

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: P915502

Luminaire Tested: DFN2DIP-TR4F0-050D070US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915502
REPORT IS A COMBINATION OF REPORTS P900425 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D070US927-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

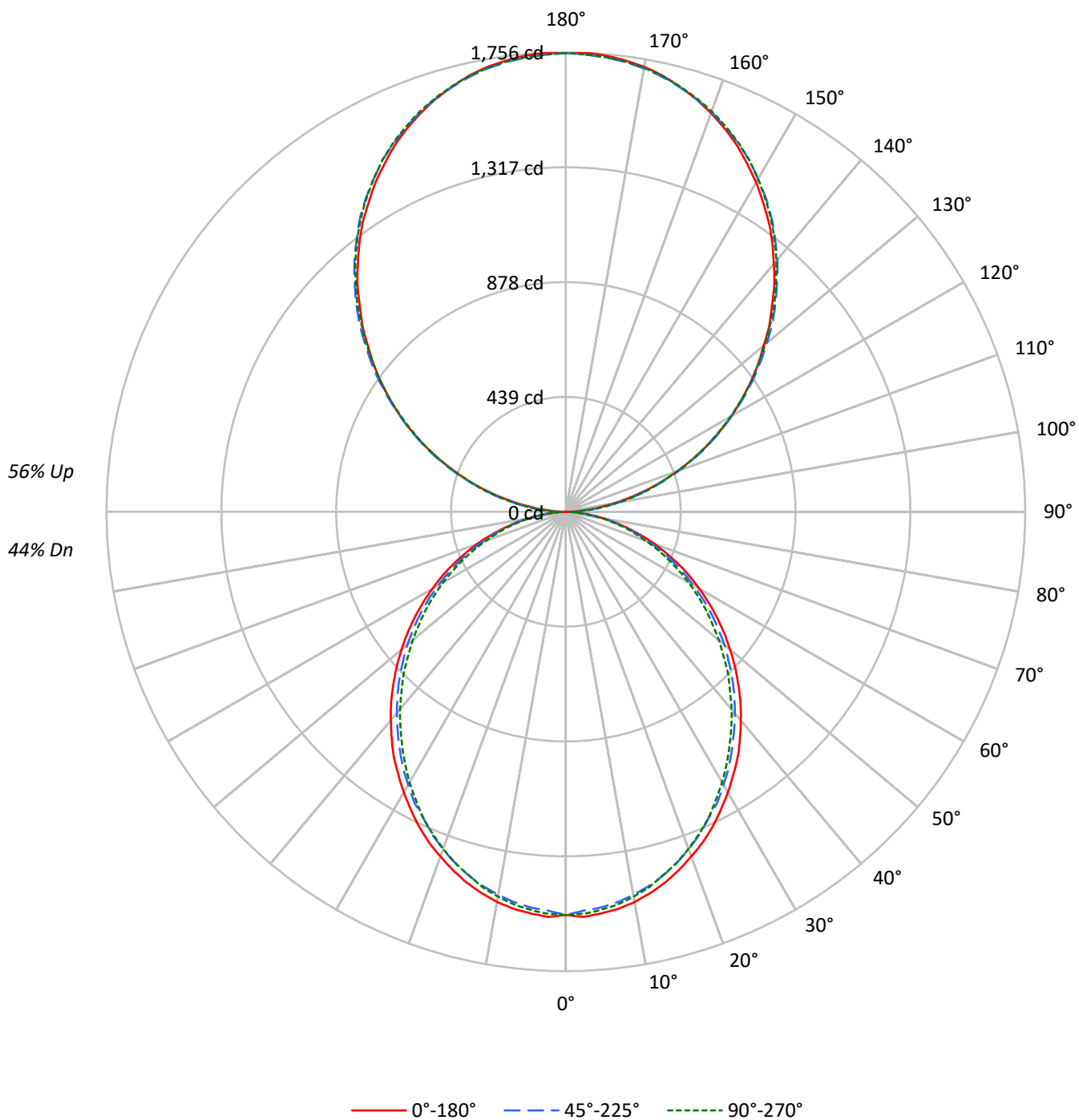
Lumens per Lamp: N/A
Luminaire Lumens: 8828.9 lumens
Efficiency: N/A
Efficacy: 93.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 94.1
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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	36
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31
4	73	63	55	49	67	58	51	45	48	43	39	40	36	33	31	29	27
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16
9	49	37	30	25	45	35	28	23	29	24	20	24	20	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1224	1224	1224
5°	1226	1207	1215
10°	1216	1191	1199
15°	1199	1171	1173
20°	1174	1144	1147
25°	1150	1112	1116
30°	1120	1081	1078
35°	1092	1045	1037
40°	1057	1009	998
45°	1021	973	958
50°	983	935	912
55°	943	891	869
60°	898	839	820
65°	848	785	763
70°	785	719	701
75°	698	640	644
80°	593	540	535
85°	429	366	355

