

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: P926392

Luminaire Tested: DFN2DIP-TR4F0-040D100US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926392
REPORT IS A COMBINATION OF REPORTS P900478 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D100US950-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

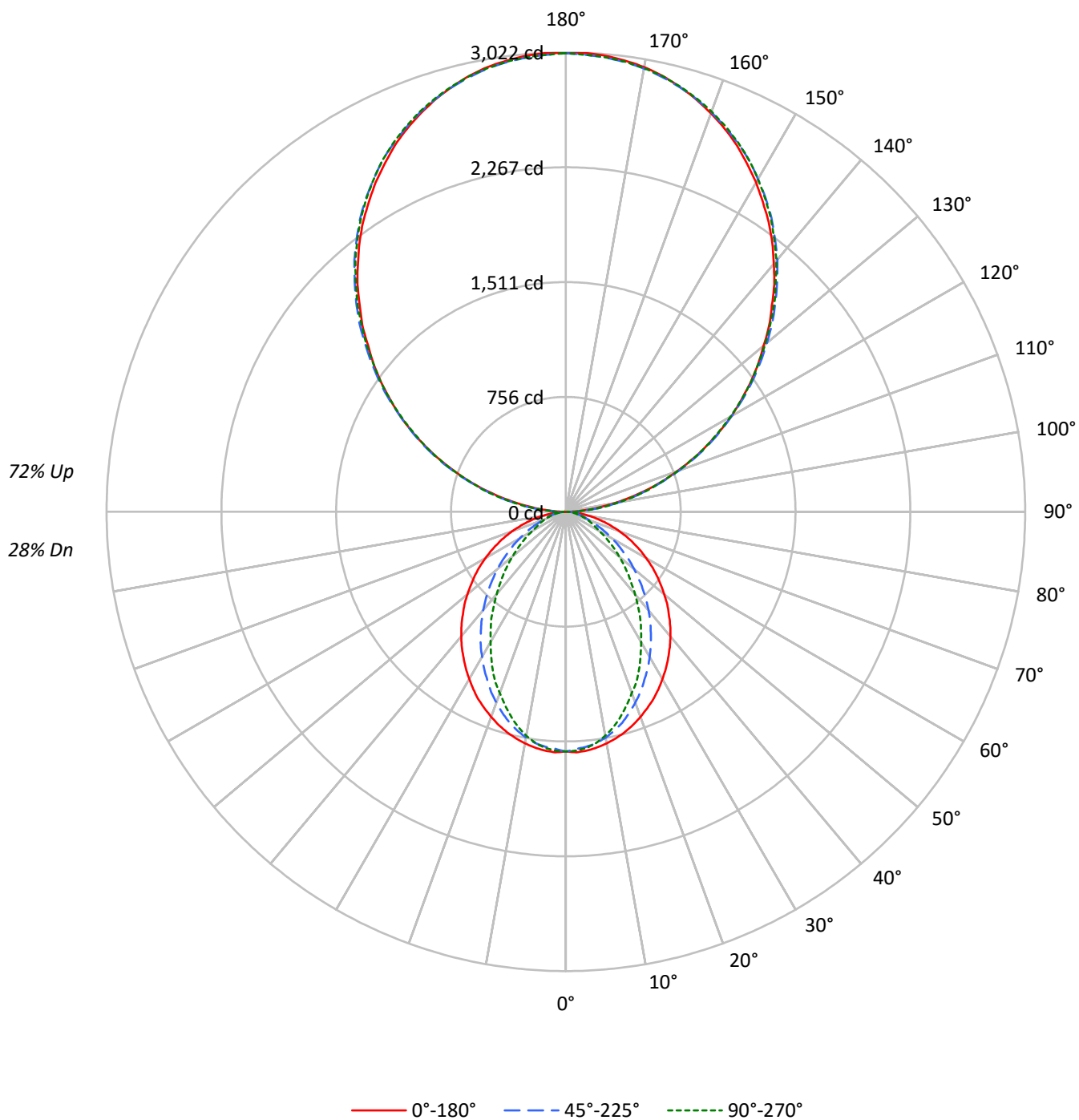
Lumens per Lamp: N/A
Luminaire Lumens: 11686.5 lumens
Efficiency: N/A
Efficacy: 107.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 108.3
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



