

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: P904582

Luminaire Tested: DFN2DIP-TR4F0-050D050US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904582
REPORT IS A COMBINATION OF REPORTS P900389 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D050US830-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

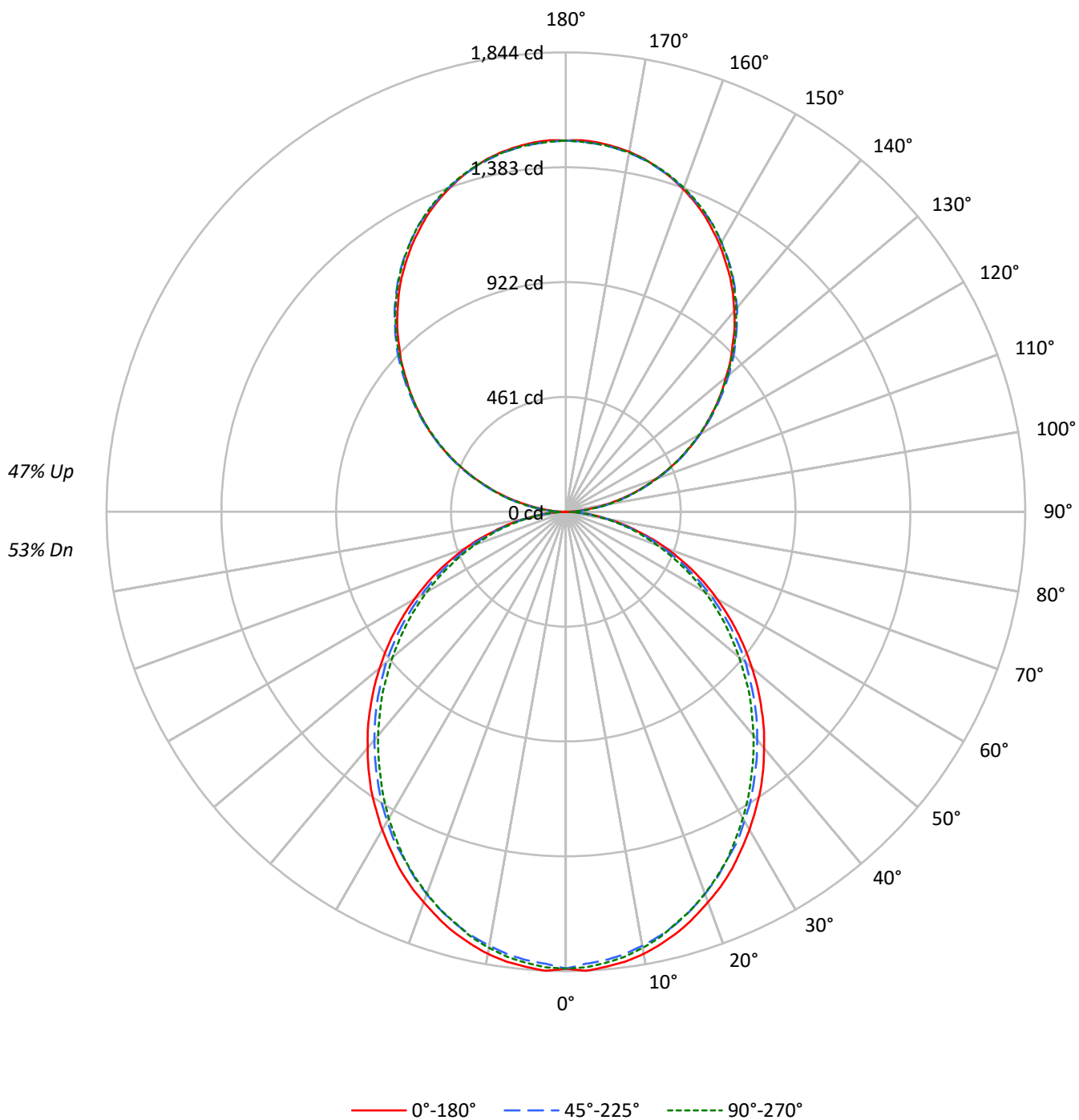
Lumens per Lamp: N/A
Luminaire Lumens: 8836.3 lumens
Efficiency: N/A
Efficacy: 110.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 79.8
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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1457	1457	1457
5°	1459	1436	1446
10°	1447	1417	1426
15°	1426	1394	1396
20°	1397	1361	1365
25°	1369	1323	1328
30°	1333	1286	1282
35°	1299	1244	1233
40°	1257	1201	1187
45°	1215	1158	1140
50°	1170	1113	1084
55°	1122	1060	1034
60°	1068	998	976
65°	1009	934	908
70°	935	856	834
75°	830	762	766
80°	706	642	637
85°	511	435	422

