

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: P904531

Luminaire Tested: DFN2DIP-TR3F0-090D060US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904531
REPORT IS A COMBINATION OF REPORTS P901846 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-090D060US830-RLLONL
Description: 3 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

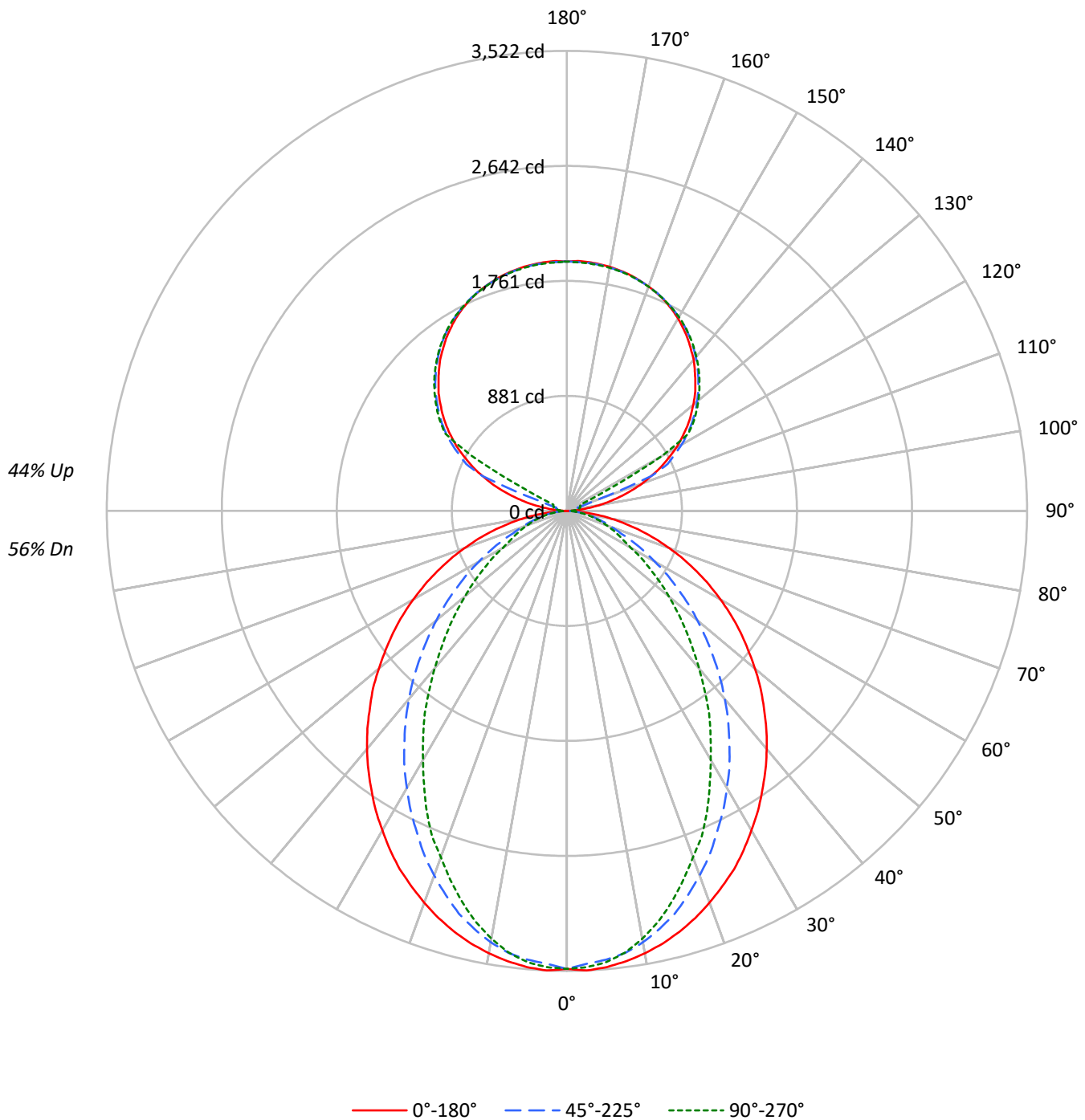
Lumens per Lamp: N/A
Luminaire Lumens: 12809.1 lumens
Efficiency: N/A
Efficacy: 91.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 140
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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
RCR																	
0	109	109	109	109	101	101	101	101	87	87	87		74	74	74		62
1	100	96	92	88	93	89	86	83	77	75	72		66	64	63		56
2	91	84	78	73	85	79	73	69	68	64	61		58	56	53		50
3	84	74	67	62	78	70	63	58	61	56	52		52	49	46		44
4	77	66	59	53	71	62	55	50	54	49	45		47	43	40		40
5	71	59	51	46	66	56	49	43	49	43	39		42	38	35		36
6	65	54	46	40	61	50	43	38	44	39	34		39	34	31		33
7	61	49	41	35	56	46	39	34	40	35	30		35	31	27		30
8	56	44	37	31	52	42	35	30	37	31	27		32	28	25		28
9	53	41	33	28	49	38	32	27	34	28	25		30	25	22		26
10	49	37	30	25	46	35	29	24	31	26	22		28	23	20		24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4369	4369	4369
5°	4373	4296	4324
10°	4328	4208	4181
15°	4266	4065	3960
20°	4184	3870	3691
25°	4101	3652	3431
30°	3990	3429	3103
35°	3882	3189	2814
40°	3771	2941	2484
45°	3642	2667	2184
50°	3509	2391	1892
55°	3370	2095	1612
60°	3208	1788	1324
65°	3023	1475	1188
70°	2797	1184	1071
75°	2513	1036	968
80°	2103	857	830
85°	1431	555	607

