

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: P907304

Luminaire Tested: DFN2DIP-TR4F0-040D120US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907304
REPORT IS A COMBINATION OF REPORTS P900514 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D120US835-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

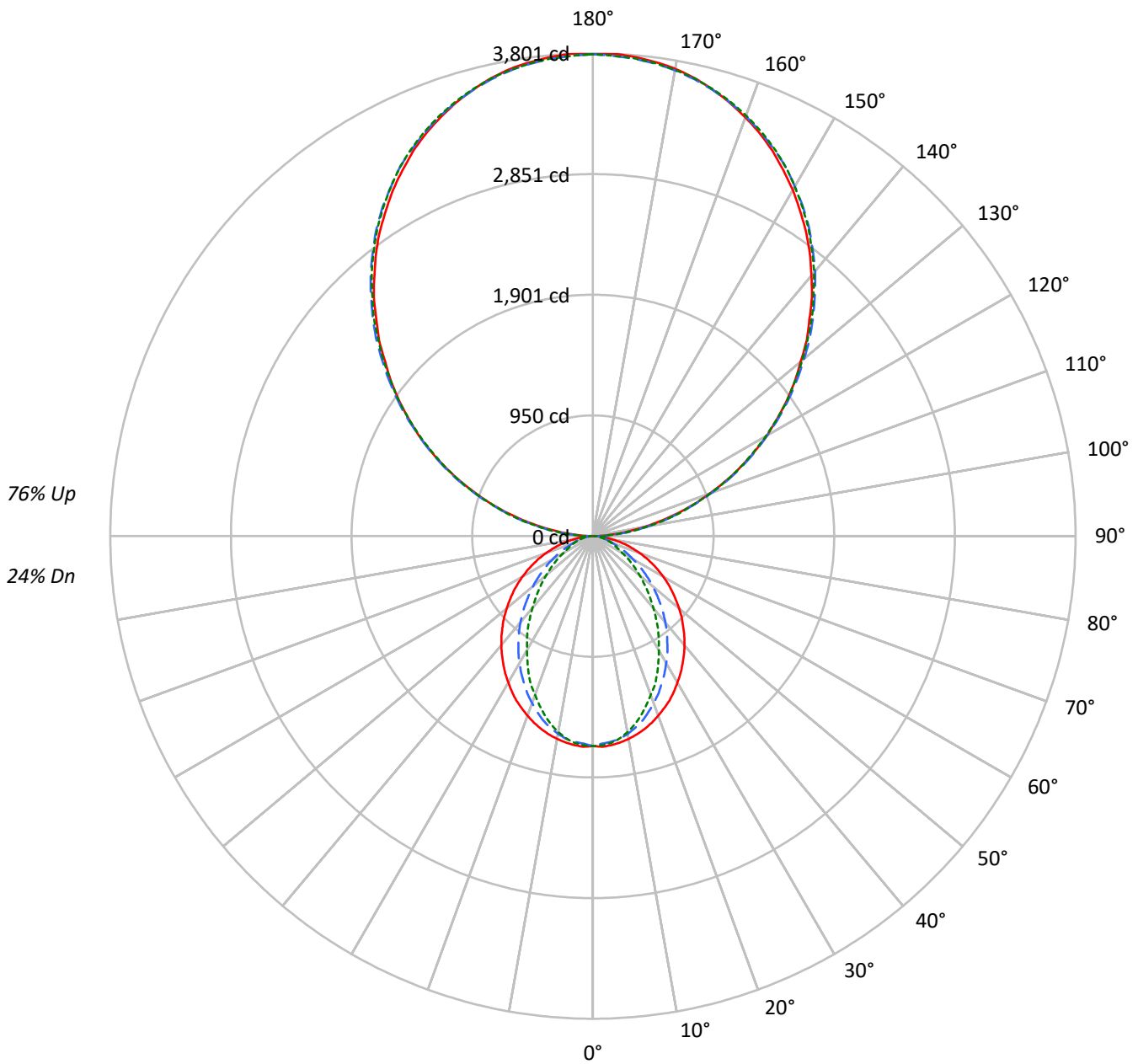
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14020.0 lumens
Efficiency: N/A
Efficacy: 113.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 123.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	33	33	33	24			24
1	92	88	85	81	82	79	76	73	61	59	57	44	43	42	29	28	28	21			21
2	84	77	71	67	75	69	64	60	53	50	47	39	37	35	26	25	24	18			18
3	77	68	61	56	68	61	55	50	47	43	40	35	32	30	23	22	20	15			15
4	70	60	53	47	62	54	48	43	42	38	34	31	28	26	21	19	18	13			13
5	64	54	46	40	57	48	42	37	38	33	29	28	25	22	19	17	16	12			12
6	59	48	40	35	53	43	37	32	34	29	26	25	22	20	17	15	14	11			11
7	55	43	36	30	49	39	32	28	31	26	23	23	20	17	16	14	12	9			9
8	51	39	32	27	45	35	29	24	28	23	20	21	18	16	14	12	11	8			8
9	47	36	29	24	42	32	26	22	25	21	18	19	16	14	13	11	10	8			8
10	44	33	26	21	39	29	23	19	23	19	16	18	15	13	12	10	9	7			7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1313	1313	1313
5°	1315	1292	1301
10°	1302	1267	1258
15°	1285	1225	1193
20°	1261	1167	1113
25°	1237	1103	1035
30°	1204	1036	937
35°	1172	965	850
40°	1140	891	751
45°	1102	809	661
50°	1063	727	574
55°	1022	638	489
60°	975	546	403
65°	920	452	362
70°	855	364	328
75°	772	321	298
80°	652	269	259
85°	455	180	194

