

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: P907337

Luminaire Tested: DFN2DIP-TR4F0-050D110US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907337
REPORT IS A COMBINATION OF REPORTS P902018 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D110US835-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

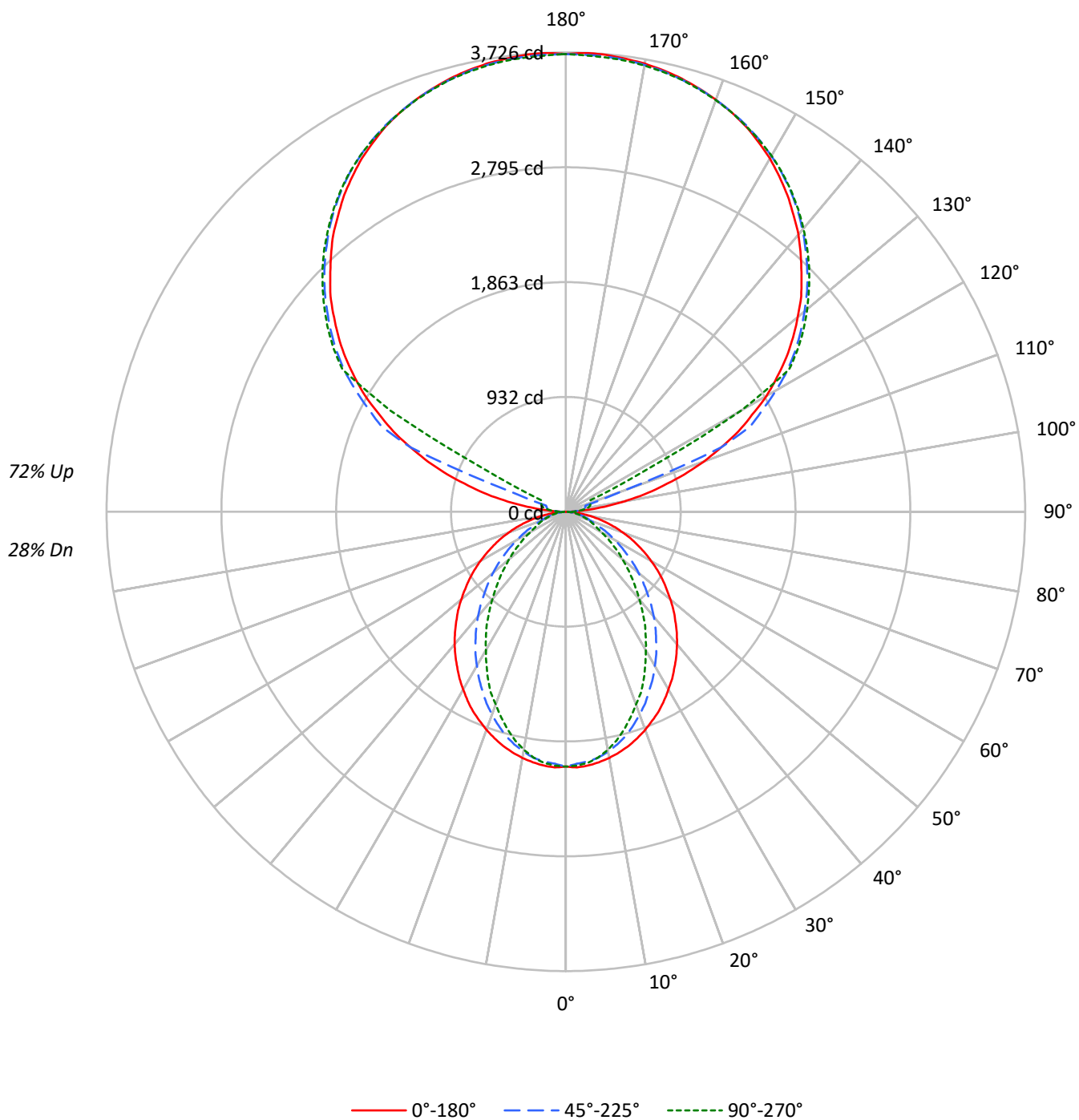
Lumens per Lamp: N/A
Luminaire Lumens: 15140.0 lumens
Efficiency: N/A
Efficacy: 119.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

