

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: P920896

Luminaire Tested: DFN2DIP-TR3F0-090D060US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920896
REPORT IS A COMBINATION OF REPORTS P900325 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-090D060US935-FLLFLL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

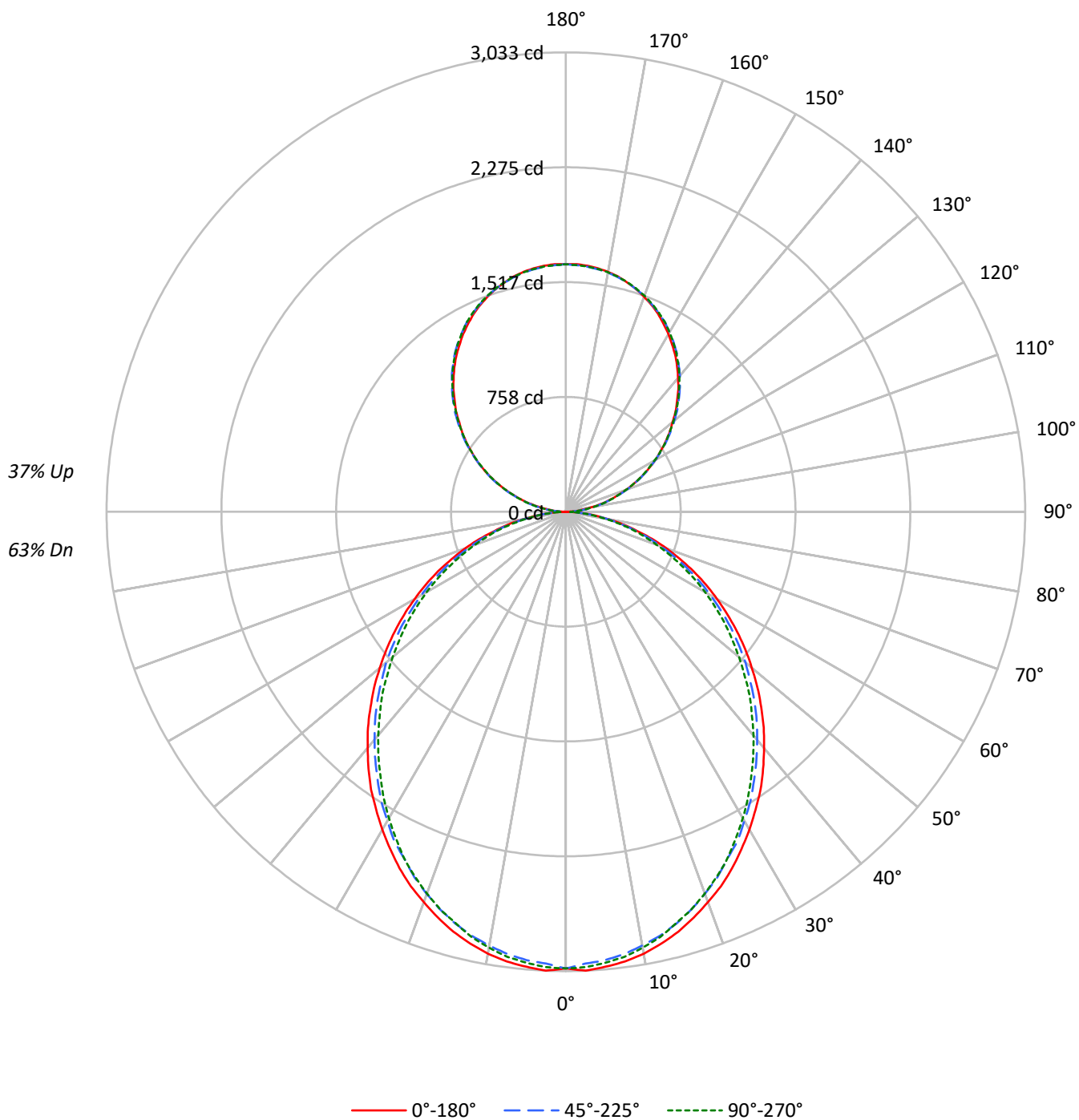
Lumens per Lamp: N/A
Luminaire Lumens: 12243.4 lumens
Efficiency: N/A
Efficacy: 87.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 140
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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
RCR																	
0	110	110	110	110	103	103	103	103	90	90	90		79	79	79		68
1	101	96	92	89	94	90	87	84	79	77	74		69	67	66		60
2	92	84	78	72	86	79	73	69	70	65	62		61	58	55		53
3	84	74	66	60	78	70	63	58	61	56	52		54	50	46		47
4	77	66	57	51	71	62	54	49	55	49	44		48	43	40		42
5	70	58	50	44	66	55	48	42	49	43	38		43	38	35		38
6	65	53	44	38	61	50	42	37	44	38	33		39	34	30		34
7	60	48	39	34	56	45	38	32	40	34	30		36	31	27		31
8	56	43	35	30	52	41	34	29	37	31	26		33	28	24		29
9	52	40	32	27	49	38	30	26	34	28	24		30	25	22		27
10	49	36	29	24	46	35	28	23	31	25	21		28	23	20		25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3757	3757	3757
5°	3761	3702	3727
10°	3729	3649	3674
15°	3672	3585	3593
20°	3595	3499	3510
25°	3520	3396	3414
30°	3425	3300	3293
35°	3336	3187	3165
40°	3225	3073	3043
45°	3115	2958	2918
50°	2995	2838	2774
55°	2869	2699	2640
60°	2726	2534	2487
65°	2570	2363	2307
70°	2371	2154	2112
75°	2097	1904	1929
80°	1765	1584	1585
85°	1246	1043	1023

