

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: P923465

Luminaire Tested: DFN2DIP-TR3F0-030D050US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923465
REPORT IS A COMBINATION OF REPORTS P901819 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-030D050US940-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

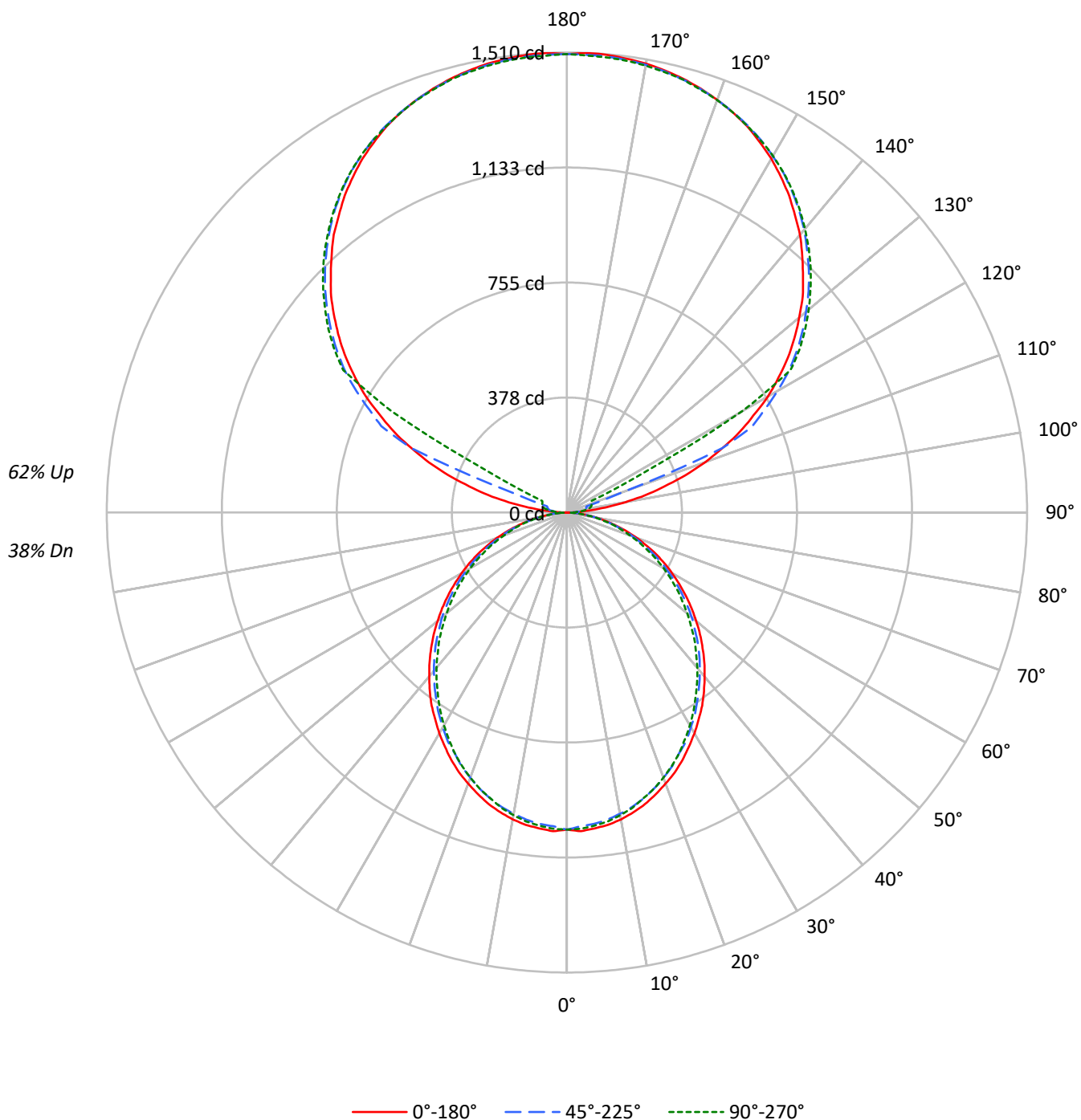
Lumens per Lamp: N/A
Luminaire Lumens: 7062.4 lumens
Efficiency: N/A
Efficacy: 115.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 61.1
Input Voltage (V): 120
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	104	104	104	104	94	94	94	94	76	76	76	60	60	60	45	45	45
1	95	91	87	83	86	82	79	76	67	65	63	53	51	50	39	39	38
2	86	79	73	68	78	72	67	63	59	55	52	46	44	42	35	33	32
3	79	70	62	57	71	63	57	52	52	47	44	41	38	35	31	29	27
4	72	62	54	48	65	56	49	44	46	41	37	36	33	30	27	25	23
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	22	20
6	61	49	41	35	55	45	38	33	37	32	28	29	26	23	22	20	18
7	56	44	36	31	51	40	34	29	33	28	24	27	23	20	20	18	16
8	52	40	32	27	47	37	30	25	30	25	22	24	21	18	19	16	14
9	48	36	29	24	44	33	27	23	28	23	19	22	19	16	17	15	13
10	45	33	26	22	41	31	24	20	26	21	17	21	17	14	16	13	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1297	1297	1297
5°	1298	1278	1287
10°	1287	1260	1269
15°	1268	1238	1240
20°	1241	1208	1212
25°	1215	1172	1179
30°	1182	1139	1137
35°	1151	1100	1093
40°	1113	1061	1051
45°	1075	1021	1007
50°	1034	980	958
55°	990	932	912
60°	941	875	859
65°	887	816	796
70°	819	744	729
75°	724	657	666
80°	609	547	547
85°	430	360	353