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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	50	30	10
RCR																				
0	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	36	36	28
1	93	89	85	82	83	80	77	74	62	60	59	47	45	44	32	31	31	31	31	24
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	28	27	26	26	26	20
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	25	24	23	23	23	18
4	71	61	53	48	63	55	48	44	43	39	35	33	30	27	23	21	20	20	20	15
5	65	54	47	41	58	49	42	37	39	34	31	29	26	24	21	19	17	17	17	14
6	60	49	41	35	54	44	37	32	35	30	27	27	23	21	19	17	15	15	15	12
7	55	44	36	31	50	40	33	28	32	27	23	24	21	19	17	15	14	14	14	11
8	51	40	32	27	46	36	30	25	29	24	21	22	19	16	16	14	12	12	12	10
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11	11	11	9
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10	10	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1253	1253	1253
5°	1255	1233	1241
10°	1243	1209	1201
15°	1225	1169	1138
20°	1203	1114	1061
25°	1180	1052	987
30°	1149	989	894
35°	1118	921	811
40°	1087	850	717
45°	1051	772	631
50°	1014	693	547
55°	975	609	467
60°	930	521	384
65°	878	431	346
70°	815	348	313
75°	736	306	285
80°	622	257	247
85°	433	172	185

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2351 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.8	1.3
10°-20°	405.8	3.5
20°-30°	569.7	4.9
30°-40°	621.0	5.3
40°-50°	570.8	4.9
50°-60°	448.2	3.8
60°-70°	291.8	2.5
70°-80°	150.2	1.3
80°-90°	46.9	0.4
90°-100°	186.7	1.6
100°-110°	593.2	5.1
110°-120°	1015.2	8.7
120°-130°	1335.1	11.4
130°-140°	1498.6	12.8
140°-150°	1469.5	12.6
150°-160°	1232.7	10.5
160°-170°	817.5	7.0
170°-180°	285.7	2.4
0°-30°	1123.3	9.6
0°-40°	1744.3	14.9
0°-60°	2763.3	23.6
0°-90°	3252.2	27.8
90°-120°	1795.1	15.4
90°-150°	6098.3	52.2
90°-180°	8434.0	72.2
0°-180°	11686.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1577	1577	1577	1577	1577	
5°	1577	1570	1551	1564	1560	150
15°	1500	1484	1436	1409	1395	423
25°	1362	1316	1222	1163	1142	626
35°	1173	1100	975	885	853	734
45°	959	864	714	612	578	741
55°	729	618	464	378	351	652
65°	492	377	248	200	196	488
75°	262	163	114	104	103	278
85°	61	31	27	27	27	70
90°	3	33	89	84	86	12
95°	133	158	163	163	158	148
105°	548	555	560	565	565	578
115°	1019	1033	1029	1026	1019	1008
125°	1482	1504	1497	1489	1486	1324
135°	1916	1945	1950	1948	1940	1481
145°	2327	2345	2360	2362	2352	1454
155°	2661	2668	2676	2689	2680	1225
165°	2894	2892	2892	2910	2897	817
175°	3012	3004	2999	3017	3002	286
180°	3017	3017	3017	3017	3017	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1577.2	1577.2	1577.2	1577.2	1577.2
2.5°	1584.3	1577.2	1561.4	1575.8	1572.9
5°	1577.2	1570.0	1551.4	1564.3	1560.1
7.5°	1564.3	1555.8	1535.8	1541.4	1534.3
10°	1547.2	1537.2	1508.7	1504.3	1495.9
12.5°	1525.8	1512.9	1474.3	1465.8	1450.1
15°	1500.1	1484.3	1435.9	1408.8	1394.6
17.5°	1470.1	1447.2	1387.2	1355.9	1333.0
20°	1435.9	1407.2	1335.9	1300.3	1268.8
22.5°	1398.8	1365.9	1283.0	1234.6	1213.3
25°	1361.6	1315.9	1221.7	1163.3	1141.7
27.5°	1317.5	1268.8	1164.6	1097.6	1064.7
30°	1270.3	1216.0	1101.8	1029.1	990.5
32.5°	1224.6	1158.9	1042.0	956.3	920.5
35°	1173.3	1100.4	974.9	884.9	853.4
37.5°	1123.3	1044.7	912.0	813.5	777.9
40°	1070.5	984.9	846.4	745.1	708.0
42.5°	1016.2	924.9	780.8	675.1	639.5
45°	959.2	863.5	713.7	612.3	578.0
47.5°	905.0	803.6	649.5	548.1	516.7
50°	845.0	743.6	586.6	488.1	458.2
52.5°	786.4	679.3	526.7	432.4	405.4
55°	729.3	618.0	463.8	378.3	351.2
57.5°	670.9	556.7	408.2	328.3	305.5
60°	610.8	496.7	349.6	276.9	254.1
62.5°	552.5	438.3	299.7	231.2	219.9
65°	492.5	376.7	248.3	199.9	195.5
67.5°	435.4	319.7	199.9	175.5	171.2
70°	375.4	264.1	165.5	151.3	145.5
72.5°	318.3	212.6	138.4	127.1	124.2
75°	262.5	162.7	114.2	104.2	102.8
77.5°	207.0	115.5	90.0	84.2	81.3
80°	155.5	82.8	68.4	62.9	62.9
82.5°	108.5	55.7	47.1	44.2	44.2
85°	61.3	31.4	27.1	27.1	27.1
87.5°	22.9	11.4	11.4	10.0	10.0
90°	2.8	32.7	89.1	83.7	86.4
92.5°	56.4	76.4	79.2	81.9	81.9
95°	132.8	158.3	162.8	162.8	158.3
97.5°	221.0	244.7	254.7	254.7	254.7
100°	322.9	343.8	351.1	351.1	348.4
102.5°	430.3	445.7	455.7	458.4	455.7
105°	547.6	554.8	560.3	564.9	564.9
107.5°	664.0	675.0	675.0	676.8	664.0
110°	776.8	791.3	791.3	791.3	784.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	898.7	914.1	911.5	904.1	898.7
115°	1018.8	1033.3	1028.8	1026.0	1018.8
117.5°	1137.9	1158.0	1145.2	1137.9	1130.6
120°	1257.9	1278.0	1257.9	1257.9	1249.8
122.5°	1367.1	1392.6	1379.9	1372.6	1367.1
125°	1481.8	1504.5	1497.2	1489.0	1486.3
127.5°	1593.7	1621.8	1611.8	1600.9	1593.7
130°	1698.2	1730.9	1726.5	1720.9	1711.0
132.5°	1815.6	1841.0	1842.8	1830.2	1822.8
135°	1916.5	1944.7	1950.2	1947.5	1940.1
137.5°	2029.3	2052.1	2056.6	2054.8	2043.8
140°	2128.5	2151.2	2164.0	2164.0	2153.9
142.5°	2230.4	2253.1	2260.3	2263.1	2253.1
145°	2326.7	2344.9	2359.5	2362.2	2352.2
147.5°	2413.1	2435.9	2446.8	2451.4	2441.4
150°	2502.3	2517.8	2527.8	2535.9	2527.8
152.5°	2581.4	2596.9	2609.7	2619.7	2609.7
155°	2660.6	2667.9	2676.1	2688.8	2680.5
157.5°	2728.8	2734.3	2738.8	2757.0	2744.3
160°	2789.8	2795.2	2797.9	2813.3	2802.5
162.5°	2846.2	2846.2	2848.8	2866.1	2853.4
165°	2894.3	2891.6	2891.6	2909.8	2897.1
167.5°	2938.0	2929.8	2929.8	2948.1	2935.3
170°	2970.8	2963.5	2960.7	2979.0	2963.5
172.5°	2993.5	2986.2	2983.4	3001.7	2986.2
175°	3011.7	3004.4	2999.0	3017.1	3001.7
177.5°	3021.7	3014.4	3008.9	3024.4	3008.9
180°	3017.1	3017.1	3017.1	3017.1	3017.1

