

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: P923372

Luminaire Tested: DFN2DIP-TR2F0-020D060US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923372
REPORT IS A COMBINATION OF REPORTS P900261 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-020D060US940-FLLFLL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

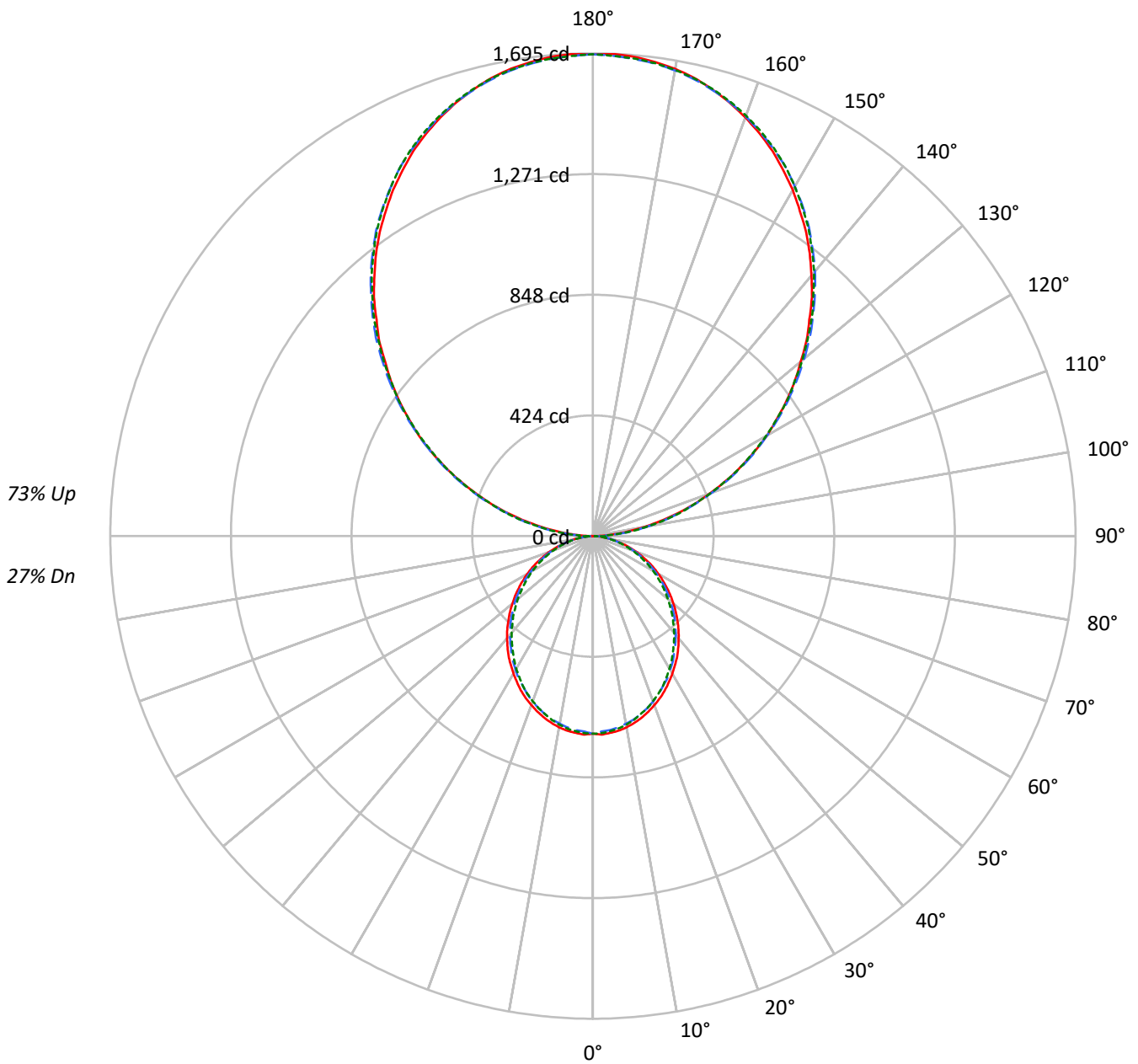
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6500.6 lumens
Efficiency: N/A
Efficacy: 102.2 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: Semi-Indirect

Input Watts (W): 63.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
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



— 0°-180° - - 45°-225° ···· 90°-270°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	102	102	102	102	91	91	91	91	71	71	71	52	52	52	35	35	35				27
1	93	88	85	81	83	79	76	73	62	60	58	46	44	43	31	30	30				23
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25				19
3	77	68	61	55	68	61	55	50	48	44	40	35	33	30	24	23	21				16
4	70	60	52	47	62	54	47	42	42	38	34	32	29	26	22	20	18				14
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16				12
6	59	48	40	34	53	43	36	31	34	29	25	25	22	20	18	16	14				11
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12				9
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11				8
9	47	35	28	23	42	32	26	21	25	21	17	19	16	14	14	11	10				8
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	10	9				7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1548	1548	1548
5°	1548	1523	1534
10°	1533	1499	1510
15°	1508	1471	1475
20°	1475	1433	1439
25°	1443	1389	1398
30°	1403	1347	1347
35°	1364	1299	1293
40°	1317	1250	1241
45°	1270	1200	1188
50°	1219	1148	1127
55°	1165	1088	1070
60°	1104	1018	1004
65°	1036	944	928
70°	951	854	844
75°	834	746	764
80°	692	608	616
85°	471	383	384