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1215 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.6	2.0
10°-20°	485.6	5.5
20°-30°	713.7	8.1
30°-40°	828.9	9.4
40°-50°	827.8	9.4
50°-60°	721.8	8.2
60°-70°	533.6	6.0
70°-80°	301.9	3.4
80°-90°	83.9	0.9
90°-100°	92.2	1.0
100°-110°	293.0	3.3
110°-120°	501.5	5.7
120°-130°	659.5	7.5
130°-140°	740.3	8.4
140°-150°	725.9	8.2
150°-160°	609.0	6.9
160°-170°	403.9	4.6
170°-180°	141.2	1.6
0°-30°	1371.9	15.5
0°-40°	2200.7	24.9
0°-60°	3750.4	42.4
0°-90°	4669.8	52.8
90°-120°	886.7	10.0
90°-150°	3012.5	34.1
90°-180°	4167.0	47.2
0°-180°	8836.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1834	1834	1834	1834	1834	
5°	1834	1827	1807	1821	1818	174
15°	1746	1735	1712	1719	1710	492
25°	1580	1566	1536	1539	1536	727
35°	1363	1346	1317	1307	1298	851
45°	1109	1097	1070	1051	1044	856
55°	839	829	808	786	778	750
65°	566	555	538	522	513	560
75°	296	293	284	273	277	316
85°	72	70	69	63	62	81
90°	1	16	44	41	43	9
95°	66	78	80	80	78	73
105°	270	274	277	279	279	285
115°	503	510	508	507	503	498
125°	732	743	740	736	734	654
135°	947	961	963	962	958	732
145°	1149	1158	1166	1167	1162	718
155°	1314	1318	1322	1328	1324	605
165°	1430	1428	1428	1438	1431	403
175°	1488	1484	1482	1490	1483	141
180°	1490	1490	1490	1490	1490	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1833.7	1833.7	1833.7	1833.7	1833.7
2.5°	1844.4	1835.6	1816.2	1833.7	1830.4
5°	1833.7	1826.8	1807.3	1821.4	1818.1
7.5°	1821.4	1810.9	1791.5	1805.7	1802.1
10°	1802.1	1789.8	1768.7	1782.6	1777.4
12.5°	1775.6	1765.1	1744.0	1752.8	1749.2
15°	1745.6	1735.1	1712.1	1719.3	1710.4
17.5°	1708.5	1698.1	1675.1	1683.9	1675.1
20°	1668.0	1657.6	1632.9	1638.0	1631.2
22.5°	1627.6	1611.7	1588.7	1588.7	1585.1
25°	1579.9	1565.8	1535.9	1539.3	1535.9
27.5°	1526.9	1514.6	1491.8	1486.5	1477.7
30°	1474.1	1460.0	1433.6	1428.3	1421.3
32.5°	1417.7	1407.2	1378.9	1368.3	1361.2
35°	1363.0	1345.5	1317.2	1306.6	1297.8
37.5°	1301.3	1285.4	1257.2	1244.8	1236.0
40°	1237.9	1223.7	1195.4	1179.7	1172.6
42.5°	1176.2	1162.0	1133.9	1116.1	1105.6
45°	1109.2	1096.8	1070.3	1051.0	1043.9
47.5°	1043.9	1031.5	1003.3	983.8	973.4
50°	975.1	966.3	941.6	916.9	908.0
52.5°	908.0	895.7	872.9	853.5	841.1
55°	839.4	828.8	807.6	786.5	777.7
57.5°	770.5	761.8	738.8	717.7	710.5
60°	701.7	694.8	670.1	650.6	645.5
62.5°	634.8	622.5	604.8	587.2	580.1
65°	566.1	555.4	537.8	522.0	513.1
67.5°	495.6	486.6	470.9	458.5	451.4
70°	430.3	423.2	407.3	394.9	388.0
72.5°	363.4	356.2	347.4	335.1	329.8
75°	296.1	292.8	283.8	273.3	276.9
77.5°	236.3	229.1	225.6	220.4	215.2
80°	176.4	174.6	171.0	165.8	162.2
82.5°	119.9	119.9	118.2	111.1	111.1
85°	72.2	70.5	68.8	63.4	61.7
87.5°	31.8	28.3	24.7	19.4	17.6
90°	1.3	16.2	44.0	41.4	42.7
92.5°	27.9	37.7	39.1	40.4	40.4
95°	65.6	78.2	80.4	80.4	78.2
97.5°	109.1	120.8	125.8	125.8	125.8
100°	159.5	169.8	173.4	173.4	172.1
102.5°	212.5	220.2	225.1	226.5	225.1
105°	270.5	274.1	276.8	279.0	279.0
107.5°	328.0	333.4	333.4	334.3	328.0
110°	383.7	391.0	391.0	391.0	387.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	443.9	451.6	450.3	446.7	443.9
115°	503.2	510.5	508.2	506.9	503.2
117.5°	562.1	572.0	565.7	562.1	558.6
120°	621.4	631.3	621.4	621.4	617.4
122.5°	675.3	688.0	681.6	678.1	675.3
125°	732.0	743.2	739.6	735.6	734.2
127.5°	787.2	801.2	796.3	790.8	787.2
130°	839.0	855.1	852.8	850.2	845.2
132.5°	896.9	909.5	910.4	904.1	900.5
135°	946.8	960.6	963.4	962.1	958.5
137.5°	1002.5	1013.7	1016.0	1015.0	1009.7
140°	1051.4	1062.7	1068.9	1068.9	1064.0
142.5°	1101.7	1113.0	1116.6	1117.9	1113.0
145°	1149.4	1158.4	1165.5	1167.0	1162.0
147.5°	1192.1	1203.3	1208.7	1211.0	1206.0
150°	1236.1	1243.8	1248.7	1252.7	1248.7
152.5°	1275.3	1282.9	1289.1	1294.1	1289.1
155°	1314.3	1317.9	1321.9	1328.2	1324.2
157.5°	1348.0	1350.7	1352.9	1362.0	1355.7
160°	1378.1	1380.8	1382.1	1389.8	1384.4
162.5°	1406.0	1406.0	1407.3	1415.9	1409.6
165°	1429.8	1428.4	1428.4	1437.5	1431.2
167.5°	1451.3	1447.3	1447.3	1456.3	1450.0
170°	1467.5	1464.0	1462.6	1471.6	1464.0
172.5°	1478.8	1475.2	1473.9	1482.8	1475.2
175°	1487.8	1484.1	1481.5	1490.4	1482.8
177.5°	1492.7	1489.1	1486.4	1494.0	1486.4
180°	1490.4	1490.4	1490.4	1490.4	1490.4

