455.2	2498.3	2527.6	2557.3	2554.8
132.5°	2589.5	2624.6	2654.0	2678.2	2675.7
135°	2702.5	2745.5	2769.4	2796.6	2791.1
137.5°	2820.5	2852.7	2879.8	2906.6	2898.6
140°	2936.0	2957.6	2987.0	3011.2	2997.8
142.5°	3032.9	3051.7	3086.5	3107.9	3094.5
145°	3135.0	3132.1	3177.7	3196.6	3183.2
147.5°	3223.4	3215.4	3261.0	3274.4	3263.9
150°	3309.5	3290.7	3333.7	3349.7	3336.3
152.5°	3381.9	3360.5	3400.7	3417.0	3398.2
155°	3451.8	3427.8	3460.0	3476.0	3454.6
157.5°	3508.2	3486.8	3511.1	3529.9	3508.2
160°	3556.7	3540.4	3556.7	3572.6	3553.8
162.5°	3599.4	3583.5	3596.9	3615.7	3591.5
165°	3637.1	3621.1	3629.1	3647.9	3629.1
167.5°	3666.7	3650.5	3658.8	3677.6	3653.4
170°	3691.0	3674.7	3680.1	3699.0	3674.7
172.5°	3706.9	3691.0	3696.4	3715.2	3691.0
175°	3720.3	3701.5	3706.9	3725.8	3699.0
177.5°	3725.8	3706.9	3709.8	3728.6	3704.4
180°	3712.4	3712.4	3712.4	3712.4	3712.4



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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	6.74	7.45	7.84	8.55	10.07	6.31	7.02	7.41	8.12	9.64
	3H	8.39	9.03	9.50	10.14	11.67	7.92	8.56	9.03	9.66	11.20
	4H	8.97	9.58	10.09	10.69	12.22	8.50	9.10	9.62	10.21	11.75
	6H	9.36	9.92	10.49	11.03	12.58	8.89	9.45	10.02	10.56	12.11
	8H	9.46	9.99	10.59	11.12	12.66	8.99	9.52	10.12	10.65	12.19
	12H	9.50	10.01	10.64	11.13	12.70	9.02	9.53	10.16	10.65	12.22
4H	2H	7.18	7.79	8.31	8.90	10.44	6.84	7.45	7.97	8.56	10.09
	3H	9.04	9.54	10.17	10.68	12.23	8.64	9.15	9.78	10.28	11.84
	4H	9.74	10.21	10.88	11.33	12.90	9.34	9.80	10.48	10.93	12.50
	6H	10.25	10.65	11.39	11.80	13.36	9.84	10.24	10.99	11.39	12.95
	8H	10.40	10.77	11.54	11.91	13.49	9.98	10.36	11.13	11.50	13.07
	12H	10.46	10.80	11.62	11.95	13.53	10.04	10.38	11.20	11.53	13.11
8H	4H	9.93	10.30	11.07	11.44	13.02	9.57	9.94	10.71	11.08	12.66
	6H	10.55	10.86	11.72	12.04	13.62	10.19	10.50	11.36	11.68	13.25
	8H	10.77	11.04	11.94	12.20	13.80	10.40	10.67	11.57	11.83	13.43
	12H	10.90	11.13	12.07	12.29	13.92	10.51	10.75	11.69	11.91	13.54
12H	4H	9.91	10.25	11.07	11.40	12.98	9.55	9.89	10.72	11.04	12.63
	6H	10.58	10.85	11.75	12.01	13.61	10.23	10.50	11.40	11.66	13.25
	8H	10.82	11.05	11.99	12.21	13.84	10.46	10.70	11.63	11.85	13.48