

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: P904332

Luminaire Tested: DFN2DIP-TR2F0-050D050US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904332
REPORT IS A COMBINATION OF REPORTS P900257 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-050D050US830-FLLFLL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

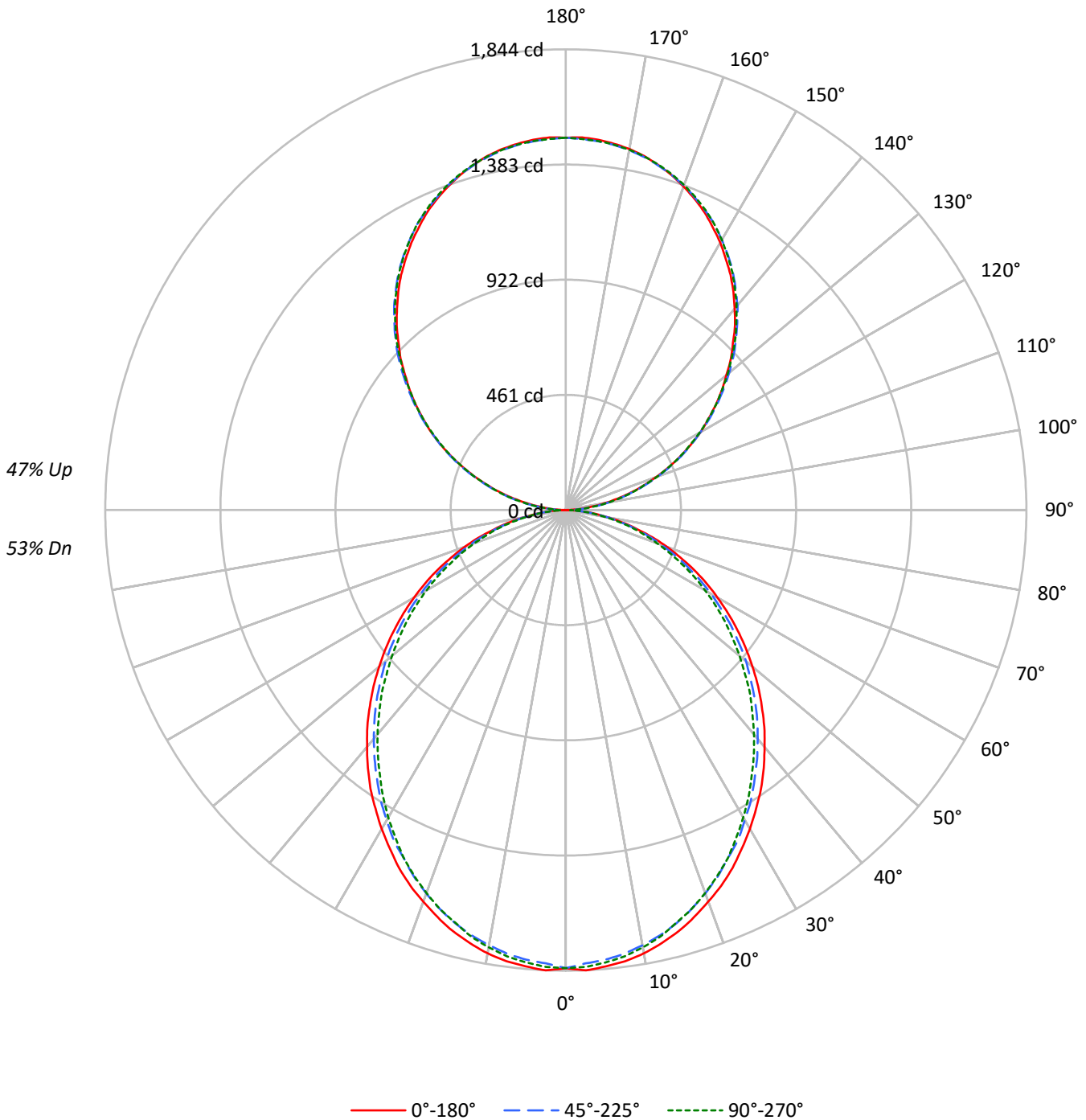
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8836.3 lumens
Efficiency: N/A
Efficacy: 102.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 86
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: P904332
CATALOG NUMBER: DFN2DIP-TR2F0-050D050US830-FLLFLL

