

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: P923520

Luminaire Tested: DFN2DIP-TR3F0-050D060US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923520
REPORT IS A COMBINATION OF REPORTS P900317 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-050D060US940-FLLFLL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

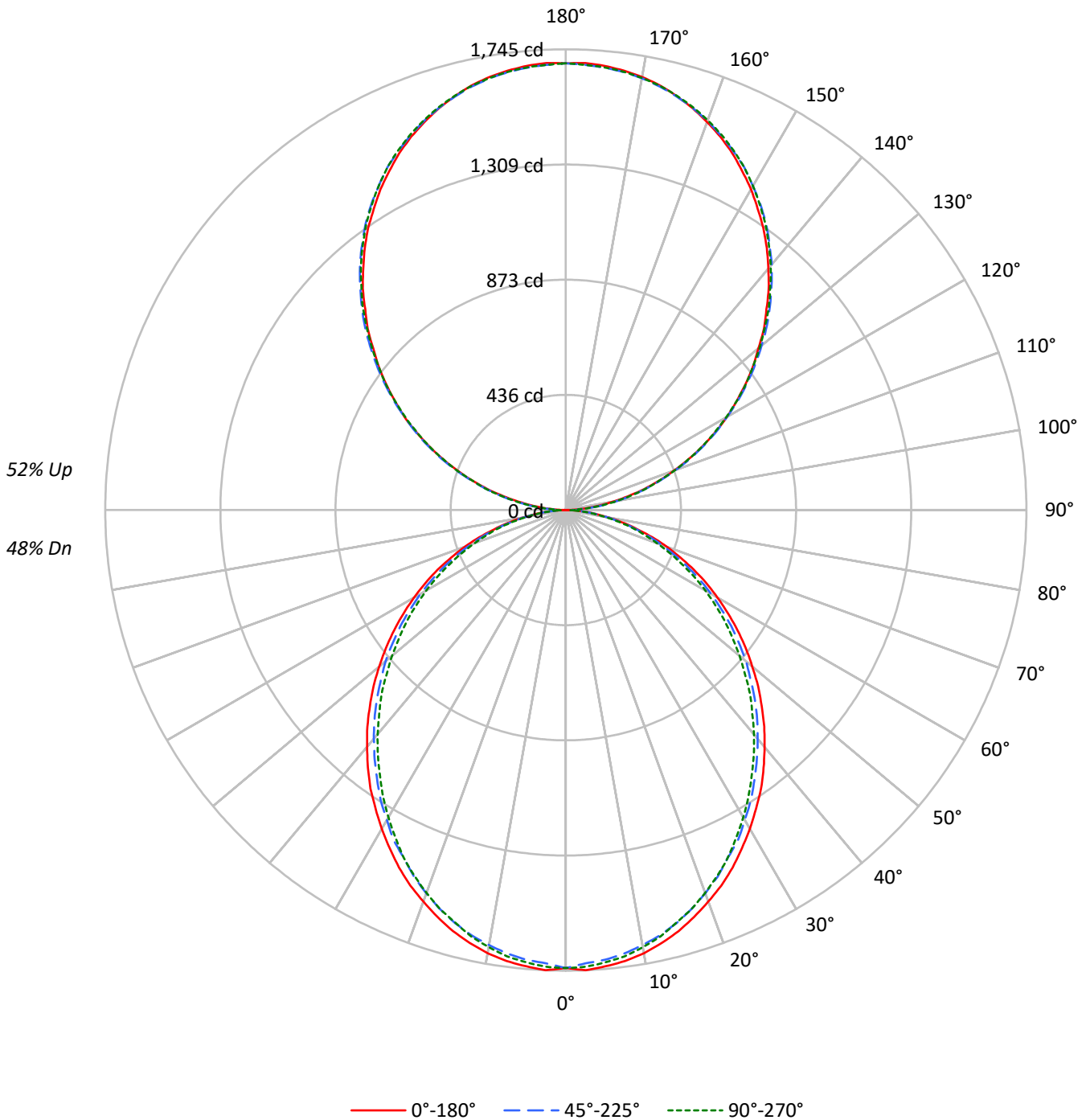
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9149.0 lumens
Efficiency: N/A
Efficacy: 101.1 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: General Diffuse

Input Watts (W): 90.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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CATALOG NUMBER: DFN2DIP-TR3F0-050D060US940-FLLFLL