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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	5.38	6.06	6.51	7.18	8.74	1.36	2.03	2.49	3.15	4.71
	3H	7.05	7.65	8.19	8.78	10.36	2.53	3.14	3.67	4.27	5.84
	4H	7.65	8.22	8.80	9.35	10.93	2.98	3.55	4.13	4.68	6.26
	6H	8.06	8.59	9.22	9.72	11.31	3.29	3.82	4.45	4.95	6.54
	8H	8.18	8.69	9.34	9.83	11.42	3.38	3.88	4.54	5.03	6.61
	12H	8.24	8.72	9.40	9.86	11.46	3.42	3.89	4.58	5.03	6.64
4H	2H	5.38	5.96	6.54	7.08	8.66	1.93	2.51	3.09	3.63	5.21
	3H	7.20	7.67	8.36	8.83	10.42	3.27	3.75	4.43	4.90	6.49
	4H	7.88	8.32	9.05	9.47	11.08	3.81	4.25	4.97	5.39	7.00
	6H	8.39	8.77	9.56	9.93	11.53	4.22	4.60	5.39	5.77	7.37
	8H	8.56	8.91	9.73	10.07	11.69	4.35	4.70	5.52	5.86	7.48
	12H	8.65	8.97	9.83	10.14	11.76	4.41	4.73	5.59	5.90	7.52
8H	4H	7.84	8.19	9.01	9.35	10.96	4.08	4.43	5.25	5.59	7.21
	6H	8.40	8.69	9.59	9.89	11.50	4.59	4.88	5.78	6.08	7.70
	8H	8.62	8.87	9.81	10.04	11.68	4.79	5.04	5.98	6.22	7.85
	12H	8.75	8.97	9.94	10.14	11.81	4.90	5.12	6.09	6.29	7.96
12H	4H	7.78	8.10	8.97	9.27	10.89	4.08	4.40	5.26	5.56	7.19
	6H	8.37	8.63	9.57	9.80	11.44	4.64	4.90	5.84	6.07	7.71
	8H	8.59	8.81	9.78	9.98	11.65	4.85	5.07	6.04	6.24	7.91