

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: P904381

Luminaire Tested: DFN2DIP-TR3F0-030D080US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904381
REPORT IS A COMBINATION OF REPORTS P901861 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-030D080US830-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

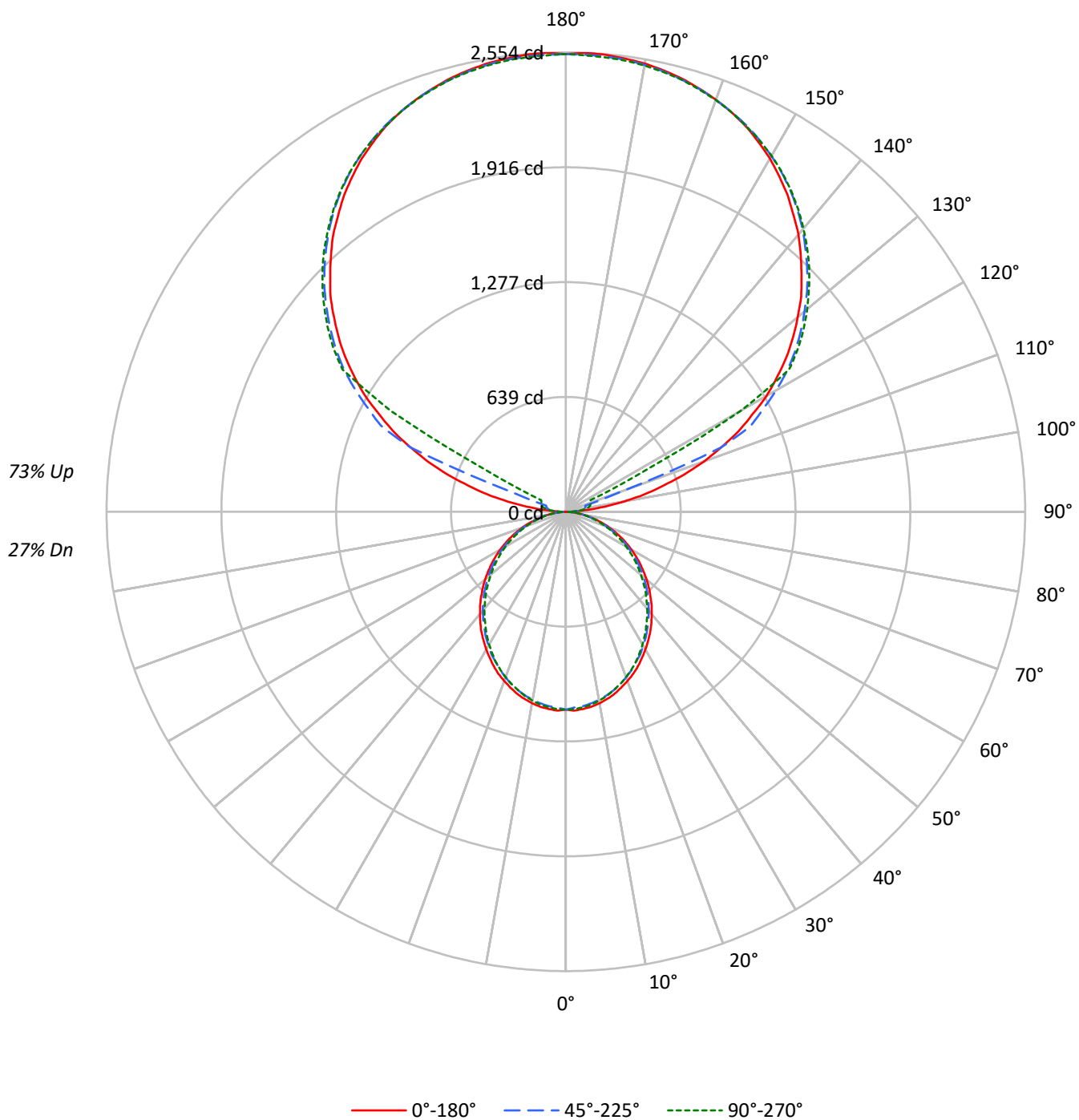
Lumens per Lamp: N/A
Luminaire Lumens: 10264.3 lumens
Efficiency: N/A
Efficacy: 120.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 85.1
Input Voltage (V):
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