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	102	102	102	102		91	91	91	91		71	71	71		53	53	53		36	36	36
1	93	89	85	82		83	80	77	74		63	61	59		47	46	44		32	32	31
2	85	78	72	67		76	70	65	61		55	52	49		41	39	37		29	27	26
3	78	69	62	56		69	62	56	51		49	45	41		37	34	32		26	24	23
4	71	61	53	48		63	55	49	44		43	39	35		33	30	28		23	21	20
5	65	54	47	41		58	49	42	37		39	34	31		30	26	24		21	19	17
6	60	49	41	35		54	44	37	33		35	30	27		27	24	21		19	17	15
7	55	44	36	31		50	40	33	28		32	27	24		24	21	19		17	15	14
8	51	40	32	27		46	36	30	25		29	24	21		22	19	17		16	14	12
9	48	36	29	24		43	33	27	22		26	22	19		20	17	15		15	13	11
10	45	33	26	22		40	30	24	20		24	20	17		19	16	13		14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1642	1642	1642
5°	1644	1616	1626
10°	1628	1584	1573
15°	1606	1532	1491
20°	1576	1459	1391
25°	1546	1378	1294
30°	1505	1296	1171
35°	1465	1206	1063
40°	1424	1114	939
45°	1377	1012	827
50°	1328	908	717
55°	1277	798	612
60°	1218	682	503
65°	1150	565	453
70°	1068	456	410
75°	965	401	373
80°	815	337	323
85°	569	225	243