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1075 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.0	1.4
10°-20°	275.6	3.9
20°-30°	405.1	5.7
30°-40°	470.5	6.7
40°-50°	469.9	6.7
50°-60°	409.8	5.8
60°-70°	302.9	4.3
70°-80°	171.4	2.4
80°-90°	47.9	0.7
90°-100°	49.6	0.7
100°-110°	185.0	2.6
110°-120°	490.6	6.9
120°-130°	813.6	11.5
130°-140°	864.3	12.2
140°-150°	803.2	11.4
150°-160°	645.8	9.1
160°-170°	416.1	5.9
170°-180°	143.2	2.0
0°-30°	778.7	11.0
0°-40°	1249.2	17.7
0°-60°	2128.9	30.1
0°-90°	2651.0	37.5
90°-120°	725.2	10.3
90°-150°	3206.2	45.4
90°-180°	4411.0	62.5
0°-180°	7062.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1041	1041	1041	1041	1041	
5°	1041	1037	1026	1034	1032	99
15°	991	985	972	976	971	279
25°	897	889	872	874	872	413
35°	774	764	748	742	737	483
45°	630	623	608	597	592	486
55°	476	470	458	446	442	426
65°	321	315	305	296	291	318
75°	168	166	161	155	157	179
85°	41	40	39	36	35	46
90°	1	13	22	27	29	7
95°	71	35	42	48	47	84
105°	331	364	66	78	83	354
115°	626	644	672	168	89	616
125°	885	899	920	928	931	789
135°	1095	1113	1122	1134	1131	846
145°	1271	1270	1288	1296	1290	795
155°	1399	1389	1402	1409	1400	645
165°	1474	1468	1471	1478	1471	416
175°	1508	1500	1502	1510	1499	144
180°	1505	1505	1505	1505	1505	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1040.9	1040.9	1040.9	1040.9	1040.9
2.5°	1047.0	1042.0	1030.9	1040.9	1039.0
5°	1040.9	1037.0	1025.9	1033.9	1032.0
7.5°	1033.9	1028.0	1016.9	1025.0	1023.0
10°	1023.0	1015.9	1004.0	1011.9	1009.0
12.5°	1007.9	1001.9	990.0	994.9	992.9
15°	990.9	985.0	971.9	975.9	970.9
17.5°	969.8	963.9	950.8	955.8	950.8
20°	946.8	940.8	926.8	929.8	925.9
22.5°	923.9	914.9	901.8	901.8	899.7
25°	896.8	888.9	871.8	873.8	871.8
27.5°	866.7	859.7	846.8	843.8	838.8
30°	836.8	828.8	813.8	810.7	806.7
32.5°	804.8	798.8	782.7	776.7	772.7
35°	773.7	763.7	747.7	741.6	736.6
37.5°	738.7	729.7	713.6	706.6	701.6
40°	702.7	694.6	678.6	669.7	665.7
42.5°	667.6	659.6	643.6	633.6	627.6
45°	629.6	622.6	607.5	596.6	592.5
47.5°	592.5	585.6	569.5	558.5	552.5
50°	553.5	548.5	534.5	520.5	515.5
52.5°	515.5	508.5	495.5	484.5	477.4
55°	476.5	470.5	458.4	446.5	441.5
57.5°	437.4	432.4	419.4	407.3	403.3
60°	398.3	394.4	380.4	369.3	366.4
62.5°	360.3	353.3	343.3	333.3	329.3
65°	321.4	315.3	305.3	296.3	291.3
67.5°	281.3	276.3	267.2	260.3	256.3
70°	244.2	240.2	231.2	224.2	220.3
72.5°	206.3	202.2	197.2	190.2	187.3
75°	168.1	166.2	161.1	155.2	157.2
77.5°	134.1	130.1	128.0	125.1	122.2
80°	100.1	99.1	97.0	94.1	92.1
82.5°	68.0	68.0	67.1	63.0	63.0
85°	41.0	40.0	39.1	36.0	35.0
87.5°	18.0	16.1	14.0	11.1	10.0
90°	1.1	13.0	21.8	27.3	29.3
92.5°	27.3	22.9	26.1	28.4	29.3
95°	70.7	34.8	42.4	48.0	46.8
97.5°	127.3	38.2	55.5	58.9	59.8
100°	192.8	43.6	62.1	70.7	72.9
102.5°	264.6	262.4	64.3	76.2	79.5
105°	331.0	363.7	66.4	78.4	82.8
107.5°	408.3	435.4	68.7	80.5	85.0
110°	482.4	505.2	190.6	81.7	86.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	552.1	571.6	553.1	83.8	87.1
115°	626.1	644.5	671.8	167.7	89.3
117.5°	690.3	712.0	730.7	574.8	289.6
120°	762.1	778.5	798.1	811.2	664.1
122.5°	823.0	840.5	862.4	868.9	870.0
125°	885.1	899.4	920.1	927.6	930.9
127.5°	941.7	957.0	973.5	984.3	985.3
130°	995.1	1012.6	1024.5	1036.5	1035.5
132.5°	1049.6	1063.8	1075.7	1085.6	1084.5
135°	1095.4	1112.9	1122.5	1133.5	1131.3
137.5°	1143.2	1156.3	1167.2	1178.1	1174.9
140°	1190.0	1198.8	1210.7	1220.5	1215.1
142.5°	1229.3	1237.0	1251.1	1259.7	1254.3
145°	1270.7	1269.5	1288.0	1295.7	1290.2
147.5°	1306.5	1303.2	1321.8	1327.2	1322.9
150°	1341.4	1333.8	1351.2	1357.7	1352.3
152.5°	1370.7	1362.1	1378.4	1385.0	1377.3
155°	1399.1	1389.4	1402.4	1408.9	1400.3
157.5°	1421.9	1413.3	1423.1	1430.7	1421.9
160°	1441.6	1435.0	1441.6	1448.0	1440.5
162.5°	1458.9	1452.5	1457.9	1465.5	1455.7
165°	1474.2	1467.8	1471.0	1478.5	1471.0
167.5°	1486.2	1479.6	1483.0	1490.6	1480.8
170°	1496.0	1489.4	1491.7	1499.2	1489.4
172.5°	1502.5	1496.0	1498.3	1505.8	1496.0
175°	1508.0	1500.3	1502.5	1510.1	1499.2
177.5°	1510.1	1502.5	1503.7	1511.3	1501.5
180°	1504.7	1504.7	1504.7	1504.7	1504.7

