

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: P923472

Luminaire Tested: DFN2DIP-TR3F0-030D070US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923472
REPORT IS A COMBINATION OF REPORTS P900327 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-030D070US940-FLLFLL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

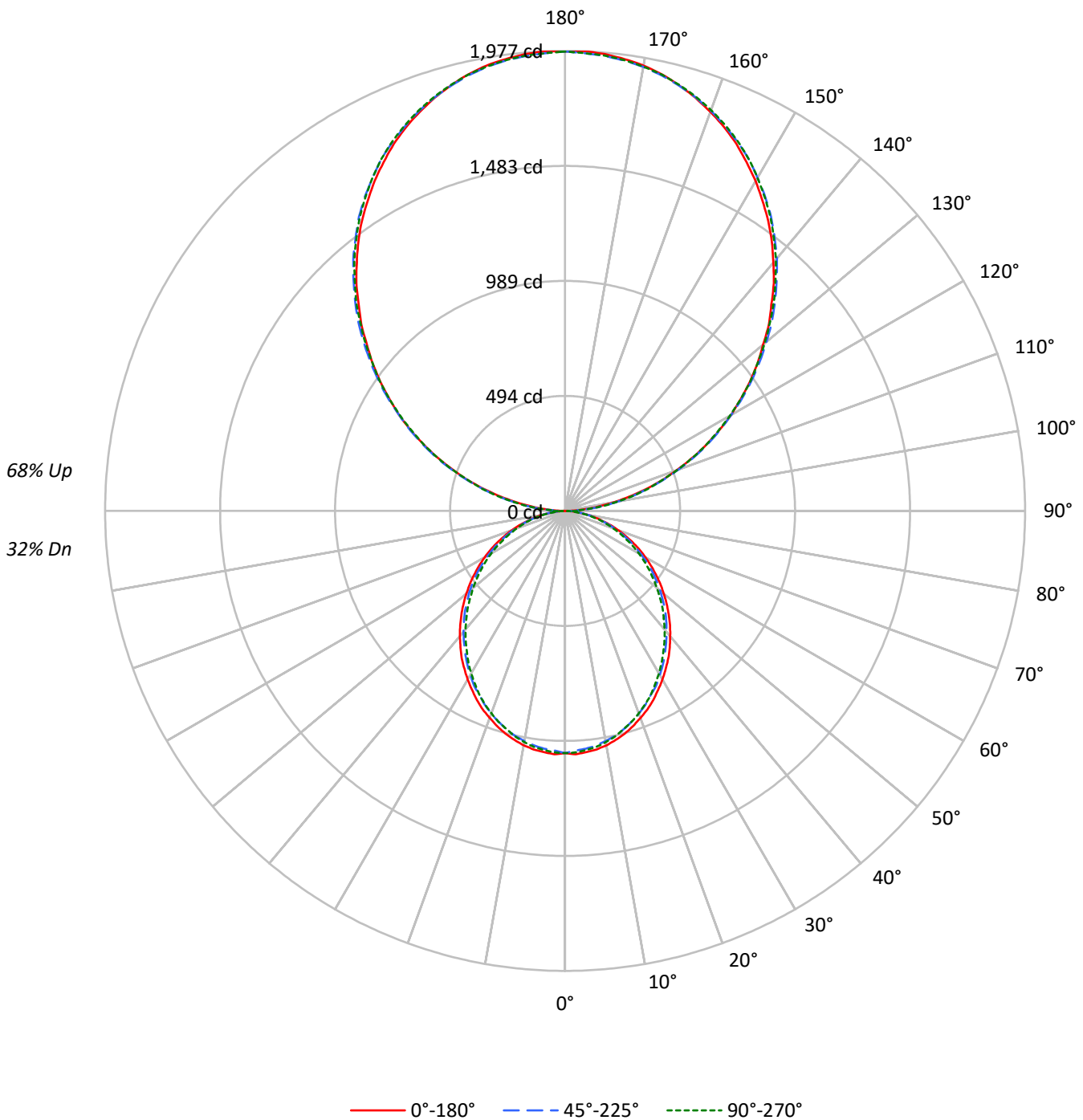
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8172.6 lumens
Efficiency: N/A
Efficacy: 105.9 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-Indirect