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1366 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	145.1	1.6
10°-20°	408.1	4.6
20°-30°	599.8	6.8
30°-40°	696.6	7.9
40°-50°	695.8	7.9
50°-60°	606.7	6.9
60°-70°	448.5	5.1
70°-80°	253.7	2.9
80°-90°	71.9	0.8
90°-100°	108.5	1.2
100°-110°	344.8	3.9
110°-120°	590.1	6.7
120°-130°	776.1	8.8
130°-140°	871.1	9.9
140°-150°	854.2	9.7
150°-160°	716.6	8.1
160°-170°	475.2	5.4
170°-180°	166.1	1.9
0°-30°	1153.0	13.1
0°-40°	1849.6	20.9
0°-60°	3152.1	35.7
0°-90°	3926.3	44.5
90°-120°	1043.4	11.8
90°-150°	3544.8	40.1
90°-180°	4903.0	55.5
0°-180°	8828.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1541	1541	1541	1541	1541	
5°	1541	1535	1519	1531	1528	146
15°	1467	1458	1439	1445	1438	413
25°	1328	1316	1291	1294	1291	611
35°	1146	1131	1107	1098	1091	715
45°	932	922	900	883	877	719
55°	706	697	679	661	654	631
65°	476	467	452	439	431	470
75°	249	246	238	230	233	266
85°	61	59	58	53	52	68
90°	2	19	52	49	50	9
95°	77	92	95	95	92	86
105°	318	322	326	328	328	336
115°	592	601	598	596	592	586
125°	861	874	870	866	864	770
135°	1114	1130	1134	1132	1128	861
145°	1352	1363	1372	1373	1367	845
155°	1546	1551	1556	1563	1558	712
165°	1682	1681	1681	1691	1684	475
175°	1751	1746	1743	1754	1745	166
180°	1754	1754	1754	1754	1754	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1541.2	1541.2	1541.2	1541.2	1541.2
2.5°	1550.1	1542.8	1526.5	1541.2	1538.4
5°	1541.2	1535.4	1519.0	1530.8	1528.0
7.5°	1530.8	1522.0	1505.7	1517.7	1514.7
10°	1514.7	1504.3	1486.5	1498.3	1493.9
12.5°	1492.3	1483.5	1465.8	1473.1	1470.1
15°	1467.1	1458.3	1439.0	1445.0	1437.6
17.5°	1436.0	1427.2	1407.9	1415.2	1407.9
20°	1401.9	1393.1	1372.4	1376.7	1370.9
22.5°	1367.9	1354.6	1335.2	1335.2	1332.2
25°	1327.9	1316.1	1290.9	1293.7	1290.9
27.5°	1283.3	1273.0	1253.8	1249.3	1242.0
30°	1239.0	1227.1	1204.9	1200.5	1194.5
32.5°	1191.5	1182.7	1159.0	1150.0	1144.1
35°	1145.6	1130.8	1107.1	1098.1	1090.8
37.5°	1093.7	1080.4	1056.6	1046.2	1038.9
40°	1040.5	1028.5	1004.7	991.5	985.6
42.5°	988.6	976.6	953.0	938.0	929.2
45°	932.2	921.9	899.5	883.4	877.3
47.5°	877.3	867.0	843.3	826.9	818.1
50°	819.5	812.1	791.4	770.6	763.2
52.5°	763.2	752.8	733.6	717.3	706.9
55°	705.5	696.6	678.7	661.0	653.6
57.5°	647.6	640.2	620.9	603.2	597.1
60°	589.8	584.0	563.2	546.8	542.5
62.5°	533.5	523.2	508.3	493.5	487.6
65°	475.8	466.8	452.0	438.7	431.3
67.5°	416.5	409.0	395.8	385.4	379.4
70°	361.6	355.7	342.3	331.9	326.1
72.5°	305.4	299.4	292.0	281.6	277.2
75°	248.9	246.1	238.5	229.7	232.7
77.5°	198.6	192.6	189.6	185.2	180.9
80°	148.3	146.7	143.7	139.3	136.3
82.5°	100.8	100.8	99.3	93.4	93.4
85°	60.7	59.3	57.8	53.3	51.9
87.5°	26.7	23.8	20.8	16.3	14.8
90°	1.6	19.0	51.8	48.6	50.2
92.5°	32.8	44.4	46.0	47.6	47.6
95°	77.2	92.0	94.7	94.7	92.0
97.5°	128.5	142.2	148.1	148.1	148.1
100°	187.7	199.9	204.1	204.1	202.5
102.5°	250.1	259.0	264.9	266.5	264.9
105°	318.3	322.5	325.7	328.4	328.4
107.5°	386.0	392.3	392.3	393.4	386.0
110°	451.5	460.0	460.0	460.0	455.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	522.4	531.4	529.8	525.5	522.4
115°	592.2	600.6	598.0	596.4	592.2
117.5°	661.4	673.0	665.7	661.4	657.2
120°	731.2	742.8	731.2	731.2	726.4
122.5°	794.6	809.5	802.1	797.8	794.6
125°	861.3	874.5	870.3	865.5	864.0
127.5°	926.3	942.7	936.9	930.6	926.3
130°	987.1	1006.1	1003.5	1000.4	994.5
132.5°	1055.3	1070.2	1071.2	1063.8	1059.5
135°	1114.0	1130.4	1133.6	1131.9	1127.7
137.5°	1179.6	1192.8	1195.4	1194.4	1188.0
140°	1237.2	1250.5	1257.8	1257.8	1252.0
142.5°	1296.4	1309.6	1313.8	1315.4	1309.6
145°	1352.5	1363.0	1371.5	1373.1	1367.3
147.5°	1402.7	1415.9	1422.3	1424.9	1419.1
150°	1454.5	1463.5	1469.3	1474.1	1469.3
152.5°	1500.5	1509.5	1516.9	1522.7	1516.9
155°	1546.5	1550.7	1555.5	1562.9	1558.1
157.5°	1586.2	1589.4	1592.0	1602.6	1595.1
160°	1621.6	1624.8	1626.3	1635.3	1629.0
162.5°	1654.4	1654.4	1656.0	1666.0	1658.6
165°	1682.4	1680.8	1680.8	1691.4	1683.9
167.5°	1707.8	1703.0	1703.0	1713.6	1706.2
170°	1726.8	1722.6	1721.0	1731.5	1722.6
172.5°	1740.0	1735.7	1734.2	1744.8	1735.7
175°	1750.6	1746.4	1743.2	1753.7	1744.8
177.5°	1756.4	1752.1	1749.0	1758.0	1749.0
180°	1753.7	1753.7	1753.7	1753.7	1753.7