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			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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55	48	48	48	48
1	97	93	89	86	89	86	82	79	72	70	68	60	58	57	48	47	46	41	41	41	41
2	89	81	75	70	81	75	70	65	63	59	56	52	50	47	42	41	39	34	34	34	34
3	81	71	64	58	74	66	60	54	56	51	47	46	43	40	38	35	33	29	29	29	29
4	74	63	55	49	68	59	52	46	50	44	40	41	37	34	34	31	28	25	25	25	25
5	68	56	48	42	62	52	45	40	44	39	35	37	33	30	30	27	25	22	22	22	22
6	63	51	42	37	57	47	40	34	40	34	30	34	29	26	27	24	22	19	19	19	19
7	58	46	38	32	53	42	35	30	36	31	27	30	26	23	25	22	19	17	17	17	17
8	54	41	34	28	49	39	32	27	33	28	24	28	24	20	23	20	17	15	15	15	15
9	50	38	30	25	46	35	28	24	30	25	21	26	21	18	21	18	16	14	14	14	14
10	47	35	27	23	43	32	26	21	28	23	19	24	20	17	20	17	14	12	12	12	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2162	2162	2162
5°	2164	2130	2145
10°	2145	2099	2114
15°	2112	2063	2067
20°	2069	2013	2020
25°	2025	1954	1964
30°	1971	1899	1895
35°	1919	1834	1821
40°	1856	1768	1751
45°	1793	1702	1679
50°	1723	1633	1596
55°	1651	1553	1519
60°	1569	1458	1431
65°	1479	1360	1327
70°	1365	1240	1215
75°	1206	1095	1110
80°	1015	912	912
85°	717	600	589

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1793 cd/sqm



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CATALOG NUMBER: DFN2DIP-TR3F0-050D060US940-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.3	1.8
10°-20°	459.4	5.0
20°-30°	675.2	7.4
30°-40°	784.2	8.6
40°-50°	783.2	8.6
50°-60°	682.9	7.5
60°-70°	504.8	5.5
70°-80°	285.6	3.1
80°-90°	80.2	0.9
90°-100°	104.7	1.1
100°-110°	332.7	3.6
110°-120°	569.3	6.2
120°-130°	748.8	8.2
130°-140°	840.5	9.2
140°-150°	824.2	9.0
150°-160°	691.4	7.6
160°-170°	458.5	5.0
170°-180°	160.3	1.8
0°-30°	1297.9	14.2
0°-40°	2082.0	22.8
0°-60°	3548.1	38.8
0°-90°	4418.8	48.3
90°-120°	1006.7	11.0
90°-150°	3420.1	37.4
90°-180°	4730.0	51.7
0°-180°	9149.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1735	1735	1735	1735	1735	
5°	1735	1728	1710	1723	1720	165
15°	1651	1642	1620	1627	1618	465
25°	1495	1481	1453	1456	1453	688
35°	1290	1273	1246	1236	1228	805
45°	1049	1038	1012	994	988	810
55°	794	784	764	744	736	710
65°	536	526	509	494	485	530
75°	280	277	268	259	262	299
85°	68	67	65	60	58	76
90°	2	18	50	47	48	9
95°	74	89	91	91	89	83
105°	307	311	314	317	317	324
115°	571	580	577	575	571	565
125°	831	844	840	835	834	743
135°	1075	1091	1094	1092	1088	831
145°	1305	1315	1323	1325	1319	815
155°	1492	1496	1501	1508	1503	687
165°	1623	1622	1622	1632	1625	458
175°	1689	1685	1682	1692	1683	160
180°	1692	1692	1692	1692	1692	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1734.8	1734.8	1734.8	1734.8	1734.8
2.5°	1744.9	1736.6	1718.2	1734.8	1731.7
5°	1734.8	1728.3	1709.9	1723.1	1720.0
7.5°	1723.1	1713.2	1694.9	1708.3	1705.0
10°	1705.0	1693.3	1673.3	1686.5	1681.6
12.5°	1679.8	1669.9	1649.9	1658.2	1654.8
15°	1651.4	1641.5	1619.8	1626.6	1618.2
17.5°	1616.4	1606.5	1584.7	1593.0	1584.7
20°	1578.1	1568.2	1544.8	1549.7	1543.2
22.5°	1539.8	1524.7	1503.0	1503.0	1499.6
25°	1494.7	1481.4	1453.0	1456.3	1453.0
27.5°	1444.6	1432.9	1411.3	1406.3	1398.0
30°	1394.6	1381.3	1356.3	1351.3	1344.6
32.5°	1341.2	1331.3	1304.6	1294.5	1287.8
35°	1289.5	1272.9	1246.2	1236.1	1227.8
37.5°	1231.1	1216.1	1189.4	1177.7	1169.4
40°	1171.2	1157.7	1131.0	1116.1	1109.4
42.5°	1112.8	1099.3	1072.7	1055.9	1046.0
45°	1049.4	1037.7	1012.5	994.3	987.6
47.5°	987.6	975.9	949.2	930.8	920.9
50°	922.5	914.2	890.8	867.5	859.1
52.5°	859.1	847.4	825.8	807.4	795.8
55°	794.2	784.1	764.0	744.0	735.8
57.5°	729.0	720.7	698.9	678.9	672.2
60°	663.9	657.4	634.0	615.5	610.6
62.5°	600.6	588.9	572.2	555.5	548.8
65°	535.6	525.5	508.8	493.8	485.4
67.5°	468.9	460.4	445.5	433.8	427.0
70°	407.1	400.4	385.3	373.6	367.1
72.5°	343.8	337.0	328.7	317.0	312.0
75°	280.2	277.0	268.5	258.6	262.0
77.5°	223.6	216.8	213.5	208.5	203.6
80°	166.9	165.1	161.8	156.9	153.5
82.5°	113.4	113.4	111.8	105.1	105.1
85°	68.3	66.7	65.1	60.0	58.4
87.5°	30.1	26.8	23.4	18.4	16.7
90°	1.5	18.4	50.0	46.9	48.4
92.5°	31.7	42.9	44.4	45.9	45.9
95°	74.5	88.7	91.3	91.3	88.7
97.5°	123.9	137.2	142.9	142.9	142.9
100°	181.1	192.8	196.9	196.9	195.4
102.5°	241.3	249.9	255.6	257.1	255.6
105°	307.1	311.2	314.2	316.8	316.8
107.5°	372.4	378.5	378.5	379.5	372.4
110°	435.7	443.8	443.8	443.8	439.7