Input Watts (W): 77.2
Input Voltage (V):
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.9968
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	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°	1297	1297	1297
5°	1298	1278	1287
10°	1287	1260	1269
15°	1268	1238	1240
20°	1241	1208	1212
25°	1215	1172	1179
30°	1182	1139	1137
35°	1151	1100	1093
40°	1113	1061	1051
45°	1075	1021	1007
50°	1034	980	958
55°	990	932	912
60°	941	875	859
65°	887	816	796
70°	819	744	729
75°	724	657	666
80°	609	547	547
85°	430	360	353

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1926 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.0	1.2
10°-20°	275.6	3.4
20°-30°	405.1	5.0
30°-40°	470.5	5.8
40°-50°	469.9	5.7
50°-60°	409.8	5.0
60°-70°	302.9	3.7
70°-80°	171.4	2.1
80°-90°	50.8	0.6
90°-100°	122.2	1.5
100°-110°	388.1	4.7
110°-120°	664.2	8.1
120°-130°	873.6	10.7
130°-140°	980.5	12.0
140°-150°	961.5	11.8
150°-160°	806.6	9.9
160°-170°	534.9	6.5
170°-180°	187.0	2.3
0°-30°	778.7	9.5
0°-40°	1249.2	15.3
0°-60°	2128.9	26.0
0°-90°	2654.0	32.5
90°-120°	1174.5	14.4
90°-150°	3990.1	48.8
90°-180°	5519.0	67.5
0°-180°	8172.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1041	1041	1041	1041	1041	
5°	1041	1037	1026	1034	1032	99
15°	991	985	972	976	971	279
25°	897	889	872	874	872	413
35°	774	764	748	742	737	483
45°	630	623	608	597	592	486
55°	476	470	458	446	442	426
65°	321	315	305	296	291	318
75°	168	166	161	155	157	179
85°	41	40	39	36	35	46
90°	2	21	58	55	56	8
95°	87	104	107	107	104	97
105°	358	363	367	370	370	378
115°	667	676	673	671	667	659
125°	970	984	980	974	972	866
135°	1254	1272	1276	1274	1269	969
145°	1522	1534	1544	1546	1539	951
155°	1741	1746	1751	1759	1754	801
165°	1894	1892	1892	1904	1896	534
175°	1970	1966	1962	1974	1964	187
180°	1974	1974	1974	1974	1974	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1040.9	1040.9	1040.9	1040.9	1040.9
2.5°	1047.0	1042.0	1030.9	1040.9	1039.0
5°	1040.9	1037.0	1025.9	1033.9	1032.0
7.5°	1033.9	1028.0	1016.9	1025.0	1023.0
10°	1023.0	1015.9	1004.0	1011.9	1009.0
12.5°	1007.9	1001.9	990.0	994.9	992.9
15°	990.9	985.0	971.9	975.9	970.9
17.5°	969.8	963.9	950.8	955.8	950.8
20°	946.8	940.8	926.8	929.8	925.9
22.5°	923.9	914.9	901.8	901.8	899.7
25°	896.8	888.9	871.8	873.8	871.8
27.5°	866.7	859.7	846.8	843.8	838.8
30°	836.8	828.8	813.8	810.7	806.7
32.5°	804.8	798.8	782.7	776.7	772.7
35°	773.7	763.7	747.7	741.6	736.6
37.5°	738.7	729.7	713.6	706.6	701.6
40°	702.7	694.6	678.6	669.7	665.7
42.5°	667.6	659.6	643.6	633.6	627.6
45°	629.6	622.6	607.5	596.6	592.5
47.5°	592.5	585.6	569.5	558.5	552.5
50°	553.5	548.5	534.5	520.5	515.5
52.5°	515.5	508.5	495.5	484.5	477.4
55°	476.5	470.5	458.4	446.5	441.5
57.5°	437.4	432.4	419.4	407.3	403.3
60°	398.3	394.4	380.4	369.3	366.4
62.5°	360.3	353.3	343.3	333.3	329.3
65°	321.4	315.3	305.3	296.3	291.3
67.5°	281.3	276.3	267.2	260.3	256.3
70°	244.2	240.2	231.2	224.2	220.3
72.5°	206.3	202.2	197.2	190.2	187.3
75°	168.1	166.2	161.1	155.2	157.2
77.5°	134.1	130.1	128.0	125.1	122.2
80°	100.1	99.1	97.0	94.1	92.1
82.5°	68.0	68.0	67.1	63.0	63.0
85°	41.0	40.0	39.1	36.0	35.0
87.5°	18.0	16.1	14.0	11.1	10.0
90°	1.8	21.4	58.3	54.8	56.5
92.5°	36.9	50.0	51.8	53.6	53.6
95°	86.9	103.5	106.6	106.6	103.5
97.5°	144.6	160.1	166.7	166.7	166.7
100°	211.2	225.0	229.7	229.7	227.9
102.5°	281.5	291.6	298.2	300.0	298.2
105°	358.3	363.0	366.6	369.6	369.6
107.5°	434.4	441.6	441.6	442.8	434.4
110°	508.3	517.8	517.8	517.8	513.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	588.0	598.2	596.4	591.6	588.0
115°	666.6	676.1	673.2	671.4	666.6
117.5°	744.5	757.6	749.3	744.5	739.8
120°	823.0	836.2	823.0	823.0	817.7
122.5°	894.5	911.1	902.9	898.0	894.5
125°	969.5	984.4	979.6	974.3	972.5
127.5°	1042.7	1061.1	1054.6	1047.5	1042.7
130°	1111.2	1132.6	1129.6	1126.1	1119.5
132.5°	1187.9	1204.6	1205.8	1197.5	1192.7
135°	1254.0	1272.4	1276.0	1274.2	1269.4
137.5°	1327.8	1342.6	1345.6	1344.4	1337.3
140°	1392.7	1407.6	1415.9	1415.9	1409.3
142.5°	1459.3	1474.2	1478.9	1480.7	1474.2
145°	1522.4	1534.3	1543.8	1545.6	1539.1
147.5°	1579.0	1593.8	1601.0	1603.9	1597.4
150°	1637.3	1647.3	1653.9	1659.3	1653.9
152.5°	1689.0	1699.2	1707.4	1714.0	1707.4
155°	1740.8	1745.5	1751.0	1759.3	1753.9
157.5°	1785.5	1789.0	1792.0	1803.9	1795.5
160°	1825.3	1828.9	1830.7	1840.8	1833.6
162.5°	1862.2	1862.2	1864.0	1875.3	1867.0
165°	1893.7	1891.9	1891.9	1903.9	1895.5
167.5°	1922.3	1917.0	1917.0	1928.9	1920.6
170°	1943.8	1939.0	1937.2	1949.1	1939.0
172.5°	1958.6	1953.8	1952.0	1964.0	1953.8
175°	1970.5	1965.8	1962.2	1974.1	1964.0
177.5°	1977.1	1972.3	1968.7	1978.9	1968.7
180°	1974.1	1974.1	1974.1	1974.1	1974.1