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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	7.43	8.25	8.44	9.26	10.61	7.00	7.82	8.01	8.83	10.18
	3H	9.09	9.82	10.10	10.84	12.21	8.62	9.35	9.63	10.37	11.74
	4H	9.68	10.37	10.70	11.39	12.77	9.20	9.89	10.23	10.92	12.30
	6H	10.07	10.71	11.11	11.74	13.13	9.60	10.24	10.63	11.26	12.65
	8H	10.18	10.78	11.22	11.83	13.21	9.70	10.31	10.74	11.35	12.74
	12H	10.22	10.80	11.27	11.84	13.25	9.74	10.32	10.79	11.36	12.77
4H	2H	7.89	8.58	8.92	9.61	10.98	7.55	8.24	8.58	9.26	10.64
	3H	9.75	10.33	10.79	11.38	12.77	9.36	9.94	10.40	10.99	12.38
	4H	10.46	10.99	11.51	12.04	13.45	10.06	10.59	11.11	11.63	13.04
	6H	10.98	11.43	12.03	12.50	13.91	10.57	11.02	11.62	12.09	13.50
	8H	11.12	11.55	12.18	12.61	14.03	10.71	11.14	11.77	12.20	13.62
	12H	11.20	11.58	12.27	12.65	14.08	10.77	11.16	11.85	12.23	13.66
8H	4H	10.66	11.08	11.72	12.14	13.57	10.30	10.72	11.35	11.78	13.20
	6H	11.29	11.64	12.37	12.74	14.16	10.92	11.27	12.01	12.38	13.80
	8H	11.51	11.81	12.60	12.90	14.34	11.14	11.45	12.23	12.53	13.97
	12H	11.64	11.91	12.73	12.99	14.47	11.25	11.52	12.34	12.60	14.08
12H	4H	10.64	11.02	11.72	12.10	13.53	10.29	10.67	11.36	11.75	13.18
	6H	11.32	11.62	12.40	12.71	14.15	10.96	11.27	12.05	12.36	13.80
	8H	11.56	11.83	12.65	12.91	14.39	11.20	11.47	12.29	12.55	14.03