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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	102	102	102	102		91	91	91	91		71	71	71		52	52	52		35	35	35
1	93	89	85	81		83	79	76	73		62	60	58		46	45	43		31	30	30
2	84	77	71	66		75	69	64	60		54	51	48		40	38	36		27	26	25
3	77	68	61	55		68	61	55	50		48	44	40		36	33	31		24	23	21
4	70	60	52	47		63	54	47	42		42	38	34		32	29	26		22	20	18
5	64	53	45	40		57	48	41	36		38	33	29		28	25	23		19	18	16
6	59	48	40	34		53	43	36	31		34	29	25		25	22	20		18	16	14
7	55	43	35	30		49	39	32	27		31	26	22		23	20	17		16	14	12
8	51	39	31	26		45	35	28	24		28	23	20		21	18	15		15	13	11
9	47	35	28	23		42	32	26	21		25	21	17		19	16	14		14	12	10
10	44	32	25	21		39	29	23	19		23	19	16		18	15	12		13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1371	1371	1371
5°	1372	1351	1360
10°	1361	1331	1341
15°	1340	1308	1311
20°	1312	1277	1281
25°	1284	1239	1246
30°	1250	1204	1202
35°	1217	1163	1155
40°	1177	1121	1110
45°	1137	1080	1065
50°	1093	1036	1012
55°	1047	985	964
60°	995	925	908
65°	938	862	842
70°	865	786	771
75°	765	695	704
80°	644	578	579
85°	456	381	373

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1694 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	1.0
10°-20°	291.4	2.8
20°-30°	428.2	4.2
30°-40°	497.3	4.8
40°-50°	496.7	4.8
50°-60°	433.1	4.2
60°-70°	320.2	3.1
70°-80°	181.1	1.8
80°-90°	52.3	0.5
90°-100°	83.9	0.8
100°-110°	312.8	3.0
110°-120°	829.6	8.1
120°-130°	1376.0	13.4
130°-140°	1461.6	14.2
140°-150°	1358.4	13.2
150°-160°	1092.1	10.6
160°-170°	703.7	6.9
170°-180°	242.2	2.4
0°-30°	823.1	8.0
0°-40°	1320.4	12.9
0°-60°	2250.3	21.9
0°-90°	2803.8	27.3
90°-120°	1226.4	11.9
90°-150°	5422.4	52.8
90°-180°	7460.0	72.7
0°-180°	10264.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1100	1100	1100	1100	1100	
5°	1100	1096	1084	1093	1091	104
15°	1047	1041	1027	1032	1026	295
25°	948	940	922	924	922	436
35°	818	807	790	784	779	511
45°	666	658	642	631	626	514
55°	504	497	485	472	467	450
65°	340	333	323	313	308	336
75°	178	176	170	164	166	190
85°	43	42	41	38	37	48
90°	2	22	37	46	50	9
95°	120	59	72	81	79	142
105°	560	615	112	132	140	598
115°	1059	1090	1136	284	151	1042
125°	1497	1521	1556	1569	1574	1335
135°	1852	1882	1898	1917	1913	1431
145°	2149	2147	2178	2191	2182	1344
155°	2366	2350	2372	2383	2368	1090
165°	2493	2482	2488	2501	2488	704
175°	2550	2537	2541	2554	2536	243
180°	2545	2545	2545	2545	2545	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1100.2	1100.2	1100.2	1100.2	1100.2
2.5°	1106.6	1101.4	1089.7	1100.2	1098.3
5°	1100.2	1096.1	1084.4	1092.9	1090.8
7.5°	1092.9	1086.6	1074.9	1083.5	1081.3
10°	1081.3	1073.8	1061.2	1069.6	1066.5
12.5°	1065.4	1059.0	1046.4	1051.6	1049.5
15°	1047.4	1041.1	1027.3	1031.5	1026.2
17.5°	1025.1	1018.9	1005.0	1010.3	1005.0
20°	1000.8	994.5	979.7	982.8	978.6
22.5°	976.6	967.0	953.2	953.2	951.0
25°	947.9	939.5	921.5	923.6	921.5
27.5°	916.2	908.7	895.0	891.9	886.6
30°	884.5	876.0	860.2	857.0	852.7
32.5°	850.6	844.3	827.4	821.0	816.7
35°	817.8	807.3	790.3	783.9	778.6
37.5°	780.8	771.3	754.3	746.9	741.6
40°	742.7	734.2	717.3	707.8	703.6
42.5°	705.7	697.2	680.3	669.7	663.4
45°	665.5	658.1	642.2	630.6	626.3
47.5°	626.3	619.0	602.0	590.3	584.0
50°	585.0	579.8	565.0	550.2	544.9
52.5°	544.9	537.4	523.8	512.1	504.6
55°	503.7	497.3	484.6	471.9	466.7
57.5°	462.3	457.0	443.3	430.6	426.3
60°	421.0	416.9	402.1	390.4	387.3
62.5°	380.9	373.4	362.9	352.3	348.1
65°	339.7	333.3	322.7	313.2	307.9
67.5°	297.4	292.0	282.5	275.1	270.9
70°	258.2	253.9	244.4	237.0	232.8
72.5°	218.0	213.7	208.4	201.0	197.9
75°	177.7	175.7	170.3	164.0	166.2
77.5°	141.8	137.5	135.3	132.2	129.1
80°	105.8	104.7	102.5	99.4	97.4
82.5°	71.9	71.9	71.0	66.6	66.6
85°	43.4	42.3	41.3	38.1	37.0
87.5°	19.0	17.0	14.8	11.7	10.6
90°	1.8	22.1	36.8	46.1	49.7
92.5°	46.1	38.7	44.2	47.9	49.7
95°	119.6	58.8	71.7	81.2	79.2
97.5°	215.4	64.5	93.8	99.5	101.2
100°	326.0	73.7	105.0	119.6	123.3
102.5°	447.4	443.8	108.7	128.8	134.5
105°	559.8	615.1	112.4	132.5	140.0
107.5°	690.5	736.4	116.1	136.2	143.6
110°	815.9	854.3	322.3	138.2	145.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	933.7	966.7	935.5	141.7	147.4
115°	1058.8	1090.1	1136.1	283.6	151.1
117.5°	1167.4	1204.2	1235.7	972.1	489.8
120°	1289.0	1316.5	1349.8	1371.9	1123.2
122.5°	1391.9	1421.5	1458.5	1469.4	1471.4
125°	1496.9	1521.0	1555.9	1568.9	1574.3
127.5°	1592.7	1618.5	1646.3	1664.6	1666.4
130°	1683.0	1712.5	1732.7	1753.0	1751.2
132.5°	1775.1	1799.1	1819.3	1835.9	1834.1
135°	1852.5	1882.0	1898.4	1917.0	1913.3
137.5°	1933.4	1955.5	1974.1	1992.4	1987.0
140°	2012.5	2027.4	2047.6	2064.2	2054.9
142.5°	2079.1	2091.9	2115.7	2130.4	2121.2
145°	2149.0	2147.0	2178.3	2191.2	2182.0
147.5°	2209.6	2204.1	2235.3	2244.6	2237.3
150°	2268.6	2255.7	2285.2	2296.1	2287.0
152.5°	2318.3	2303.6	2331.1	2342.3	2329.4
155°	2366.2	2349.8	2371.8	2382.7	2368.1
157.5°	2404.8	2390.2	2406.8	2419.7	2404.8
160°	2438.1	2427.0	2438.1	2449.0	2436.1
162.5°	2467.4	2456.5	2465.6	2478.5	2461.9
165°	2493.2	2482.3	2487.7	2500.6	2487.7
167.5°	2513.5	2502.4	2508.0	2520.9	2504.3
170°	2530.2	2518.9	2522.7	2535.6	2518.9
172.5°	2541.1	2530.2	2533.8	2546.7	2530.2
175°	2550.2	2537.3	2541.1	2553.9	2535.6
177.5°	2553.9	2541.1	2543.0	2555.9	2539.3
180°	2544.8	2544.8	2544.8	2544.8	2544.8

