

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: P904353

Luminaire Tested: DFN2DIP-TR2F0-060D050US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904353
REPORT IS A COMBINATION OF REPORTS P901779 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-060D050US830-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

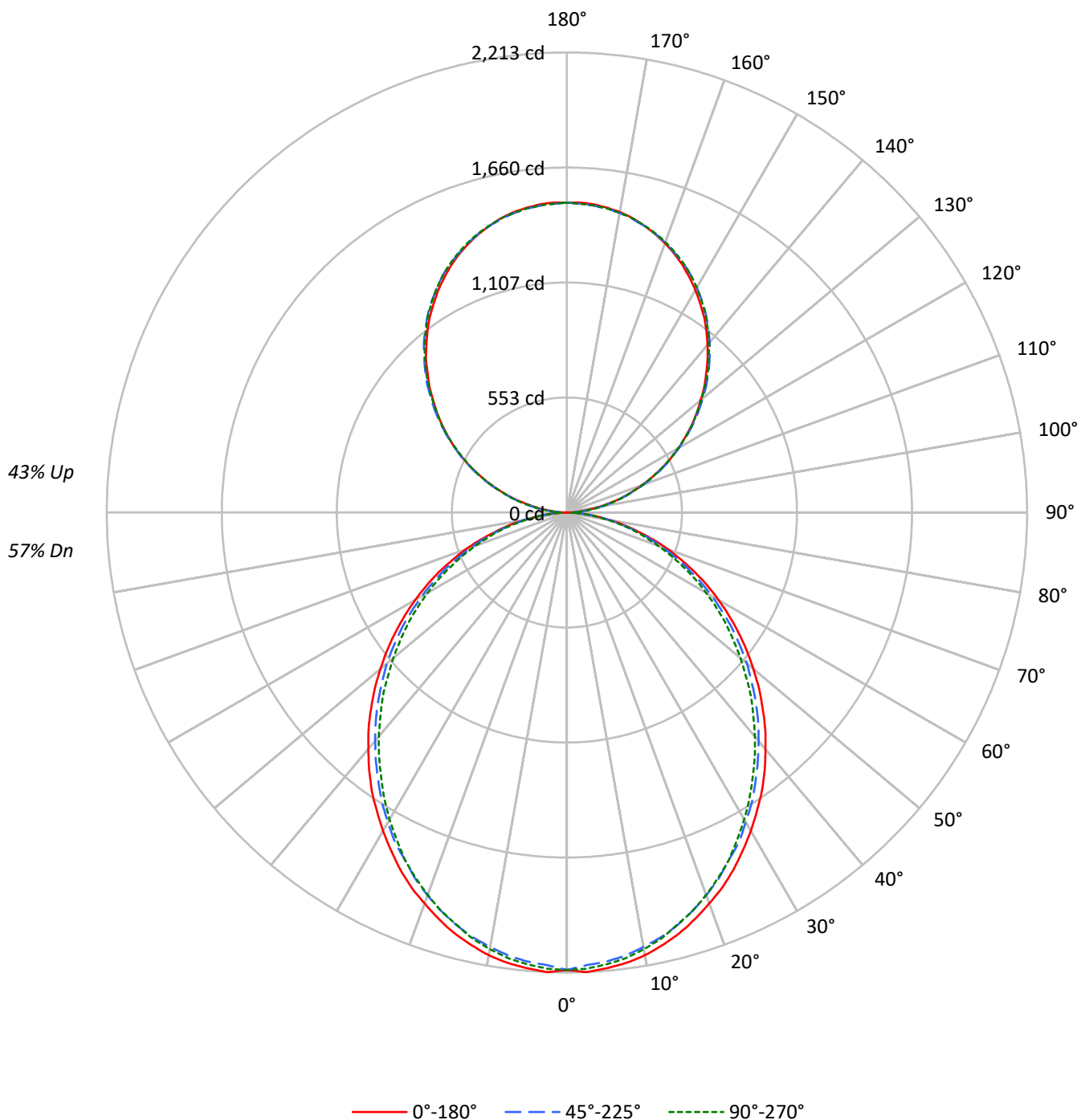
Lumens per Lamp: N/A
Luminaire Lumens: 9769.4 lumens
Efficiency: N/A
Efficacy: 99.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 97.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P904353

CATALOG NUMBER: DFN2DIP-TR2F0-060D050US830-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P904353

