

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: P904439

Luminaire Tested: DFN2DIP-TR3F0-060D030US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904439
REPORT IS A COMBINATION OF REPORTS P901797 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-060D030US830-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

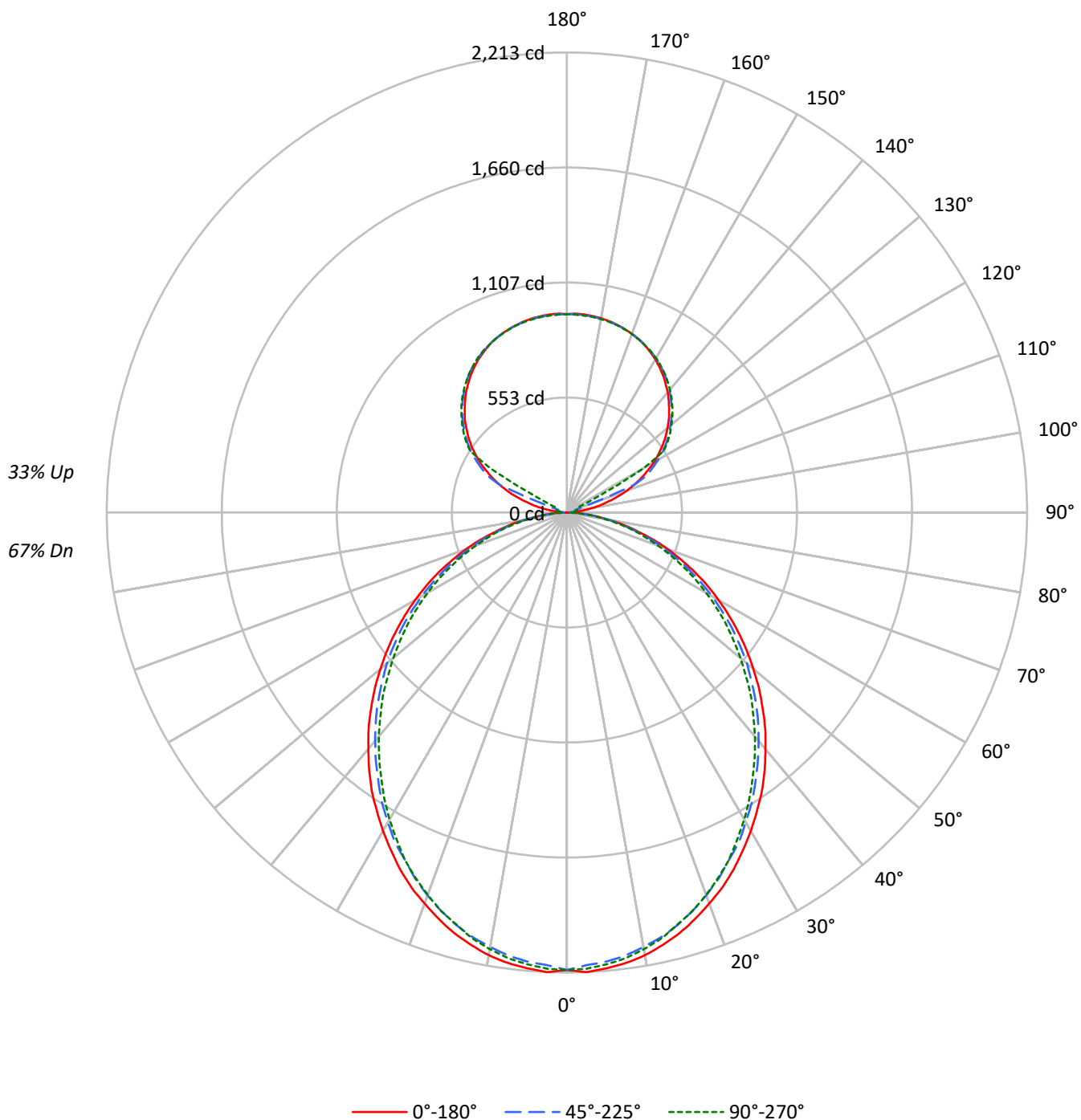
Lumens per Lamp: N/A
Luminaire Lumens: 8398.1 lumens
Efficiency: N/A
Efficacy: 104.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 80.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P904439

CATALOG NUMBER: DFN2DIP-TR3F0-060D030US830-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P904439