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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	6.23	6.96	7.33	8.05	9.55	5.80	6.53	6.90	7.62	9.12
	3H	7.87	8.52	8.98	9.62	11.14	7.41	8.05	8.51	9.16	10.67
	4H	8.45	9.06	9.56	10.17	11.69	7.98	8.60	9.10	9.70	11.22
	6H	8.83	9.40	9.96	10.51	12.04	8.37	8.93	9.49	10.04	11.57
	8H	8.93	9.47	10.06	10.59	12.12	8.46	9.00	9.59	10.12	11.65
	12H	8.97	9.48	10.10	10.60	12.15	8.50	9.01	9.63	10.12	11.68
4H	2H	6.67	7.29	7.80	8.39	9.92	6.33	6.95	7.45	8.05	9.57
	3H	8.52	9.03	9.64	10.16	11.70	8.13	8.64	9.26	9.77	11.31
	4H	9.22	9.69	10.35	10.81	12.37	8.82	9.29	9.95	10.41	11.96
	6H	9.72	10.12	10.85	11.26	12.81	9.31	9.72	10.45	10.86	12.41
	8H	9.86	10.24	11.00	11.37	12.93	9.45	9.83	10.59	10.96	12.53
	12H	9.92	10.26	11.07	11.41	12.98	9.51	9.85	10.66	10.99	12.56
8H	4H	9.40	9.78	10.54	10.91	12.47	9.04	9.42	10.18	10.55	12.12
	6H	10.01	10.33	11.17	11.50	13.06	9.66	9.97	10.81	11.14	12.70
	8H	10.23	10.50	11.39	11.65	13.24	9.86	10.14	11.03	11.29	12.87
	12H	10.35	10.59	11.51	11.74	13.35	9.97	10.21	11.14	11.36	12.97
12H	4H	9.38	9.72	10.53	10.86	12.43	9.03	9.37	10.18	10.52	12.09
	6H	10.04	10.31	11.20	11.47	13.05	9.69	9.97	10.86	11.12	12.70
	8H	10.27	10.51	11.44	11.66	13.28	9.92	10.16	11.08	11.31	12.92