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3115 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	283.8	2.3
10°-20°	798.5	6.5
20°-30°	1173.4	9.6
30°-40°	1362.9	11.1
40°-50°	1361.2	11.1
50°-60°	1186.9	9.7
60°-70°	877.4	7.2
70°-80°	496.4	4.1
80°-90°	135.7	1.1
90°-100°	101.1	0.8
100°-110°	321.2	2.6
110°-120°	549.7	4.5
120°-130°	723.0	5.9
130°-140°	811.5	6.6
140°-150°	795.8	6.5
150°-160°	667.5	5.5
160°-170°	442.7	3.6
170°-180°	154.7	1.3
0°-30°	2255.7	18.4
0°-40°	3618.6	29.6
0°-60°	6166.7	50.4
0°-90°	7676.2	62.7
90°-120°	972.0	7.9
90°-150°	3302.3	27.0
90°-180°	4567.0	37.3
0°-180°	12243.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3015	3015	3015	3015	3015	
5°	3015	3004	2972	2995	2989	286
15°	2870	2853	2815	2827	2812	808
25°	2598	2575	2526	2531	2526	1195
35°	2241	2212	2166	2148	2134	1400
45°	1824	1804	1760	1728	1716	1408
55°	1380	1363	1328	1293	1279	1234
65°	931	913	884	858	844	920
75°	487	481	467	449	455	520
85°	119	116	113	104	102	132
90°	2	18	48	45	47	12
95°	72	86	88	88	86	80
105°	296	300	303	306	306	313
115°	552	560	557	556	552	546
125°	802	815	811	806	805	717
135°	1038	1053	1056	1055	1051	802
145°	1260	1270	1278	1279	1274	787
155°	1441	1445	1449	1456	1452	663
165°	1567	1566	1566	1576	1569	442
175°	1631	1627	1624	1634	1625	155
180°	1634	1634	1634	1634	1634	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3015.1	3015.1	3015.1	3015.1	3015.1
2.5°	3032.7	3018.2	2986.3	3015.1	3009.6
5°	3015.1	3003.8	2971.8	2994.9	2989.3
7.5°	2994.9	2977.7	2945.6	2969.1	2963.2
10°	2963.2	2942.9	2908.1	2931.2	2922.6
12.5°	2919.5	2902.3	2867.6	2881.9	2876.2
15°	2870.3	2853.1	2815.2	2826.9	2812.4
17.5°	2809.3	2792.1	2754.3	2768.8	2754.3
20°	2742.6	2725.4	2684.8	2693.4	2682.0
22.5°	2676.2	2650.1	2612.2	2612.2	2606.3
25°	2597.7	2574.6	2525.5	2531.0	2525.5
27.5°	2510.7	2490.4	2452.9	2444.3	2429.8
30°	2424.0	2400.5	2357.2	2348.5	2336.9
32.5°	2331.1	2313.8	2267.4	2249.9	2238.2
35°	2241.3	2212.3	2165.8	2148.4	2133.9
37.5°	2139.8	2113.6	2067.1	2046.9	2032.4
40°	2035.4	2012.1	1965.6	1939.7	1928.1
42.5°	1933.9	1910.6	1864.4	1835.2	1818.0
45°	1823.8	1803.5	1759.8	1728.1	1716.5
47.5°	1716.5	1696.2	1649.7	1617.7	1600.5
50°	1603.3	1588.8	1548.2	1507.6	1493.1
52.5°	1493.1	1472.8	1435.3	1403.3	1383.0
55°	1380.3	1362.7	1327.9	1293.2	1278.8
57.5°	1267.0	1252.6	1214.8	1180.0	1168.3
60°	1153.8	1142.5	1101.8	1069.9	1061.3
62.5°	1043.7	1023.4	994.5	965.6	953.9
65°	930.8	913.3	884.3	858.2	843.8
67.5°	814.8	800.1	774.2	754.0	742.3
70°	707.5	695.8	669.7	649.4	638.0
72.5°	597.4	585.7	571.2	551.0	542.3
75°	487.0	481.4	466.7	449.4	455.3
77.5°	388.5	376.9	371.0	362.4	353.8
80°	290.1	287.0	281.1	272.5	266.7
82.5°	197.2	197.2	194.4	182.7	182.7
85°	118.7	116.0	113.2	104.3	101.5
87.5°	52.3	46.4	40.6	32.0	28.9
90°	1.5	17.7	48.3	45.3	46.8
92.5°	30.6	41.4	42.9	44.3	44.3
95°	71.9	85.7	88.2	88.2	85.7
97.5°	119.7	132.5	137.9	137.9	137.9
100°	174.9	186.1	190.1	190.1	188.6
102.5°	233.0	241.3	246.8	248.2	246.8
105°	296.5	300.5	303.4	305.9	305.9
107.5°	359.6	365.5	365.5	366.4	359.6
110°	420.7	428.5	428.5	428.5	424.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	486.6	495.0	493.5	489.6	486.6
115°	551.6	559.6	557.1	555.6	551.6
117.5°	616.2	627.1	620.1	616.2	612.3
120°	681.2	692.1	681.2	681.2	676.7
122.5°	740.3	754.1	747.2	743.3	740.3
125°	802.4	814.7	810.7	806.3	804.9
127.5°	863.0	878.2	872.8	866.9	863.0
130°	919.6	937.4	934.9	931.9	926.5
132.5°	983.2	996.9	997.9	991.0	987.0
135°	1037.8	1053.1	1056.0	1054.6	1050.6
137.5°	1098.9	1111.2	1113.7	1112.7	1106.8
140°	1152.6	1164.9	1171.8	1171.8	1166.4
142.5°	1207.7	1220.0	1224.0	1225.5	1220.0
145°	1260.0	1269.8	1277.7	1279.2	1273.8
147.5°	1306.7	1319.0	1325.0	1327.4	1322.0
150°	1355.0	1363.4	1368.8	1373.2	1368.8
152.5°	1397.8	1406.3	1413.2	1418.6	1413.2
155°	1440.7	1444.7	1449.1	1456.0	1451.6
157.5°	1477.6	1480.7	1483.1	1493.0	1486.1
160°	1510.7	1513.6	1515.1	1523.4	1517.6
162.5°	1541.2	1541.2	1542.6	1552.0	1545.1
165°	1567.3	1565.8	1565.8	1575.7	1568.8
167.5°	1591.0	1586.6	1586.6	1596.4	1589.5
170°	1608.7	1604.7	1603.3	1613.1	1604.7
172.5°	1621.0	1617.0	1615.6	1625.4	1617.0
175°	1630.8	1626.9	1623.9	1633.8	1625.4
177.5°	1636.2	1632.4	1629.4	1637.7	1629.4
180°	1633.8	1633.8	1633.8	1633.8	1633.8