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3642 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	328.6	2.6
10°-20°	902.0	7.0
20°-30°	1266.4	9.9
30°-40°	1380.5	10.8
40°-50°	1268.8	9.9
50°-60°	996.5	7.8
60°-70°	648.6	5.1
70°-80°	333.9	2.6
80°-90°	88.6	0.7
90°-100°	62.9	0.5
100°-110°	234.6	1.8
110°-120°	622.2	4.9
120°-130°	1032.0	8.1
130°-140°	1096.2	8.6
140°-150°	1018.8	8.0
150°-160°	819.1	6.4
160°-170°	527.8	4.1
170°-180°	181.7	1.4
0°-30°	2497.0	19.5
0°-40°	3877.5	30.3
0°-60°	6142.8	48.0
0°-90°	7213.8	56.3
90°-120°	919.8	7.2
90°-150°	4066.8	31.7
90°-180°	5595.0	43.7
0°-180°	12809.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3506	3506	3506	3506	3506	
5°	3506	3490	3449	3477	3468	332
15°	3335	3300	3192	3132	3100	940
25°	3027	2925	2716	2586	2538	1392
35°	2608	2446	2167	1967	1897	1632
45°	2132	1920	1586	1361	1285	1647
55°	1621	1374	1031	841	781	1449
65°	1095	838	552	444	435	1085
75°	584	362	254	232	229	617
85°	136	70	60	60	60	156
90°	1	17	28	35	37	12
95°	90	44	54	61	59	106
105°	420	461	84	99	105	449
115°	794	818	852	213	113	782
125°	1123	1141	1167	1177	1181	1001
135°	1389	1412	1424	1438	1435	1073
145°	1612	1610	1634	1643	1636	1008
155°	1775	1762	1779	1787	1776	818
165°	1870	1862	1866	1876	1866	528
175°	1913	1903	1906	1915	1902	182
180°	1909	1909	1909	1909	1909	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3506.0	3506.0	3506.0	3506.0	3506.0
2.5°	3521.8	3506.0	3470.9	3503.0	3496.5
5°	3506.0	3490.1	3448.8	3477.3	3467.9
7.5°	3477.3	3458.5	3414.1	3426.5	3410.7
10°	3439.3	3417.1	3353.8	3344.0	3325.2
12.5°	3391.8	3363.3	3277.4	3258.6	3223.5
15°	3334.6	3299.7	3191.9	3131.6	3100.0
17.5°	3268.0	3217.2	3083.8	3014.2	2963.4
20°	3191.9	3128.3	2969.7	2890.6	2820.6
22.5°	3109.4	3036.4	2852.2	2744.5	2697.1
25°	3027.0	2925.3	2715.9	2586.0	2538.2
27.5°	2928.7	2820.6	2589.0	2439.9	2366.8
30°	2824.0	2703.1	2449.3	2287.7	2201.9
32.5°	2722.3	2576.2	2316.3	2125.8	2046.4
35°	2608.2	2446.3	2167.2	1967.3	1897.2
37.5°	2497.1	2322.4	2027.5	1808.4	1729.3
40°	2379.6	2189.4	1881.4	1656.2	1573.8
42.5°	2259.1	2056.2	1735.6	1500.7	1421.5
45°	2132.2	1919.5	1586.5	1360.9	1284.9
47.5°	2011.7	1786.5	1443.8	1218.2	1148.6
50°	1878.4	1653.1	1304.1	1085.0	1018.6
52.5°	1748.1	1510.1	1170.8	961.4	901.2
55°	1621.2	1373.8	1031.0	840.9	780.6
57.5°	1491.3	1237.5	907.6	729.8	679.0
60°	1357.9	1104.1	777.3	615.7	564.9
62.5°	1228.0	974.2	666.2	514.1	488.8
65°	1094.7	837.5	552.0	444.3	434.6
67.5°	967.8	710.6	444.3	390.1	380.7
70°	834.5	587.1	368.0	336.3	323.5
72.5°	707.6	472.6	307.6	282.4	276.1
75°	583.7	361.6	253.8	231.6	228.6
77.5°	460.1	256.8	199.9	187.2	180.8
80°	345.7	184.2	152.1	139.7	139.7
82.5°	241.0	123.9	104.7	98.3	98.3
85°	136.3	69.7	60.2	60.2	60.2
87.5°	50.8	25.3	25.3	22.2	22.2
90°	1.3	16.6	27.5	34.6	37.2
92.5°	34.6	29.0	33.1	35.9	37.2
95°	89.7	44.1	53.8	60.9	59.4
97.5°	161.6	48.4	70.3	74.6	76.0
100°	244.5	55.2	78.7	89.7	92.5
102.5°	335.5	332.9	81.5	96.6	100.9
105°	419.8	461.3	84.3	99.3	105.0
107.5°	517.9	552.3	87.1	102.2	107.7
110°	611.9	640.7	241.8	103.7	109.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	700.2	725.0	701.5	106.2	110.6
115°	794.1	817.6	852.2	212.7	113.3
117.5°	875.5	903.1	926.7	729.2	367.3
120°	966.8	987.4	1012.4	1028.9	842.4
122.5°	1044.0	1066.1	1093.8	1102.0	1103.5
125°	1122.8	1140.8	1167.0	1176.7	1180.7
127.5°	1194.6	1213.9	1234.7	1248.5	1249.8
130°	1262.3	1284.4	1299.5	1314.8	1313.4
132.5°	1331.3	1349.3	1364.4	1376.9	1375.5
135°	1389.4	1411.6	1423.8	1437.8	1434.9
137.5°	1450.0	1466.6	1480.5	1494.3	1490.3
140°	1509.4	1520.6	1535.7	1548.1	1541.2
142.5°	1559.2	1569.0	1586.9	1597.8	1590.9
145°	1611.7	1610.2	1633.7	1643.4	1636.5
147.5°	1657.2	1653.0	1676.5	1683.4	1678.0
150°	1701.5	1691.8	1713.9	1722.1	1715.2
152.5°	1738.7	1727.7	1748.3	1756.7	1747.0
155°	1774.6	1762.3	1778.9	1787.1	1776.0
157.5°	1803.6	1792.6	1805.1	1814.8	1803.6
160°	1828.5	1820.1	1828.5	1836.7	1827.1
162.5°	1850.5	1842.3	1849.2	1858.9	1846.4
165°	1869.9	1861.7	1865.8	1875.5	1865.8
167.5°	1885.1	1876.8	1881.0	1890.7	1878.2
170°	1897.6	1889.2	1892.1	1901.7	1889.2
172.5°	1905.8	1897.6	1900.4	1910.1	1897.6
175°	1912.7	1903.0	1905.8	1915.4	1901.7
177.5°	1915.4	1905.8	1907.2	1916.9	1904.5
180°	1908.6	1908.6	1908.6	1908.6	1908.6

