

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: P904765

Luminaire Tested: DFN2DIP-TR4F0-100D050US830-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904765
REPORT IS A COMBINATION OF REPORTS P901920 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-100D050US830-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

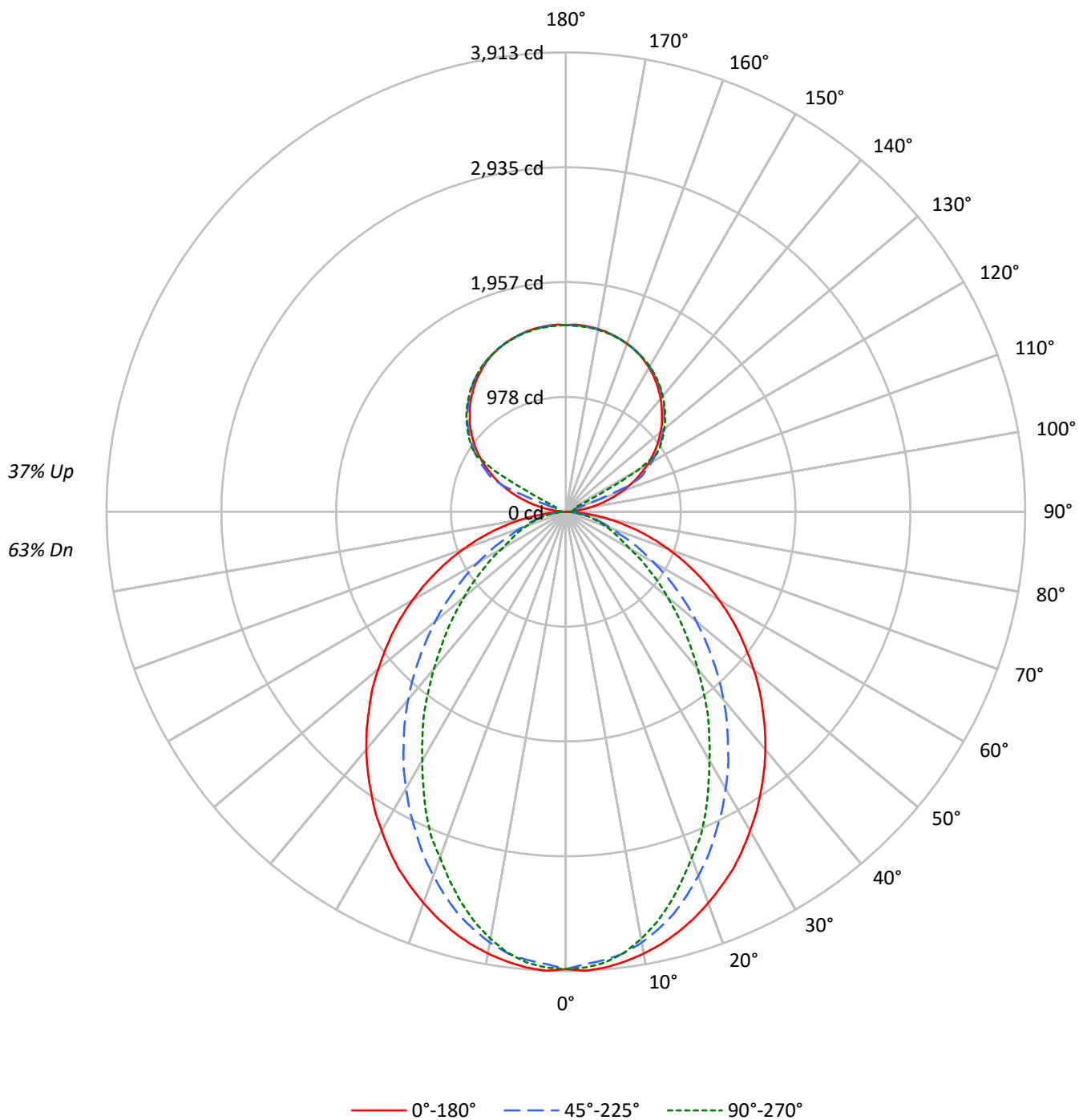
Lumens per Lamp: N/A
Luminaire Lumens: 12677.2 lumens
Efficiency: N/A
Efficacy: 91.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 138.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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



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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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3095	3095	3095
5°	3100	3046	3065
10°	3069	2986	2965
15°	3027	2887	2811
20°	2971	2751	2622
25°	2914	2598	2439
30°	2837	2442	2207
35°	2762	2274	2003
40°	2685	2100	1770
45°	2596	1907	1559
50°	2504	1712	1352
55°	2408	1504	1153
60°	2297	1286	949
65°	2169	1065	854
70°	2014	859	773
75°	1819	757	703
80°	1537	635	609
85°	1071	423	457

