

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: P926383

Luminaire Tested: DFN2DIP-TR4F0-040D080US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926383
REPORT IS A COMBINATION OF REPORTS P901961 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D080US950-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

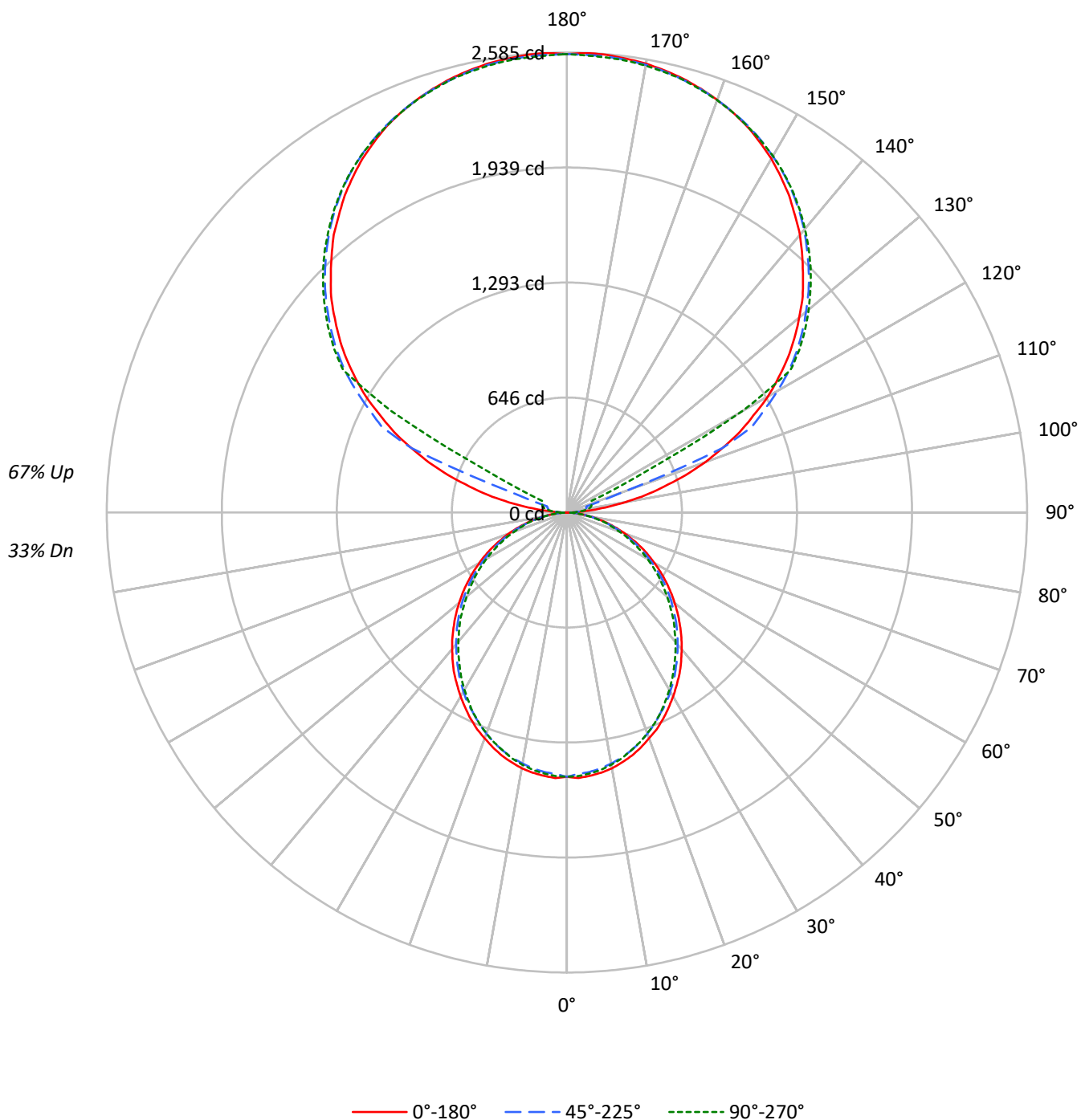
Lumens per Lamp: N/A
Luminaire Lumens: 11333.5 lumens
Efficiency: N/A
Efficacy: 124.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 91.1
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

TEST NUMBER: P926383

CATALOG NUMBER: DFN2DIP-TR4F0-040D080US950-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P926383