CATALOG NUMBER: DFN2DIP-TR3F0-060D030US830-FLONL

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2742	2742	2742
5°	2745	2701	2720
10°	2721	2663	2682
15°	2680	2617	2622
20°	2624	2553	2562
25°	2569	2478	2492
30°	2500	2408	2403
35°	2434	2326	2310
40°	2354	2243	2221
45°	2274	2159	2130
50°	2186	2071	2024
55°	2094	1970	1927
60°	1990	1850	1815
65°	1876	1725	1684
70°	1731	1572	1541
75°	1530	1389	1407
80°	1288	1156	1157
85°	909	761	747

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2274 cd/sqm

TEST NUMBER: P904439

CATALOG NUMBER: DFN2DIP-TR3F0-060D030US830-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.1	2.5
10°-20°	582.7	6.9
20°-30°	856.4	10.2
30°-40°	994.6	11.8
40°-50°	993.4	11.8
50°-60°	866.2	10.3
60°-70°	640.3	7.6
70°-80°	362.3	4.3
80°-90°	97.3	1.2
90°-100°	31.5	0.4
100°-110°	117.3	1.4
110°-120°	311.1	3.7
120°-130°	516.0	6.1
130°-140°	548.1	6.5
140°-150°	509.4	6.1
150°-160°	409.6	4.9
160°-170°	263.9	3.1
170°-180°	90.8	1.1
0°-30°	1646.2	19.6
0°-40°	2640.9	31.4
0°-60°	4500.5	53.6
0°-90°	5600.4	66.7
90°-120°	459.9	5.5
90°-150°	2033.4	24.2
90°-180°	2798.0	33.3
0°-180°	8398.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2200	2200	2200	2200	2200	
5°	2200	2192	2169	2186	2182	209
15°	2095	2082	2055	2063	2053	590
25°	1896	1879	1843	1847	1843	872
35°	1636	1615	1581	1568	1557	1021
45°	1331	1316	1284	1261	1253	1027
55°	1007	994	969	944	933	901
65°	679	667	646	626	616	672
75°	355	351	340	328	332	379
85°	87	85	83	76	74	97
90°	1	8	14	17	19	8
95°	45	22	27	30	30	53
105°	210	231	42	50	52	224
115°	397	409	426	106	57	391
125°	561	570	584	588	590	501
135°	695	706	712	719	718	537
145°	806	805	817	822	818	504
155°	887	881	889	894	888	409
165°	935	931	933	938	933	264
175°	956	952	953	958	951	91
180°	954	954	954	954	954	

TEST NUMBER: P904439

CATALOG NUMBER: DFN2DIP-TR3F0-060D030US830-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2200.5	2200.5	2200.5	2200.5	2200.5
2.5°	2213.3	2202.7	2179.3	2200.5	2196.4
5°	2200.5	2192.2	2168.8	2185.7	2181.6
7.5°	2185.7	2173.1	2149.8	2166.8	2162.6
10°	2162.6	2147.8	2122.3	2139.2	2132.9
12.5°	2130.7	2118.1	2092.7	2103.3	2099.0
15°	2094.7	2082.2	2054.6	2063.1	2052.6
17.5°	2050.3	2037.8	2010.2	2020.6	2010.2
20°	2001.6	1989.0	1959.4	1965.7	1957.4
22.5°	1953.1	1934.0	1906.4	1906.4	1902.1
25°	1895.8	1879.1	1843.0	1847.1	1843.0
27.5°	1832.3	1817.5	1790.1	1783.9	1773.3
30°	1769.1	1751.9	1720.3	1714.0	1705.4
32.5°	1701.2	1688.7	1654.7	1641.9	1633.4
35°	1635.7	1614.6	1580.6	1567.8	1557.3
37.5°	1561.6	1542.5	1508.6	1493.7	1483.2
40°	1485.4	1468.4	1434.5	1415.7	1407.1
42.5°	1411.4	1394.3	1360.7	1339.4	1326.7
45°	1331.1	1316.2	1284.3	1261.2	1252.6
47.5°	1252.6	1237.8	1204.0	1180.6	1168.0
50°	1170.1	1159.5	1129.9	1100.2	1089.7
52.5°	1089.7	1074.9	1047.4	1024.2	1009.4
55°	1007.3	994.5	969.1	943.8	933.2
57.5°	924.7	914.2	886.6	861.2	852.6
60°	842.1	833.8	804.2	780.8	774.5
62.5°	761.7	746.9	725.8	704.6	696.2
65°	679.3	666.6	645.5	626.3	615.8
67.5°	594.6	583.9	565.1	550.3	541.7
70°	516.3	507.8	488.7	473.9	465.6
72.5°	435.9	427.4	416.9	402.1	395.8
75°	355.3	351.4	340.5	328.0	332.2
77.5°	283.5	275.0	270.7	264.5	258.2
80°	211.7	209.4	205.2	198.9	194.6
82.5°	143.9	143.9	141.9	133.4	133.4
85°	86.6	84.6	82.6	76.1	74.1
87.5°	38.2	33.9	29.6	23.4	21.1
90°	0.7	8.3	13.8	17.3	18.6
92.5°	17.3	14.5	16.6	18.0	18.6
95°	44.9	22.1	26.9	30.4	29.7
97.5°	80.8	24.2	35.2	37.3	38.0
100°	122.2	27.6	39.4	44.9	46.3
102.5°	167.8	166.5	40.7	48.3	50.4
105°	209.9	230.6	42.1	49.7	52.5
107.5°	258.9	276.2	43.5	51.1	53.9
110°	305.9	320.4	120.8	51.8	54.6