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2958 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.9	1.1
10°-20°	425.3	3.0
20°-30°	597.2	4.3
30°-40°	650.9	4.6
40°-50°	598.3	4.3
50°-60°	469.9	3.4
60°-70°	305.8	2.2
70°-80°	157.4	1.1
80°-90°	51.0	0.4
90°-100°	234.8	1.7
100°-110°	746.2	5.3
110°-120°	1276.9	9.1
120°-130°	1679.4	12.0
130°-140°	1885.0	13.4
140°-150°	1848.5	13.2
150°-160°	1550.6	11.1
160°-170°	1028.3	7.3
170°-180°	359.4	2.6
0°-30°	1177.4	8.4
0°-40°	1828.4	13.0
0°-60°	2896.5	20.7
0°-90°	3410.8	24.3
90°-120°	2257.9	16.1
90°-150°	7670.8	54.7
90°-180°	10609.0	75.7
0°-180°	14020.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1653	1653	1653	1653	1653	
5°	1653	1646	1626	1640	1635	157
15°	1572	1556	1505	1477	1462	443
25°	1427	1379	1281	1219	1197	656
35°	1230	1154	1022	928	895	770
45°	1005	905	748	642	606	776
55°	764	648	486	396	368	683
65°	516	395	260	210	205	512
75°	275	170	120	109	108	291
85°	64	33	28	28	28	74
90°	3	41	112	105	109	14
95°	167	199	205	205	199	186
105°	689	698	705	710	710	727
115°	1281	1300	1294	1291	1281	1267
125°	1864	1892	1883	1873	1870	1666
135°	2411	2446	2453	2450	2440	1863
145°	2927	2950	2968	2971	2959	1829
155°	3347	3356	3366	3382	3372	1540
165°	3641	3637	3637	3660	3644	1027
175°	3788	3779	3772	3795	3776	360
180°	3795	3795	3795	3795	3795	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1653.2	1653.2	1653.2	1653.2	1653.2
2.5°	1660.7	1653.2	1636.7	1651.8	1648.7
5°	1653.2	1645.7	1626.2	1639.7	1635.3
7.5°	1639.7	1630.8	1609.9	1615.7	1608.3
10°	1621.8	1611.3	1581.4	1576.8	1568.0
12.5°	1599.4	1585.9	1545.4	1536.5	1520.0
15°	1572.4	1555.9	1505.1	1476.7	1461.8
17.5°	1541.0	1517.0	1454.1	1421.3	1397.3
20°	1505.1	1475.1	1400.3	1363.0	1330.0
22.5°	1466.2	1431.8	1344.9	1294.1	1271.8
25°	1427.3	1379.4	1280.6	1219.4	1196.8
27.5°	1381.0	1330.0	1220.8	1150.5	1116.0
30°	1331.6	1274.6	1154.9	1078.7	1038.3
32.5°	1283.7	1214.8	1092.2	1002.4	964.9
35°	1229.9	1153.5	1021.9	927.6	894.6
37.5°	1177.5	1095.1	956.0	852.7	815.4
40°	1122.1	1032.4	887.2	781.0	742.1
42.5°	1065.2	969.5	818.4	707.6	670.3
45°	1005.4	905.1	748.1	641.8	605.9
47.5°	948.6	842.4	680.8	574.5	541.6
50°	885.7	779.5	614.9	511.6	480.3
52.5°	824.3	712.1	552.1	453.3	424.9
55°	764.5	647.8	486.2	396.5	368.1
57.5°	703.2	583.5	427.9	344.1	320.2
60°	640.3	520.6	366.5	290.3	266.4
62.5°	579.1	459.4	314.1	242.4	230.5
65°	516.2	394.9	260.3	209.5	204.9
67.5°	456.4	335.1	209.5	184.0	179.5
70°	393.5	276.8	173.5	158.6	152.5
72.5°	333.7	222.9	145.1	133.2	130.2
75°	275.2	170.5	119.7	109.2	107.8
77.5°	217.0	121.1	94.3	88.3	85.2
80°	163.0	86.8	71.7	65.9	65.9
82.5°	113.7	58.4	49.4	46.3	46.3
85°	64.3	32.9	28.4	28.4	28.4
87.5°	24.0	11.9	11.9	10.5	10.5
90°	3.4	41.2	112.1	105.3	108.7
92.5°	70.9	96.1	99.5	103.0	103.0
95°	167.0	199.1	204.8	204.8	199.1
97.5°	278.0	307.8	320.4	320.4	320.4
100°	406.2	432.5	441.6	441.6	438.2
102.5°	541.2	560.6	573.2	576.7	573.2
105°	688.8	697.9	704.8	710.5	710.5
107.5°	835.2	849.0	849.0	851.2	835.2
110°	977.1	995.4	995.4	995.4	986.3