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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	12.91	13.90	13.75	14.76	15.84	12.49	13.47	13.33	14.34	15.41
	3H	14.57	15.46	15.43	16.33	17.44	14.11	14.99	14.96	15.87	16.97
	4H	15.16	16.00	16.03	16.88	17.99	14.69	15.53	15.56	16.41	17.53
	6H	15.56	16.33	16.44	17.22	18.35	15.09	15.86	15.97	16.75	17.88
	8H	15.67	16.40	16.55	17.31	18.43	15.20	15.93	16.09	16.84	17.96
	12H	15.71	16.42	16.61	17.31	18.47	15.24	15.94	16.14	16.84	17.99
4H	2H	13.39	14.23	14.26	15.10	16.22	13.04	13.88	13.92	14.76	15.88
	3H	15.25	15.95	16.14	16.86	17.99	14.86	15.56	15.75	16.47	17.61
	4H	15.97	16.60	16.86	17.51	18.67	15.56	16.20	16.46	17.11	18.27
	6H	16.48	17.03	17.39	17.96	19.12	16.08	16.63	16.99	17.56	18.72
	8H	16.63	17.14	17.54	18.07	19.24	16.22	16.74	17.14	17.66	18.83
	12H	16.70	17.17	17.64	18.11	19.29	16.29	16.75	17.22	17.69	18.87
8H	4H	16.17	16.68	17.08	17.61	18.78	15.81	16.33	16.73	17.25	18.42
	6H	16.79	17.22	17.73	18.19	19.36	16.44	16.86	17.38	17.83	19.00
	8H	17.01	17.39	17.96	18.35	19.53	16.65	17.02	17.60	17.98	19.17
	12H	17.14	17.47	18.09	18.42	19.66	16.76	17.10	17.72	18.05	19.28
12H	4H	16.16	16.62	17.09	17.57	18.74	15.81	16.28	16.74	17.22	18.40
	6H	16.82	17.20	17.77	18.16	19.35	16.48	16.85	17.43	17.81	19.00
	8H	17.06	17.40	18.02	18.35	19.59	16.71	17.04	17.67	17.99	19.23