CATALOG NUMBER: DFN2DIP-TR4F0-040D080US950-FLONL

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	103	103	103	103	93	93	93	93	74	74	74		57	57	57		41
1	94	90	86	83	85	81	78	75	65	63	61		50	48	47		36
2	86	78	72	67	77	71	66	62	57	53	50		44	41	39		32
3	78	69	62	56	70	62	56	51	50	46	42		39	36	33		28
4	71	61	53	47	64	55	49	43	44	40	36		34	31	28		25
5	65	54	46	40	59	49	42	37	40	35	31		31	27	25		23
6	60	48	41	35	54	44	37	32	36	31	27		28	24	21		20
7	56	44	36	30	50	40	33	28	32	27	23		25	22	19		19
8	51	39	32	27	46	36	29	25	29	24	21		23	19	17		17
9	48	36	29	24	43	33	26	22	27	22	19		21	18	15		16
10	45	33	26	21	40	30	24	20	25	20	17		19	16	14		15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1180	1180	1180
5°	1181	1163	1171
10°	1172	1147	1155
15°	1155	1129	1130
20°	1131	1102	1105
25°	1108	1071	1075
30°	1079	1042	1038
35°	1052	1007	999
40°	1018	972	961
45°	984	938	923
50°	947	901	878
55°	909	859	837
60°	865	808	790
65°	817	756	735
70°	757	693	676
75°	673	617	621
80°	571	520	516
85°	414	353	342

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1369 cd/sqm

TEST NUMBER: P926383

CATALOG NUMBER: DFN2DIP-TR4F0-040D080US950-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.8	1.2
10°-20°	393.2	3.5
20°-30°	577.9	5.1
30°-40°	671.2	5.9
40°-50°	670.3	5.9
50°-60°	584.5	5.2
60°-70°	432.1	3.8
70°-80°	244.5	2.2
80°-90°	69.0	0.6
90°-100°	84.9	0.7
100°-110°	316.6	2.8
110°-120°	839.7	7.4
120°-130°	1392.7	12.3
130°-140°	1479.4	13.1
140°-150°	1374.9	12.1
150°-160°	1105.4	9.8
160°-170°	712.3	6.3
170°-180°	245.2	2.2
0°-30°	1110.8	9.8
0°-40°	1782.0	15.7
0°-60°	3036.8	26.8
0°-90°	3782.4	33.4
90°-120°	1241.3	11.0
90°-150°	5488.3	48.4
90°-180°	7551.0	66.6
0°-180°	11333.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1485	1485	1485	1485	1485	
5°	1485	1479	1463	1475	1472	141
15°	1413	1405	1386	1392	1385	398
25°	1279	1268	1244	1246	1244	589
35°	1104	1090	1067	1058	1051	689
45°	898	888	867	851	845	693
55°	680	671	654	637	630	608
65°	458	450	436	423	416	453
75°	240	237	230	221	224	256
85°	58	57	56	51	50	65
90°	2	22	37	47	50	10
95°	121	60	73	82	80	143
105°	567	623	114	134	142	605
115°	1072	1103	1150	287	153	1055
125°	1515	1540	1575	1588	1594	1351
135°	1875	1905	1922	1940	1936	1448
145°	2175	2173	2205	2218	2208	1360
155°	2395	2378	2401	2412	2397	1104
165°	2524	2512	2518	2531	2518	713
175°	2581	2568	2572	2585	2566	246
180°	2576	2576	2576	2576	2576	

TEST NUMBER: P926383

CATALOG NUMBER: DFN2DIP-TR4F0-040D080US950-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1484.8	1484.8	1484.8	1484.8	1484.8
2.5°	1493.5	1486.3	1470.6	1484.8	1482.1
5°	1484.8	1479.2	1463.4	1474.8	1472.1
7.5°	1474.8	1466.3	1450.6	1462.1	1459.2
10°	1459.2	1449.2	1432.1	1443.5	1439.2
12.5°	1437.7	1429.2	1412.1	1419.3	1416.3
15°	1413.4	1405.0	1386.4	1392.1	1385.0
17.5°	1383.5	1375.0	1356.4	1363.5	1356.4
20°	1350.6	1342.1	1322.1	1326.3	1320.8
22.5°	1317.9	1305.0	1286.4	1286.4	1283.5
25°	1279.2	1267.9	1243.6	1246.4	1243.6
27.5°	1236.4	1226.4	1208.0	1203.7	1196.6
30°	1193.6	1182.2	1160.8	1156.5	1150.8
32.5°	1147.9	1139.5	1116.6	1108.0	1102.2
35°	1103.7	1089.5	1066.6	1058.0	1050.8
37.5°	1053.7	1040.8	1017.9	1008.0	1000.8
40°	1002.4	990.8	967.9	955.2	949.5
42.5°	952.4	940.8	918.1	903.7	895.2
45°	898.1	888.2	866.6	851.1	845.2
47.5°	845.2	835.2	812.4	796.7	788.2
50°	789.5	782.4	762.4	742.4	735.2
52.5°	735.2	725.3	706.8	691.1	681.1
55°	679.7	671.0	654.0	636.8	629.7
57.5°	623.9	616.9	598.2	581.1	575.4
60°	568.2	562.6	542.6	526.9	522.6
62.5°	514.0	504.0	489.8	475.5	469.7
65°	458.4	449.7	435.5	422.6	415.6
67.5°	401.3	394.0	381.3	371.3	365.6
70°	348.4	342.7	329.8	319.8	314.2
72.5°	294.2	288.4	281.3	271.3	267.0
75°	239.8	237.1	229.8	221.3	224.2
77.5°	191.3	185.6	182.7	178.4	174.2
80°	142.8	141.3	138.4	134.2	131.4
82.5°	97.1	97.1	95.8	90.0	90.0
85°	58.5	57.1	55.7	51.3	50.0
87.5°	25.8	22.9	20.0	15.7	14.2
90°	1.8	22.3	37.2	46.7	50.3
92.5°	46.7	39.2	44.7	48.5	50.3
95°	121.1	59.5	72.6	82.1	80.1
97.5°	218.0	65.3	94.9	100.7	102.5
100°	330.0	74.6	106.3	121.1	124.8
102.5°	452.9	449.2	110.0	130.3	136.1
105°	566.6	622.6	113.7	134.1	141.7
107.5°	698.9	745.4	117.5	137.9	145.4
110°	825.8	864.7	326.3	139.9	147.2