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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	12.79	13.67	13.70	14.60	15.78	8.77	9.65	9.67	10.57	11.75
	3H	14.46	15.25	15.38	16.18	17.39	9.95	10.74	10.87	11.68	12.88
	4H	15.07	15.81	16.00	16.75	17.97	10.40	11.15	11.34	12.09	13.30
	6H	15.48	16.17	16.43	17.11	18.34	10.72	11.41	11.67	12.35	13.58
	8H	15.61	16.26	16.56	17.22	18.45	10.81	11.46	11.76	12.42	13.65
	12H	15.67	16.29	16.62	17.24	18.49	10.85	11.48	11.81	12.43	13.68
4H	2H	12.81	13.56	13.75	14.50	15.71	9.36	10.11	10.30	11.05	12.26
	3H	14.64	15.26	15.59	16.22	17.45	10.71	11.33	11.66	12.30	13.53
	4H	15.32	15.89	16.28	16.85	18.10	11.26	11.82	12.22	12.78	14.04
	6H	15.83	16.32	16.81	17.30	18.56	11.67	12.16	12.65	13.14	14.40
	8H	16.00	16.46	16.98	17.44	18.70	11.80	12.25	12.77	13.23	14.50
	12H	16.10	16.50	17.09	17.50	18.77	11.86	12.27	12.86	13.27	14.54
8H	4H	15.29	15.75	16.27	16.73	17.99	11.53	11.99	12.51	12.97	14.24
	6H	15.85	16.23	16.85	17.25	18.51	12.05	12.42	13.05	13.44	14.71
	8H	16.06	16.39	17.07	17.40	18.69	12.23	12.57	13.24	13.57	14.86
	12H	16.20	16.49	17.21	17.49	18.82	12.35	12.64	13.36	13.64	14.97
12H	4H	15.25	15.66	16.24	16.65	17.92	11.54	11.95	12.53	12.95	14.22
	6H	15.83	16.16	16.83	17.17	18.45	12.09	12.43	13.10	13.43	14.72
	8H	16.04	16.33	17.05	17.34	18.67	12.30	12.59	13.31	13.60	14.93