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2596 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	365.1	2.9
10°-20°	1002.2	7.9
20°-30°	1407.1	11.1
30°-40°	1533.9	12.1
40°-50°	1409.8	11.1
50°-60°	1107.2	8.7
60°-70°	720.7	5.7
70°-80°	371.0	2.9
80°-90°	97.5	0.8
90°-100°	52.5	0.4
100°-110°	195.5	1.5
110°-120°	518.5	4.1
120°-130°	860.0	6.8
130°-140°	913.5	7.2
140°-150°	849.0	6.7
150°-160°	682.6	5.4
160°-170°	439.8	3.5
170°-180°	151.4	1.2
0°-30°	2774.5	21.9
0°-40°	4308.3	34.0
0°-60°	6825.3	53.8
0°-90°	8014.4	63.2
90°-120°	766.5	6.0
90°-150°	3389.0	26.7
90°-180°	4663.0	36.8
0°-180°	12677.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3896	3896	3896	3896	3896	
5°	3896	3878	3832	3864	3853	369
15°	3705	3666	3546	3480	3444	1044
25°	3363	3250	3018	2873	2820	1547
35°	2898	2718	2408	2186	2108	1814
45°	2369	2133	1763	1512	1428	1830
55°	1801	1526	1146	934	867	1610
65°	1216	931	613	494	483	1206
75°	649	402	282	257	254	686
85°	152	77	67	67	67	174
90°	1	14	23	29	31	12
95°	75	37	45	51	50	89
105°	350	384	70	83	88	374
115°	662	681	710	177	94	651
125°	936	951	972	980	984	834
135°	1158	1176	1186	1198	1196	894
145°	1343	1342	1361	1370	1364	840
155°	1479	1469	1482	1489	1480	681
165°	1558	1551	1555	1563	1555	440
175°	1594	1586	1588	1596	1585	152
180°	1590	1590	1590	1590	1590	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3895.5	3895.5	3895.5	3895.5	3895.5
2.5°	3913.1	3895.5	3856.6	3892.1	3885.1
5°	3895.5	3877.9	3831.9	3863.8	3853.2
7.5°	3863.8	3842.7	3793.4	3807.2	3789.7
10°	3821.4	3796.7	3726.4	3715.6	3694.7
12.5°	3768.8	3736.9	3641.5	3620.6	3581.7
15°	3705.1	3666.2	3546.5	3479.6	3444.4
17.5°	3631.0	3574.6	3426.5	3349.0	3292.6
20°	3546.5	3475.8	3299.7	3211.8	3134.0
22.5°	3454.9	3373.7	3169.1	3049.5	2996.7
25°	3363.3	3250.4	3017.6	2873.2	2820.2
27.5°	3254.0	3134.0	2876.6	2710.9	2629.8
30°	3137.7	3003.4	2721.4	2541.9	2446.6
32.5°	3024.8	2862.4	2573.7	2362.0	2273.7
35°	2897.9	2718.1	2408.0	2185.8	2108.0
37.5°	2774.6	2580.4	2252.8	2009.3	1921.4
40°	2644.0	2432.7	2090.5	1840.2	1748.6
42.5°	2510.1	2284.5	1928.5	1667.5	1579.5
45°	2369.1	2132.7	1762.8	1512.2	1427.7
47.5°	2235.2	1985.0	1604.2	1353.6	1276.2
50°	2087.1	1836.8	1449.0	1205.5	1131.8
52.5°	1942.3	1677.9	1300.9	1068.2	1001.3
55°	1801.3	1526.4	1145.7	934.3	867.3
57.5°	1657.0	1374.9	1008.4	810.9	754.4
60°	1508.8	1226.8	863.7	684.1	627.6
62.5°	1364.4	1082.4	740.2	571.2	543.1
65°	1216.4	930.6	613.4	493.7	482.9
67.5°	1075.3	789.6	493.7	433.5	423.0
70°	927.2	652.3	408.8	373.6	359.5
72.5°	786.2	525.1	341.9	313.8	306.7
75°	648.6	401.7	282.0	257.3	253.9
77.5°	511.3	285.4	222.2	207.9	200.9
80°	384.1	204.6	169.1	155.2	155.2
82.5°	267.8	137.6	116.3	109.2	109.2
85°	151.5	77.4	66.9	66.9	66.9
87.5°	56.5	28.1	28.1	24.7	24.7
90°	1.1	13.8	23.0	28.8	31.0
92.5°	28.8	24.2	27.6	30.0	31.0
95°	74.7	36.8	44.9	50.7	49.5
97.5°	134.6	40.3	58.6	62.2	63.2
100°	203.8	46.1	65.6	74.7	77.1
102.5°	279.7	277.4	68.0	80.5	84.1
105°	349.9	384.5	70.2	82.8	87.5
107.5°	431.6	460.2	72.6	85.1	89.8
110°	509.9	534.0	201.4	86.3	90.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	583.5	604.2	584.7	88.6	92.1
115°	661.8	681.3	710.1	177.3	94.4
117.5°	729.6	752.6	772.3	607.6	306.1
120°	805.6	822.8	843.6	857.4	702.0
122.5°	870.0	888.4	911.5	918.4	919.6
125°	935.6	950.6	972.5	980.5	984.0
127.5°	995.4	1011.5	1029.0	1040.4	1041.5
130°	1051.9	1070.4	1082.9	1095.6	1094.6
132.5°	1109.5	1124.5	1137.0	1147.5	1146.3
135°	1157.8	1176.3	1186.5	1198.2	1195.8
137.5°	1208.3	1222.2	1233.8	1245.3	1241.9
140°	1257.8	1267.2	1279.7	1290.1	1284.4
142.5°	1299.4	1307.5	1322.4	1331.5	1325.8
145°	1343.1	1341.9	1361.4	1369.5	1363.8
147.5°	1381.0	1377.5	1397.1	1402.9	1398.4
150°	1417.9	1409.9	1428.2	1435.1	1429.4
152.5°	1448.9	1439.7	1457.0	1464.0	1455.9
155°	1478.8	1468.6	1482.3	1489.2	1480.1
157.5°	1503.0	1493.8	1504.2	1512.3	1503.0
160°	1523.8	1516.8	1523.8	1530.6	1522.6
162.5°	1542.1	1535.3	1541.0	1549.1	1538.7
165°	1558.2	1551.4	1554.8	1562.8	1554.8
167.5°	1570.9	1564.0	1567.5	1575.6	1565.2
170°	1581.3	1574.3	1576.7	1584.7	1574.3
172.5°	1588.2	1581.3	1583.7	1591.7	1581.3
175°	1593.9	1585.8	1588.2	1596.2	1584.7
177.5°	1596.2	1588.2	1589.4	1597.4	1587.1
180°	1590.4	1590.4	1590.4	1590.4	1590.4