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2207 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.3	1.0
10°-20°	183.8	2.8
20°-30°	270.1	4.2
30°-40°	313.7	4.8
40°-50°	313.3	4.8
50°-60°	273.2	4.2
60°-70°	201.9	3.1
70°-80°	114.2	1.8
80°-90°	35.0	0.5
90°-100°	104.7	1.6
100°-110°	332.7	5.1
110°-120°	569.3	8.8
120°-130°	748.8	11.5
130°-140°	840.5	12.9
140°-150°	824.2	12.7
150°-160°	691.4	10.6
160°-170°	458.5	7.1
170°-180°	160.3	2.5
0°-30°	519.1	8.0
0°-40°	832.8	12.8
0°-60°	1419.3	21.8
0°-90°	1770.4	27.2
90°-120°	1006.7	15.5
90°-150°	3420.1	52.6
90°-180°	4730.0	72.8
0°-180°	6500.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	694	694	694	694	694	
5°	694	691	684	689	688	66
15°	661	657	648	651	647	186
25°	598	592	581	582	581	275
35°	516	509	498	494	491	322
45°	420	415	405	398	395	324
55°	318	314	306	298	294	284
65°	214	210	204	198	194	212
75°	112	111	107	103	105	120
85°	27	27	26	24	23	30
90°	2	18	50	47	48	6
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	



TEST NUMBER: P923372

CATALOG NUMBER: DFN2DIP-TR2FO-020D060US940-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	693.9	693.9	693.9	693.9	693.9
2.5°	697.9	694.6	687.2	693.9	692.7
5°	693.9	691.3	683.9	689.3	688.0
7.5°	689.3	685.3	678.0	683.3	682.0
10°	682.0	677.3	669.3	674.6	672.6
12.5°	671.9	668.0	660.0	663.3	661.9
15°	660.6	656.7	647.9	650.6	647.3
17.5°	646.6	642.7	633.9	637.2	633.9
20°	631.2	627.2	617.9	619.9	617.2
22.5°	615.9	609.9	601.2	601.2	599.9
25°	597.9	592.5	581.2	582.5	581.2
27.5°	577.8	573.2	564.5	562.6	559.2
30°	557.9	552.5	542.5	540.6	537.8
32.5°	536.5	532.5	521.8	517.8	515.1
35°	515.9	509.2	498.5	494.5	491.1
37.5°	492.5	486.4	475.7	471.1	467.7
40°	468.4	463.1	452.4	446.5	443.7
42.5°	445.1	439.7	429.1	422.4	418.4
45°	419.7	415.1	405.0	397.7	395.0
47.5°	395.0	390.4	379.7	372.3	368.4
50°	369.0	365.7	356.3	347.0	343.7
52.5°	343.7	338.9	330.3	323.0	318.3
55°	317.6	313.6	305.6	297.7	294.3
57.5°	291.6	288.3	279.6	271.6	268.9
60°	265.6	263.0	253.6	246.2	244.2
62.5°	240.2	235.5	228.9	222.2	219.5
65°	214.2	210.2	203.6	197.5	194.2
67.5°	187.5	184.1	178.2	173.5	170.9
70°	162.8	160.2	154.1	149.5	146.9
72.5°	137.5	134.8	131.4	126.8	124.8
75°	112.1	110.8	107.4	103.4	104.8
77.5°	89.4	86.8	85.3	83.4	81.4
80°	66.8	66.1	64.7	62.7	61.3
82.5°	45.4	45.4	44.8	42.1	42.1
85°	27.3	26.7	26.0	24.0	23.4
87.5°	12.0	10.7	9.4	7.4	6.7
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: P923372

CATALOG NUMBER: DFN2DIP-TR2FO-020D060US940-FLLFL

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	6.05	6.74	7.18	7.86	9.42	5.63	6.32	6.76	7.44	9.00
	3H	7.67	8.29	8.81	9.42	11.00	7.21	7.83	8.35	8.96	10.54
	4H	8.24	8.82	9.39	9.95	11.54	7.78	8.36	8.93	9.50	11.08
	6H	8.61	9.15	9.77	10.28	11.88	8.15	8.69	9.31	9.82	11.42
	8H	8.70	9.21	9.86	10.36	11.95	8.24	8.76	9.40	9.90	11.49
	12H	8.73	9.22	9.90	10.36	11.97	8.27	8.76	9.43	9.90	11.51
4H	2H	6.48	7.07	7.64	8.20	9.78	6.14	6.73	7.30	7.86	9.44
	3H	8.30	8.79	9.46	9.95	11.55	7.92	8.41	9.08	9.57	11.16
	4H	8.99	9.44	10.16	10.59	12.20	8.60	9.05	9.76	10.19	11.81
	6H	9.48	9.86	10.64	11.03	12.63	9.08	9.46	10.25	10.63	12.24
	8H	9.61	9.97	10.78	11.13	12.75	9.21	9.57	10.38	10.73	12.35
	12H	9.66	9.99	10.85	11.16	12.79	9.26	9.58	10.44	10.76	12.38
8H	4H	9.16	9.52	10.33	10.68	12.31	8.81	9.17	9.98	10.33	11.95
	6H	9.76	10.06	10.95	11.26	12.88	9.41	9.71	10.60	10.91	12.53
	8H	9.96	10.22	11.16	11.40	13.04	9.61	9.87	10.80	11.05	12.69
	12H	10.07	10.30	11.27	11.48	13.15	9.70	9.93	10.90	11.11	12.78
12H	4H	9.14	9.47	10.32	10.64	12.26	8.80	9.12	9.98	10.29	11.92
	6H	9.79	10.04	10.98	11.22	12.86	9.44	9.70	10.64	10.88	12.52
	8H	10.00	10.23	11.20	11.41	13.08	9.65	9.88	10.85	11.06	12.73