CATALOG NUMBER: DFN2DIP-TR2F0-060D050US830-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	109	109	109	109	101	101	101	101	87	87	87	75	75	75	63	63	63
1	99	95	91	88	92	89	85	82	77	74	72	66	64	62	56	54	53
2	91	83	77	72	84	78	72	67	67	63	60	58	55	52	49	47	45
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	43	41	38
4	76	65	57	51	70	61	53	48	53	47	43	46	41	38	39	36	33
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	31	29
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25
7	59	47	39	33	55	44	37	32	39	33	28	34	29	25	29	25	22
8	55	43	35	29	51	40	33	28	35	29	25	31	26	23	27	23	20
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18
10	48	36	28	24	45	34	27	23	30	24	21	26	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4908	4908	4908
5°	4909	4829	4864
10°	4862	4753	4789
15°	4783	4664	4678
20°	4679	4544	4565
25°	4575	4403	4434
30°	4448	4271	4272
35°	4325	4118	4100
40°	4176	3962	3935
45°	4028	3805	3767
50°	3865	3641	3573
55°	3694	3450	3392
60°	3500	3227	3185
65°	3287	2993	2941
70°	3016	2707	2677
75°	2644	2365	2421
80°	2192	1929	1957
85°	1493	1216	1216

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4028 cd/sqm

TEST NUMBER: P904353

CATALOG NUMBER: DFN2DIP-TR2F0-060D050US830-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.1	2.1
10°-20°	582.7	6.0
20°-30°	856.4	8.8
30°-40°	994.6	10.2
40°-50°	993.4	10.2
50°-60°	866.2	8.9
60°-70°	640.3	6.6
70°-80°	362.3	3.7
80°-90°	99.9	1.0
90°-100°	92.2	0.9
100°-110°	293.0	3.0
110°-120°	501.5	5.1
120°-130°	659.5	6.8
130°-140°	740.3	7.6
140°-150°	725.9	7.4
150°-160°	609.0	6.2
160°-170°	403.9	4.1
170°-180°	141.2	1.4
0°-30°	1646.2	16.9
0°-40°	2640.9	27.0
0°-60°	4500.5	46.1
0°-90°	5602.9	57.4
90°-120°	886.7	9.1
90°-150°	3012.5	30.8
90°-180°	4167.0	42.7
0°-180°	9769.4	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	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: P904353

CATALOG NUMBER: DFN2DIP-TR2F0-060D050US830-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°	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: P904353

CATALOG NUMBER: DFN2DIP-TR2F0-060D050US830-FLLONL

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: P904353

CATALOG NUMBER: DFN2DIP-TR2F0-060D050US830-FLLONL

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	13.32	14.25	14.21	15.17	16.33	12.90	13.83	13.79	14.74	15.90
	3H	14.96	15.80	15.87	16.72	17.91	14.50	15.34	15.41	16.26	17.45
	4H	15.54	16.33	16.46	17.26	18.45	15.08	15.87	16.00	16.80	17.99
	6H	15.92	16.65	16.85	17.59	18.80	15.46	16.19	16.39	17.13	18.34
	8H	16.02	16.72	16.96	17.67	18.87	15.56	16.26	16.50	17.21	18.42
	12H	16.06	16.72	17.01	17.67	18.90	15.60	16.26	16.54	17.21	18.44
4H	2H	13.78	14.57	14.71	15.50	16.70	13.44	14.23	14.37	15.16	16.36
	3H	15.63	16.29	16.56	17.24	18.46	15.24	15.90	16.18	16.86	18.07
	4H	16.33	16.93	17.27	17.88	19.12	15.93	16.53	16.88	17.49	18.72
	6H	16.82	17.34	17.78	18.32	19.55	16.43	16.95	17.39	17.92	19.16
	8H	16.96	17.45	17.92	18.42	19.67	16.57	17.05	17.53	18.02	19.27
	12H	17.03	17.47	18.01	18.45	19.71	16.62	17.06	17.60	18.05	19.30
8H	4H	16.52	17.00	17.48	17.97	19.22	16.17	16.65	17.13	17.62	18.87
	6H	17.12	17.53	18.11	18.54	19.79	16.77	17.17	17.76	18.19	19.43
	8H	17.33	17.69	18.32	18.68	19.95	16.97	17.33	17.97	18.33	19.60
	12H	17.45	17.76	18.45	18.76	20.07	17.08	17.39	18.08	18.39	19.70
12H	4H	16.50	16.94	17.48	17.93	19.19	16.16	16.60	17.14	17.59	18.84
	6H	17.15	17.51	18.14	18.51	19.77	16.81	17.16	17.80	18.16	19.43
	8H	17.38	17.69	18.38	18.68	20.00	17.03	17.35	18.03	18.34	19.65