TEST NUMBER: P923520

CATALOG NUMBER: DFN2DIP-TR3F0-050D060US940-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	504.0	512.6	511.1	507.0	504.0
115°	571.3	579.5	576.9	575.4	571.3
117.5°	638.2	649.4	642.2	638.2	634.1
120°	705.5	716.8	705.5	705.5	700.9
122.5°	766.7	781.0	773.8	769.8	766.7
125°	831.0	843.7	839.6	835.1	833.6
127.5°	893.8	909.5	903.9	897.9	893.8
130°	952.4	970.8	968.2	965.2	959.6
132.5°	1018.2	1032.5	1033.5	1026.4	1022.3
135°	1074.9	1090.7	1093.7	1092.2	1088.1
137.5°	1138.1	1150.8	1153.4	1152.4	1146.3
140°	1193.7	1206.5	1213.6	1213.6	1208.0
142.5°	1250.8	1263.6	1267.7	1269.2	1263.6
145°	1304.9	1315.1	1323.3	1324.8	1319.2
147.5°	1353.3	1366.1	1372.3	1374.7	1369.1
150°	1403.4	1412.0	1417.6	1422.2	1417.6
152.5°	1447.7	1456.4	1463.6	1469.2	1463.6
155°	1492.1	1496.2	1500.7	1508.0	1503.3
157.5°	1530.4	1533.5	1536.0	1546.2	1539.1
160°	1564.6	1567.6	1569.1	1577.8	1571.7
162.5°	1596.2	1596.2	1597.7	1607.4	1600.3
165°	1623.2	1621.7	1621.7	1631.9	1624.8
167.5°	1647.7	1643.2	1643.2	1653.3	1646.2
170°	1666.1	1662.0	1660.5	1670.6	1662.0
172.5°	1678.8	1674.7	1673.2	1683.4	1674.7
175°	1689.0	1685.0	1681.9	1692.1	1683.4
177.5°	1694.6	1690.6	1687.5	1696.1	1687.5
180°	1692.1	1692.1	1692.1	1692.1	1692.1



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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	9.74	10.58	10.71	11.57	12.86	9.31	10.15	10.28	11.14	12.44
	3H	11.39	12.15	12.37	13.14	14.46	10.92	11.68	11.90	12.67	13.99
	4H	11.97	12.69	12.96	13.69	15.01	11.50	12.22	12.50	13.22	14.54
	6H	12.36	13.02	13.37	14.03	15.36	11.89	12.55	12.90	13.56	14.89
	8H	12.46	13.09	13.47	14.11	15.45	11.99	12.62	13.00	13.64	14.98
	12H	12.50	13.10	13.52	14.12	15.48	12.03	12.63	13.05	13.64	15.00
4H	2H	10.19	10.91	11.20	11.91	13.24	9.85	10.57	10.85	11.57	12.89
	3H	12.05	12.65	13.06	13.67	15.01	11.66	12.26	12.67	13.28	14.62
	4H	12.75	13.30	13.77	14.32	15.68	12.35	12.90	13.37	13.92	15.28
	6H	13.26	13.73	14.29	14.78	16.13	12.86	13.33	13.89	14.37	15.73
	8H	13.40	13.85	14.43	14.88	16.25	13.00	13.44	14.03	14.48	15.85
	12H	13.47	13.87	14.52	14.92	16.30	13.06	13.46	14.11	14.51	15.89
8H	4H	12.95	13.39	13.98	14.42	15.80	12.59	13.03	13.62	14.07	15.44
	6H	13.57	13.93	14.62	15.01	16.38	13.21	13.57	14.26	14.65	16.02
	8H	13.78	14.10	14.84	15.16	16.55	13.42	13.74	14.48	14.80	16.19
	12H	13.90	14.19	14.97	15.24	16.68	13.53	13.81	14.59	14.87	16.30
12H	4H	12.93	13.33	13.98	14.38	15.76	12.58	12.98	13.63	14.03	15.41
	6H	13.59	13.91	14.66	14.98	16.37	13.25	13.57	14.31	14.63	16.02
	8H	13.83	14.11	14.89	15.17	16.60	13.47	13.76	14.54	14.81	16.25