

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: P905018

Luminaire Tested: DFN2DIP-4P4F0-030D070US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905018
REPORT IS A COMBINATION OF REPORTS P899127 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D070US835-FLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

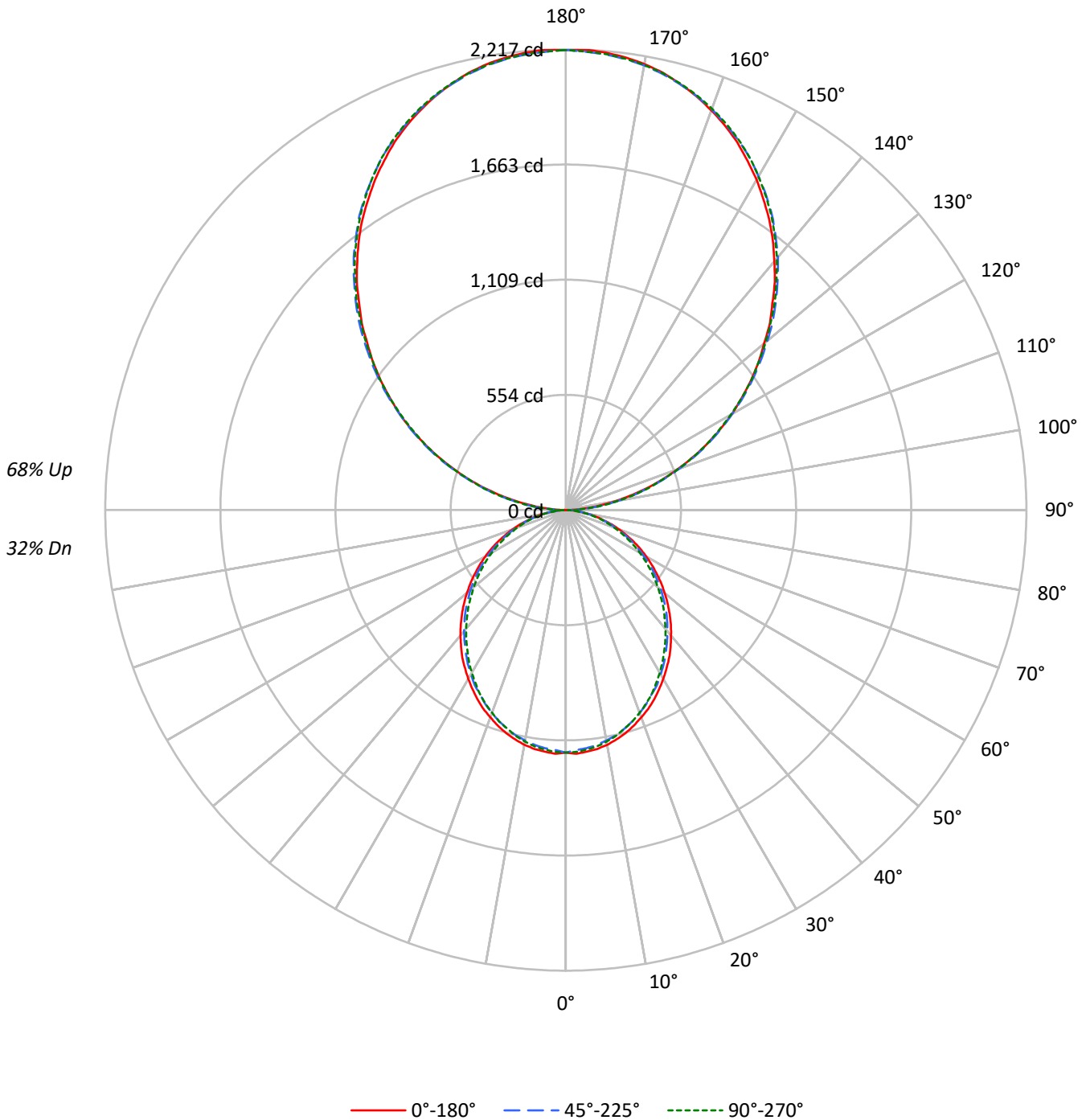
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9165.0 lumens
Efficiency: N/A
Efficacy: 103.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 88.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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	93	93	93	93	74	74	74	56	56	56	40	40	40	40	40	40	32
1	94	90	86	82	84	81	78	75	64	62	60	49	48	47	35	34	34	35	34	34	27
2	85	78	72	67	77	71	66	61	56	53	50	43	41	39	31	30	28	31	30	28	23
3	78	69	62	56	70	62	56	51	50	45	42	38	35	33	28	26	24	28	26	24	19
4	71	61	53	47	64	55	48	43	44	39	36	34	31	28	25	23	21	34	31	28	17
5	65	54	46	40	59	49	42	37	39	34	31	30	27	24	22	20	18	30	27	24	14
6	60	48	40	35	54	44	37	32	35	30	27	27	24	21	20	18	16	27	24	21	13
7	55	43	36	30	50	40	33	28	32	27	23	25	21	19	18	16	14	25	21	19	11
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	14	13	23	19	17	10
9	48	36	29	24	43	33	26	22	27	22	18	21	17	15	15	13	11	21	17	15	9
10	44	33	26	21	40	30	24	20	24	20	16	19	16	13	14	12	10	19	16	13	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	757	757	757
5°	759	747	752
10°	752	737	742
15°	741	725	726
20°	727	709	710
25°	712	689	692
30°	693	670	668
35°	676	648	643
40°	654	626	619
45°	632	604	595
50°	609	581	567
55°	584	554	541
60°	556	522	511
65°	526	489	476
70°	487	449	439
75°	433	401	405
80°	368	340	339
85°	267	233	228