TEST NUMBER: P904439

CATALOG NUMBER: DFN2DIP-TR3F0-060D030US830-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	350.2	362.5	350.8	53.2	55.2
115°	397.0	408.8	426.0	106.3	56.6
117.5°	437.8	451.6	463.4	364.6	183.7
120°	483.3	493.7	506.1	514.4	421.2
122.5°	522.0	533.1	547.0	551.0	551.8
125°	561.4	570.3	583.5	588.3	590.4
127.5°	597.3	606.9	617.4	624.2	624.9
130°	631.1	642.2	649.8	657.3	656.8
132.5°	665.6	674.7	682.2	688.4	687.8
135°	694.7	705.8	711.9	718.9	717.5
137.5°	725.0	733.3	740.3	747.2	745.1
140°	754.7	760.3	767.8	774.0	770.6
142.5°	779.7	784.5	793.4	798.9	795.5
145°	805.9	805.1	816.9	821.7	818.2
147.5°	828.6	826.5	838.3	841.7	839.0
150°	850.7	845.9	857.0	861.0	857.6
152.5°	869.3	863.8	874.2	878.4	873.5
155°	887.3	881.2	889.4	893.5	888.1
157.5°	901.8	896.4	902.6	907.4	901.8
160°	914.3	910.1	914.3	918.4	913.5
162.5°	925.3	921.1	924.6	929.4	923.2
165°	934.9	930.9	932.9	937.7	932.9
167.5°	942.5	938.4	940.5	945.4	939.1
170°	948.8	944.6	946.0	950.8	944.6
172.5°	952.9	948.8	950.2	955.0	948.8
175°	956.3	951.5	952.9	957.7	950.8
177.5°	957.7	952.9	953.7	958.5	952.3
180°	954.3	954.3	954.3	954.3	954.3

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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	12.14	13.17	12.94	13.99	15.01	11.71	12.74	12.51	13.57	14.58
	3H	13.80	14.73	14.61	15.56	16.60	13.33	14.26	14.15	15.09	16.13
	4H	14.39	15.27	15.22	16.11	17.16	13.92	14.80	14.75	15.64	16.69
	6H	14.79	15.60	15.63	16.45	17.51	14.32	15.13	15.16	15.98	17.04
	8H	14.90	15.67	15.75	16.53	17.60	14.43	15.20	15.28	16.07	17.13
	12H	14.95	15.68	15.81	16.54	17.63	14.48	15.21	15.33	16.07	17.16
4H	2H	12.62	13.49	13.45	14.33	15.38	12.27	13.15	13.11	13.99	15.04
	3H	14.49	15.22	15.33	16.09	17.16	14.10	14.83	14.94	15.70	16.77
	4H	15.20	15.87	16.06	16.74	17.83	14.80	15.47	15.66	16.34	17.43
	6H	15.72	16.29	16.59	17.19	18.29	15.31	15.89	16.19	16.78	17.88
	8H	15.87	16.41	16.74	17.29	18.40	15.46	16.00	16.34	16.89	18.00
	12H	15.94	16.43	16.84	17.34	18.45	15.53	16.01	16.43	16.92	18.04
8H	4H	15.41	15.95	16.28	16.84	17.95	15.05	15.59	15.93	16.48	17.59
	6H	16.03	16.48	16.94	17.41	18.52	15.68	16.12	16.58	17.05	18.16
	8H	16.25	16.65	17.17	17.57	18.70	15.89	16.28	16.80	17.21	18.33
	12H	16.38	16.73	17.30	17.65	18.83	16.01	16.36	16.92	17.27	18.45
12H	4H	15.40	15.89	16.30	16.80	17.91	15.05	15.54	15.95	16.45	17.56
	6H	16.06	16.46	16.98	17.39	18.51	15.72	16.11	16.63	17.04	18.16
	8H	16.31	16.66	17.23	17.57	18.75	15.96	16.30	16.87	17.22	18.40

END OF REPORT