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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	6.85	7.61	7.91	8.67	10.11	6.42	7.18	7.48	8.24	9.68
	3H	8.49	9.17	9.56	10.24	11.70	8.02	8.70	9.09	9.77	11.23
	4H	9.07	9.71	10.15	10.79	12.25	8.60	9.25	9.68	10.32	11.78
	6H	9.46	10.05	10.54	11.12	12.60	8.99	9.58	10.07	10.66	12.13
	8H	9.55	10.12	10.65	11.21	12.68	9.09	9.65	10.18	10.74	12.21
	12H	9.59	10.13	10.69	11.22	12.71	9.12	9.66	10.22	10.74	12.24
4H	2H	7.29	7.94	8.38	9.01	10.47	6.95	7.60	8.04	8.67	10.13
	3H	9.14	9.68	10.23	10.78	12.25	8.75	9.29	9.84	10.39	11.86
	4H	9.84	10.34	10.94	11.43	12.92	9.44	9.94	10.54	11.02	12.52
	6H	10.34	10.77	11.45	11.88	13.37	9.94	10.36	11.04	11.48	12.97
	8H	10.49	10.88	11.59	11.99	13.49	10.08	10.48	11.18	11.58	13.09
	12H	10.55	10.91	11.67	12.02	13.54	10.13	10.49	11.26	11.61	13.12
8H	4H	10.03	10.42	11.13	11.53	13.03	9.67	10.07	10.78	11.17	12.68
	6H	10.64	10.97	11.77	12.12	13.62	10.29	10.61	11.41	11.76	13.26
	8H	10.86	11.14	11.99	12.27	13.79	10.49	10.78	11.63	11.91	13.43
	12H	10.98	11.23	12.11	12.35	13.91	10.60	10.85	11.74	11.97	13.53
12H	4H	10.01	10.37	11.13	11.48	12.99	9.66	10.02	10.78	11.13	12.65
	6H	10.67	10.96	11.80	12.08	13.61	10.32	10.61	11.46	11.74	13.26
	8H	10.90	11.15	12.04	12.27	13.84	10.55	10.80	11.68	11.92	13.48