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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	8.83	9.72	9.76	10.67	11.90	8.40	9.29	9.33	10.24	11.47
	3H	10.49	11.29	11.44	12.25	13.50	10.02	10.82	10.97	11.78	13.03
	4H	11.08	11.84	12.04	12.80	14.06	10.61	11.36	11.57	12.33	13.59
	6H	11.48	12.18	12.45	13.15	14.42	11.01	11.70	11.98	12.67	13.95
	8H	11.59	12.25	12.57	13.24	14.51	11.11	11.78	12.09	12.76	14.03
	12H	11.64	12.27	12.62	13.25	14.54	11.16	11.79	12.14	12.77	14.06
4H	2H	9.30	10.05	10.26	11.01	12.28	8.95	9.71	9.92	10.67	11.93
	3H	11.17	11.79	12.14	12.79	14.06	10.77	11.40	11.75	12.39	13.67
	4H	11.88	12.46	12.86	13.44	14.74	11.48	12.05	12.46	13.04	14.34
	6H	12.40	12.89	13.39	13.90	15.20	11.99	12.48	12.98	13.49	14.79
	8H	12.55	13.01	13.54	14.01	15.33	12.14	12.60	13.13	13.60	14.91
	12H	12.62	13.04	13.64	14.06	15.38	12.20	12.62	13.22	13.64	14.96
8H	4H	12.08	12.54	13.08	13.55	14.86	11.72	12.18	12.72	13.19	14.50
	6H	12.71	13.09	13.73	14.14	15.45	12.35	12.73	13.37	13.78	15.09
	8H	12.93	13.27	13.96	14.30	15.63	12.56	12.90	13.59	13.93	15.26
	12H	13.07	13.36	14.10	14.39	15.76	12.68	12.98	13.71	14.00	15.38
12H	4H	12.07	12.48	13.08	13.50	14.82	11.71	12.13	12.73	13.15	14.47
	6H	12.74	13.08	13.77	14.11	15.44	12.39	12.73	13.42	13.76	15.09
	8H	12.99	13.28	14.02	14.31	15.68	12.63	12.93	13.66	13.95	15.33