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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	12.22	13.17	13.06	14.03	15.10	8.19	9.14	9.03	10.00	11.07
	3H	13.91	14.76	14.76	15.62	16.72	9.39	10.24	10.25	11.11	12.21
	4H	14.52	15.32	15.39	16.20	17.31	9.85	10.65	10.72	11.53	12.64
	6H	14.95	15.69	15.83	16.57	17.69	10.18	10.91	11.06	11.80	12.92
	8H	15.08	15.78	15.97	16.68	17.80	10.27	10.97	11.16	11.87	13.00
	12H	15.14	15.81	16.04	16.70	17.85	10.32	10.99	11.21	11.88	13.03
4H	2H	12.25	13.05	13.13	13.93	15.04	8.80	9.61	9.68	10.48	11.59
	3H	14.09	14.76	14.98	15.67	16.79	10.16	10.83	11.05	11.74	12.86
	4H	14.79	15.40	15.69	16.30	17.45	10.72	11.32	11.62	12.23	13.38
	6H	15.31	15.83	16.22	16.76	17.91	11.14	11.67	12.06	12.59	13.75
	8H	15.49	15.98	16.40	16.90	18.06	11.28	11.76	12.19	12.69	13.85
	12H	15.59	16.03	16.52	16.97	18.14	11.35	11.79	12.28	12.73	13.90
8H	4H	14.77	15.25	15.68	16.18	17.34	11.01	11.49	11.92	12.42	13.58
	6H	15.34	15.74	16.28	16.70	17.87	11.53	11.93	12.47	12.90	14.06
	8H	15.55	15.91	16.50	16.86	18.05	11.72	12.08	12.67	13.03	14.22
	12H	15.70	16.01	16.65	16.96	18.19	11.85	12.16	12.80	13.11	14.34
12H	4H	14.72	15.16	15.66	16.10	17.27	11.02	11.46	11.95	12.40	13.57
	6H	15.31	15.67	16.26	16.62	17.81	11.58	11.94	12.53	12.89	14.08
	8H	15.54	15.85	16.49	16.80	18.03	11.80	12.11	12.75	13.06	14.29