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°	193.7	1.3
10°-20°	531.7	3.5
20°-30°	746.5	4.9
30°-40°	813.7	5.4
40°-50°	747.9	4.9
50°-60°	587.3	3.9
60°-70°	382.3	2.5
70°-80°	196.8	1.3
80°-90°	56.8	0.4
90°-100°	122.4	0.8
100°-110°	456.3	3.0
110°-120°	1210.3	8.0
120°-130°	2007.3	13.3
130°-140°	2132.2	14.1
140°-150°	1981.7	13.1
150°-160°	1593.2	10.5
160°-170°	1026.6	6.8
170°-180°	353.3	2.3
0°-30°	1471.8	9.7
0°-40°	2285.5	15.1
0°-60°	3620.7	23.9
0°-90°	4256.6	28.1
90°-120°	1789.0	11.8
90°-150°	7910.3	52.2
90°-180°	10883.0	71.9
0°-180°	15140.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2066	2066	2066	2066	2066	
5°	2066	2057	2033	2050	2044	196
15°	1966	1945	1881	1846	1827	554
25°	1784	1724	1601	1524	1496	821
35°	1537	1442	1277	1160	1118	962
45°	1257	1131	935	802	757	971
55°	956	810	608	496	460	854
65°	645	494	325	262	256	640
75°	344	213	150	136	135	364
85°	80	41	36	36	36	92
90°	3	32	54	67	72	14
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°	2066.5	2066.5	2066.5	2066.5	2066.5
2.5°	2075.8	2066.5	2045.9	2064.7	2060.9
5°	2066.5	2057.2	2032.8	2049.6	2044.1
7.5°	2049.6	2038.5	2012.3	2019.7	2010.3
10°	2027.2	2014.1	1976.8	1971.1	1959.9
12.5°	1999.2	1982.4	1931.8	1920.7	1900.0
15°	1965.5	1944.9	1881.4	1845.9	1827.2
17.5°	1926.2	1896.3	1817.7	1776.6	1746.6
20°	1881.4	1843.9	1750.4	1703.8	1662.5
22.5°	1832.8	1789.7	1681.2	1617.7	1589.7
25°	1784.1	1724.2	1600.8	1524.2	1496.0
27.5°	1726.2	1662.5	1526.0	1438.1	1395.1
30°	1664.5	1593.3	1443.7	1348.4	1297.8
32.5°	1604.6	1518.5	1365.3	1253.0	1206.2
35°	1537.3	1441.9	1277.4	1159.5	1118.3
37.5°	1471.8	1368.9	1195.1	1065.9	1019.3
40°	1402.6	1290.5	1108.9	976.2	927.6
42.5°	1331.6	1211.9	1023.0	884.5	837.9
45°	1256.8	1131.4	935.1	802.2	757.3
47.5°	1185.7	1053.0	851.0	718.1	677.0
50°	1107.2	974.4	768.7	639.5	600.4
52.5°	1030.4	890.1	690.1	566.7	531.2
55°	955.6	809.7	607.7	495.6	460.1
57.5°	879.0	729.4	534.9	430.2	400.2
60°	800.4	650.8	458.1	362.9	332.9
62.5°	723.8	574.2	392.7	303.0	288.1
65°	645.2	493.7	325.4	261.9	256.2
67.5°	570.4	418.9	261.9	230.0	224.4
70°	491.9	346.0	216.9	198.2	190.7
72.5°	417.1	278.6	181.4	166.5	162.7
75°	344.1	213.1	149.6	136.5	134.7
77.5°	271.2	151.4	117.9	110.3	106.5
80°	203.8	108.5	89.7	82.3	82.3
82.5°	142.1	73.0	61.7	57.9	57.9
85°	80.4	41.1	35.5	35.5	35.5
87.5°	30.0	14.9	14.9	13.1	13.1
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	6.37	7.05	7.50	8.16	9.72	2.34	3.02	3.47	4.14	5.69
	3H	8.03	8.64	9.17	9.77	11.34	3.52	4.12	4.66	5.25	6.82
	4H	8.63	9.21	9.78	10.34	11.91	3.96	4.54	5.11	5.67	7.24
	6H	9.05	9.58	10.20	10.71	12.29	4.28	4.81	5.43	5.93	7.52
	8H	9.17	9.67	10.33	10.82	12.40	4.36	4.87	5.52	6.01	7.59
	12H	9.23	9.70	10.39	10.84	12.44	4.40	4.88	5.56	6.02	7.62
4H	2H	6.37	6.94	7.52	8.07	9.65	2.92	3.49	4.07	4.62	6.20
	3H	8.18	8.66	9.34	9.81	11.40	4.25	4.73	5.41	5.89	7.47
	4H	8.87	9.31	10.03	10.45	12.06	4.80	5.24	5.96	6.38	7.99
	6H	9.37	9.75	10.54	10.92	12.51	5.21	5.58	6.37	6.75	8.35
	8H	9.55	9.90	10.71	11.05	12.67	5.33	5.69	6.50	6.84	8.46
	12H	9.63	9.95	10.82	11.12	12.74	5.39	5.71	6.57	6.88	8.50
8H	4H	8.82	9.18	9.99	10.33	11.95	5.07	5.42	6.23	6.57	8.19
	6H	9.38	9.67	10.57	10.87	12.48	5.58	5.87	6.76	7.07	8.68
	8H	9.60	9.85	10.79	11.03	12.66	5.77	6.02	6.96	7.20	8.83
	12H	9.73	9.95	10.93	11.13	12.79	5.88	6.10	7.08	7.28	8.94
12H	4H	8.77	9.09	9.95	10.26	11.87	5.06	5.38	6.24	6.55	8.17
	6H	9.36	9.61	10.55	10.79	12.42	5.63	5.88	6.82	7.06	8.69
	8H	9.57	9.80	10.77	10.97	12.63	5.83	6.05	7.03	7.23	8.89

END OF REPORT