TEST NUMBER: P926383

CATALOG NUMBER: DFN2DIP-TR4F0-040D080US950-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	945.0	978.4	946.8	143.4	149.2
115°	1071.6	1103.3	1150.0	287.1	152.9
117.5°	1181.6	1218.8	1250.7	984.0	495.8
120°	1304.7	1332.5	1366.2	1388.5	1136.9
122.5°	1408.9	1438.8	1476.2	1487.3	1489.3
125°	1515.1	1539.5	1574.9	1587.9	1593.5
127.5°	1612.1	1638.2	1666.4	1684.9	1686.7
130°	1703.5	1733.3	1753.7	1774.3	1772.5
132.5°	1796.7	1821.0	1841.4	1858.2	1856.4
135°	1875.0	1904.9	1921.5	1940.3	1936.5
137.5°	1956.9	1979.3	1998.1	2016.7	2011.1
140°	2037.0	2052.1	2072.5	2089.3	2079.9
142.5°	2104.3	2117.3	2141.4	2156.3	2147.0
145°	2175.1	2173.1	2204.8	2217.9	2208.5
147.5°	2236.5	2230.9	2262.5	2271.9	2264.5
150°	2296.2	2283.1	2313.0	2324.0	2314.8
152.5°	2346.5	2331.6	2359.4	2370.8	2357.7
155°	2394.9	2378.3	2400.6	2411.7	2396.9
157.5°	2434.0	2419.2	2436.0	2449.1	2434.0
160°	2467.7	2456.5	2467.7	2478.8	2465.7
162.5°	2497.4	2486.3	2495.6	2508.6	2491.8
165°	2523.5	2512.5	2518.0	2531.0	2518.0
167.5°	2544.0	2532.8	2538.5	2551.6	2534.8
170°	2560.9	2549.6	2553.4	2566.5	2549.6
172.5°	2572.0	2560.9	2564.6	2577.7	2560.9
175°	2581.2	2568.2	2572.0	2585.0	2566.5
177.5°	2585.0	2572.0	2573.9	2587.0	2570.2
180°	2575.7	2575.7	2575.7	2575.7	2575.7

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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	6.07	6.80	7.16	7.88	9.37	5.64	6.37	6.72	7.45	8.94
	3H	7.72	8.37	8.81	9.47	10.97	7.25	7.90	8.34	8.99	10.50
	4H	8.30	8.92	9.41	10.02	11.53	7.83	8.45	8.93	9.54	11.06
	6H	8.69	9.26	9.81	10.36	11.89	8.22	8.79	9.33	9.89	11.41
	8H	8.79	9.34	9.91	10.45	11.97	8.32	8.86	9.44	9.98	11.50
	12H	8.84	9.35	9.96	10.46	12.00	8.36	8.87	9.48	9.98	11.52
4H	2H	6.51	7.13	7.63	8.23	9.74	6.17	6.79	7.28	7.89	9.40
	3H	8.37	8.88	9.49	10.01	11.53	7.97	8.49	9.10	9.62	11.14
	4H	9.08	9.55	10.20	10.66	12.21	8.67	9.15	9.80	10.26	11.80
	6H	9.58	9.99	10.71	11.13	12.66	9.17	9.58	10.31	10.72	12.26
	8H	9.73	10.11	10.86	11.24	12.79	9.32	9.70	10.45	10.83	12.38
	12H	9.80	10.14	10.94	11.28	12.84	9.37	9.72	10.52	10.86	12.42
8H	4H	9.26	9.64	10.39	10.77	12.32	8.90	9.28	10.03	10.41	11.96
	6H	9.89	10.20	11.04	11.37	12.92	9.52	9.84	10.68	11.01	12.56
	8H	10.11	10.38	11.26	11.53	13.10	9.74	10.01	10.90	11.16	12.73
	12H	10.23	10.47	11.39	11.62	13.23	9.85	10.09	11.01	11.24	12.84
12H	4H	9.24	9.59	10.39	10.73	12.29	8.89	9.23	10.04	10.37	11.93
	6H	9.92	10.19	11.07	11.34	12.91	9.56	9.84	10.72	10.99	12.56
	8H	10.15	10.39	11.31	11.54	13.15	9.79	10.04	10.96	11.18	12.79

END OF REPORT