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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	5.72	6.41	6.85	7.53	9.09	5.29	5.98	6.42	7.10	8.67
	3H	7.36	7.98	8.50	9.11	10.68	6.89	7.51	8.03	8.64	10.22
	4H	7.93	8.52	9.08	9.65	11.23	7.47	8.05	8.61	9.18	10.77
	6H	8.32	8.86	9.47	9.99	11.58	7.85	8.39	9.00	9.52	11.11
	8H	8.41	8.93	9.57	10.07	11.66	7.94	8.46	9.10	9.61	11.19
	12H	8.45	8.94	9.61	10.08	11.69	7.98	8.46	9.14	9.61	11.22
4H	2H	6.16	6.74	7.31	7.87	9.46	5.82	6.40	6.97	7.53	9.12
	3H	8.00	8.49	9.16	9.64	11.24	7.61	8.10	8.77	9.25	10.85
	4H	8.70	9.15	9.86	10.29	11.91	8.30	8.75	9.46	9.89	11.51
	6H	9.19	9.58	10.36	10.75	12.35	8.79	9.18	9.96	10.34	11.95
	8H	9.33	9.69	10.50	10.85	12.48	8.93	9.29	10.10	10.45	12.07
	12H	9.40	9.72	10.58	10.89	12.52	8.98	9.31	10.16	10.48	12.10
8H	4H	8.88	9.24	10.04	10.40	12.02	8.52	8.88	9.69	10.04	11.66
	6H	9.49	9.79	10.68	10.99	12.61	9.13	9.43	10.32	10.63	12.25
	8H	9.70	9.96	10.89	11.14	12.78	9.34	9.60	10.53	10.78	12.41
	12H	9.82	10.05	11.02	11.22	12.89	9.44	9.67	10.64	10.84	12.52
12H	4H	8.85	9.18	10.04	10.35	11.98	8.50	8.83	9.69	10.00	11.63
	6H	9.52	9.77	10.71	10.95	12.59	9.17	9.43	10.36	10.61	12.25
	8H	9.74	9.97	10.94	11.15	12.82	9.39	9.62	10.59	10.79	12.46

END OF REPORT