Luminous Intensity Polar Plot





TEST NUMBER: P904332

CATALOG NUMBER: DFN2DIP-TR2F0-050D050US830-FLLFLL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	59	59	59	53
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50	52	51	50	45
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42	46	44	42	37
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36	41	38	36	32
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31	36	33	31	27
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27	33	29	27	24
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24	30	26	24	21
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21	27	24	21	18
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19	25	21	19	16
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17	23	20	17	15
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15	21	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4090	4090	4090
5°	4090	4024	4053
10°	4051	3961	3991
15°	3986	3886	3898
20°	3899	3787	3804
25°	3813	3669	3696
30°	3706	3560	3560
35°	3604	3431	3417
40°	3481	3302	3280
45°	3357	3171	3139
50°	3221	3034	2977
55°	3078	2875	2827
60°	2916	2689	2655
65°	2739	2493	2451
70°	2514	2256	2230
75°	2203	1971	2018
80°	1827	1608	1631
85°	1245	1013	1013

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3357 cd/sqm



TEST NUMBER: P904332

CATALOG NUMBER: DFN2DIP-TR2F0-050D050US830-FLLFLL

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	



TEST NUMBER: P904332

CATALOG NUMBER: DFN2DIP-TR2FO-050D050US830-FLLFL

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



TEST NUMBER: P904332

CATALOG NUMBER: DFN2DIP-TR2F0-050D050US830-FLLFLL

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



TEST NUMBER: P904332
 CATALOG NUMBER: DFN2DIP-TR2F0-050D050US830-FLLFLL

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	12.30	13.18	13.23	14.13	15.36	11.87	12.76	12.80	13.71	14.94
	3H	13.93	14.73	14.88	15.69	16.94	13.47	14.27	14.42	15.23	16.48
	4H	14.51	15.26	15.47	16.22	17.49	14.05	14.80	15.01	15.76	17.03
	6H	14.89	15.58	15.86	16.55	17.83	14.43	15.12	15.40	16.09	17.37
	8H	14.99	15.65	15.96	16.63	17.91	14.53	15.19	15.50	16.18	17.45
	12H	15.03	15.66	16.01	16.64	17.93	14.56	15.19	15.55	16.17	17.47
4H	2H	12.75	13.50	13.71	14.47	15.73	12.41	13.17	13.38	14.13	15.39
	3H	14.59	15.22	15.57	16.21	17.49	14.21	14.84	15.18	15.83	17.11
	4H	15.29	15.86	16.27	16.85	18.15	14.89	15.47	15.88	16.46	17.76
	6H	15.78	16.28	16.78	17.29	18.59	15.39	15.88	16.38	16.89	18.19
	8H	15.92	16.38	16.92	17.39	18.70	15.52	15.99	16.52	16.99	18.30
	12H	15.99	16.40	17.00	17.42	18.74	15.58	16.00	16.59	17.02	18.34
8H	4H	15.48	15.94	16.47	16.94	18.26	15.13	15.59	16.12	16.59	17.90
	6H	16.08	16.46	17.10	17.51	18.82	15.73	16.11	16.75	17.16	18.47
	8H	16.29	16.62	17.32	17.66	18.99	15.93	16.27	16.96	17.30	18.63
	12H	16.40	16.70	17.44	17.73	19.10	16.03	16.33	17.07	17.36	18.73
12H	4H	15.46	15.88	16.48	16.90	18.22	15.12	15.54	16.13	16.55	17.87
	6H	16.11	16.45	17.14	17.48	18.81	15.77	16.10	16.79	17.14	18.47
	8H	16.33	16.63	17.37	17.66	19.03	15.99	16.28	17.02	17.31	18.68