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1675 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.9	1.2
10°-20°	309.1	3.4
20°-30°	454.3	5.0
30°-40°	527.6	5.8
40°-50°	527.0	5.7
50°-60°	459.5	5.0
60°-70°	339.7	3.7
70°-80°	192.2	2.1
80°-90°	57.0	0.6
90°-100°	137.0	1.5
100°-110°	435.3	4.7
110°-120°	744.9	8.1
120°-130°	979.6	10.7
130°-140°	1099.6	12.0
140°-150°	1078.3	11.8
150°-160°	904.5	9.9
160°-170°	599.9	6.5
170°-180°	209.7	2.3
0°-30°	873.3	9.5
0°-40°	1400.9	15.3
0°-60°	2387.4	26.0
0°-90°	2976.3	32.5
90°-120°	1317.2	14.4
90°-150°	4474.7	48.8
90°-180°	6189.0	67.5
0°-180°	9165.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1167	1167	1167	1167	1167	
5°	1167	1163	1150	1160	1157	111
15°	1111	1105	1090	1094	1089	313
25°	1006	997	978	980	978	463
35°	868	856	838	832	826	542
45°	706	698	681	669	664	545
55°	534	528	514	501	495	478
65°	360	354	342	332	327	356
75°	188	186	181	174	176	201
85°	46	45	44	40	39	51
90°	2	24	65	61	63	9
95°	97	116	120	120	116	108
105°	402	407	411	414	414	424
115°	748	758	755	753	748	739
125°	1087	1104	1099	1093	1091	972
135°	1406	1427	1431	1429	1424	1087
145°	1707	1721	1731	1733	1726	1067
155°	1952	1958	1964	1973	1967	899
165°	2124	2122	2122	2135	2126	599
175°	2210	2204	2200	2214	2202	210
180°	2214	2214	2214	2214	2214	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1167.3	1167.3	1167.3	1167.3	1167.3
2.5°	1174.1	1168.5	1156.1	1167.3	1165.2
5°	1167.3	1162.9	1150.5	1159.5	1157.3
7.5°	1159.5	1152.8	1140.4	1149.5	1147.2
10°	1147.2	1139.3	1125.9	1134.8	1131.5
12.5°	1130.3	1123.6	1110.2	1115.7	1113.5
15°	1111.2	1104.6	1089.9	1094.4	1088.8
17.5°	1087.6	1081.0	1066.3	1071.9	1066.3
20°	1061.8	1055.1	1039.4	1042.7	1038.3
22.5°	1036.1	1026.0	1011.3	1011.3	1009.0
25°	1005.7	996.8	977.7	979.9	977.7
27.5°	972.0	964.1	949.6	946.3	940.7
30°	938.4	929.4	912.6	909.2	904.7
32.5°	902.5	895.8	877.8	871.0	866.5
35°	867.7	856.5	838.5	831.7	826.1
37.5°	828.4	818.3	800.3	792.4	786.8
40°	788.0	779.0	761.0	751.0	746.5
42.5°	748.7	739.7	721.8	710.5	703.8
45°	706.1	698.2	681.3	669.0	664.5
47.5°	664.5	656.7	638.7	626.3	619.6
50°	620.7	615.1	599.4	583.7	578.1
52.5°	578.1	570.2	555.7	543.3	535.4
55°	534.4	527.6	514.1	500.7	495.1
57.5°	490.5	484.9	470.3	456.8	452.3
60°	446.7	442.3	426.6	414.2	410.9
62.5°	404.1	396.2	385.0	373.8	369.3
65°	360.4	353.6	342.4	332.3	326.7
67.5°	315.5	309.8	299.7	291.9	287.4
70°	273.9	269.4	259.3	251.4	247.0
72.5°	231.3	226.7	221.1	213.3	210.0
75°	188.5	186.4	180.7	174.0	176.3
77.5°	150.4	145.9	143.6	140.3	137.0
80°	112.3	111.1	108.8	105.5	103.3
82.5°	76.3	76.3	75.3	70.7	70.7
85°	46.0	44.9	43.8	40.4	39.3
87.5°	20.2	18.0	15.7	12.4	11.2
90°	2.0	24.0	65.4	61.4	63.4
92.5°	41.4	56.1	58.1	60.1	60.1
95°	97.4	116.1	119.5	119.5	116.1
97.5°	162.2	179.5	186.9	186.9	186.9
100°	236.9	252.3	257.6	257.6	255.6
102.5°	315.7	327.0	334.4	336.4	334.4
105°	401.8	407.1	411.1	414.5	414.5
107.5°	487.2	495.2	495.2	496.6	487.2
110°	570.0	580.7	580.7	580.7	575.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	659.4	670.8	668.8	663.4	659.4
115°	747.5	758.2	754.9	752.9	747.5
117.5°	834.9	849.6	840.3	834.9	829.6
120°	923.0	937.7	923.0	923.0	917.0
122.5°	1003.1	1021.8	1012.5	1007.1	1003.1
125°	1087.2	1103.9	1098.6	1092.6	1090.6
127.5°	1169.3	1190.0	1182.7	1174.7	1169.3
130°	1246.1	1270.1	1266.8	1262.8	1255.4
132.5°	1332.2	1350.9	1352.2	1342.9	1337.5
135°	1406.3	1426.9	1431.0	1428.9	1423.6
137.5°	1489.0	1505.7	1509.0	1507.7	1499.7
140°	1561.8	1578.5	1587.8	1587.8	1580.5
142.5°	1636.5	1653.2	1658.5	1660.5	1653.2
145°	1707.3	1720.6	1731.3	1733.3	1726.0
147.5°	1770.7	1787.4	1795.4	1798.7	1791.4
150°	1836.1	1847.4	1854.8	1860.8	1854.8
152.5°	1894.1	1905.5	1914.8	1922.2	1914.8
155°	1952.2	1957.5	1963.6	1972.9	1966.9
157.5°	2002.3	2006.3	2009.6	2023.0	2013.6
160°	2047.0	2051.0	2053.0	2064.3	2056.3
162.5°	2088.4	2088.4	2090.4	2103.0	2093.7
165°	2123.7	2121.7	2121.7	2135.1	2125.7
167.5°	2155.8	2149.8	2149.8	2163.1	2153.8
170°	2179.8	2174.5	2172.5	2185.8	2174.5
172.5°	2196.5	2191.1	2189.1	2202.5	2191.1
175°	2209.8	2204.5	2200.5	2213.8	2202.5
177.5°	2217.2	2211.8	2207.8	2219.2	2207.8
180°	2213.8	2213.8	2213.8	2213.8	2213.8