TEST NUMBER: P907304

CATALOG NUMBER: DFN2DIP-TR4F0-040D120US835-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1130.4	1149.9	1146.4	1137.3	1130.4
115°	1281.4	1299.8	1294.0	1290.6	1281.4
117.5°	1431.3	1456.5	1440.5	1431.3	1422.2
120°	1582.4	1607.5	1582.4	1582.4	1572.1
122.5°	1719.7	1751.7	1735.7	1726.5	1719.7
125°	1863.8	1892.4	1883.3	1873.0	1869.5
127.5°	2004.6	2040.0	2027.4	2013.7	2004.6
130°	2136.1	2177.3	2171.6	2164.7	2152.1
132.5°	2283.7	2315.8	2318.0	2302.0	2292.9
135°	2410.7	2446.2	2453.1	2449.6	2440.5
137.5°	2552.6	2581.2	2586.9	2584.6	2570.9
140°	2677.3	2705.9	2721.9	2721.9	2709.3
142.5°	2805.5	2834.1	2843.2	2846.6	2834.1
145°	2926.7	2949.6	2967.9	2971.4	2958.8
147.5°	3035.4	3064.0	3077.8	3083.5	3070.9
150°	3147.6	3167.0	3179.6	3189.9	3179.6
152.5°	3247.1	3266.5	3282.6	3295.2	3282.6
155°	3346.6	3355.8	3366.1	3382.1	3371.8
157.5°	3432.5	3439.3	3445.0	3467.9	3451.9
160°	3509.1	3516.0	3519.4	3538.9	3525.1
162.5°	3580.0	3580.0	3583.5	3605.2	3589.2
165°	3640.7	3637.3	3637.3	3660.1	3644.1
167.5°	3695.6	3685.3	3685.3	3708.2	3692.2
170°	3736.8	3727.6	3724.2	3747.1	3727.6
172.5°	3765.4	3756.2	3752.8	3775.7	3756.2
175°	3788.3	3779.1	3772.3	3795.1	3775.7
177.5°	3800.9	3791.7	3784.8	3804.3	3784.8
180°	3795.1	3795.1	3795.1	3795.1	3795.1



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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	5.00	5.66	6.16	6.80	8.40	0.98	1.63	2.13	2.77	4.37
	3H	6.67	7.26	7.83	8.40	10.02	2.15	2.74	3.31	3.89	5.50
	4H	7.27	7.83	8.44	8.97	10.59	2.60	3.15	3.77	4.30	5.92
	6H	7.68	8.19	8.86	9.34	10.97	2.91	3.42	4.09	4.57	6.20
	8H	7.80	8.29	8.98	9.45	11.07	3.00	3.48	4.18	4.65	6.27
	12H	7.86	8.32	9.04	9.48	11.12	3.03	3.50	4.22	4.65	6.30
4H	2H	5.00	5.56	6.18	6.71	8.32	1.55	2.11	2.73	3.26	4.87
	3H	6.81	7.28	8.00	8.45	10.08	2.89	3.35	4.07	4.52	6.15
	4H	7.50	7.93	8.68	9.09	10.74	3.43	3.86	4.61	5.02	6.66
	6H	8.00	8.37	9.19	9.55	11.19	3.84	4.20	5.03	5.39	7.03
	8H	8.18	8.52	9.36	9.69	11.35	3.96	4.31	5.15	5.48	7.13
	12H	8.26	8.57	9.47	9.76	11.42	4.02	4.33	5.22	5.52	7.18
8H	4H	7.45	7.80	8.64	8.97	10.62	3.70	4.04	4.88	5.21	6.87
	6H	8.01	8.29	9.22	9.51	11.16	4.21	4.49	5.41	5.71	7.36
	8H	8.23	8.47	9.44	9.67	11.34	4.40	4.64	5.61	5.84	7.51
	12H	8.36	8.58	9.57	9.77	11.47	4.51	4.73	5.73	5.92	7.62
12H	4H	7.40	7.71	8.60	8.89	10.55	3.69	4.00	4.89	5.19	6.85
	6H	7.99	8.23	9.20	9.43	11.10	4.26	4.50	5.47	5.70	7.37
	8H	8.20	8.42	9.42	9.61	11.31	4.46	4.68	5.67	5.87	7.57