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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	4.43	5.16	5.53	6.25	7.75	3.99	4.71	5.08	5.81	7.31
	3H	6.09	6.74	7.19	7.84	9.36	5.60	6.25	6.70	7.35	8.87
	4H	6.68	7.29	7.79	8.39	9.92	6.18	6.80	7.29	7.90	9.42
	6H	7.07	7.64	8.19	8.74	10.28	6.57	7.14	7.69	8.24	9.78
	8H	7.18	7.71	8.30	8.83	10.36	6.67	7.21	7.80	8.33	9.86
	12H	7.22	7.73	8.35	8.85	10.40	6.71	7.22	7.84	8.34	9.89
4H	2H	4.88	5.50	6.00	6.60	8.12	4.53	5.14	5.65	6.24	7.77
	3H	6.74	7.25	7.87	8.38	9.92	6.33	6.85	7.46	7.97	9.51
	4H	7.45	7.92	8.58	9.04	10.60	7.03	7.50	8.16	8.62	10.17
	6H	7.97	8.37	9.10	9.51	11.06	7.53	7.94	8.67	9.08	10.63
	8H	8.11	8.49	9.25	9.62	11.19	7.68	8.06	8.81	9.19	10.75
	12H	8.18	8.53	9.34	9.67	11.24	7.73	8.08	8.89	9.22	10.79
8H	4H	7.64	8.02	8.78	9.15	10.71	7.26	7.64	8.40	8.77	10.34
	6H	8.27	8.58	9.43	9.76	11.32	7.89	8.20	9.05	9.37	10.94
	8H	8.49	8.77	9.66	9.92	11.50	8.10	8.37	9.26	9.53	11.11
	12H	8.62	8.86	9.79	10.01	11.63	8.21	8.45	9.38	9.60	11.22
12H	4H	7.62	7.96	8.77	9.10	10.67	7.25	7.59	8.40	8.74	10.31
	6H	8.30	8.57	9.46	9.73	11.31	7.93	8.20	9.09	9.36	10.94
	8H	8.54	8.78	9.71	9.93	11.55	8.16	8.40	9.33	9.55	11.17