

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: P915459

Luminaire Tested: DFN2DIP-TR4F0-040D050US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915459
REPORT IS A COMBINATION OF REPORTS P901907 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D050US927-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

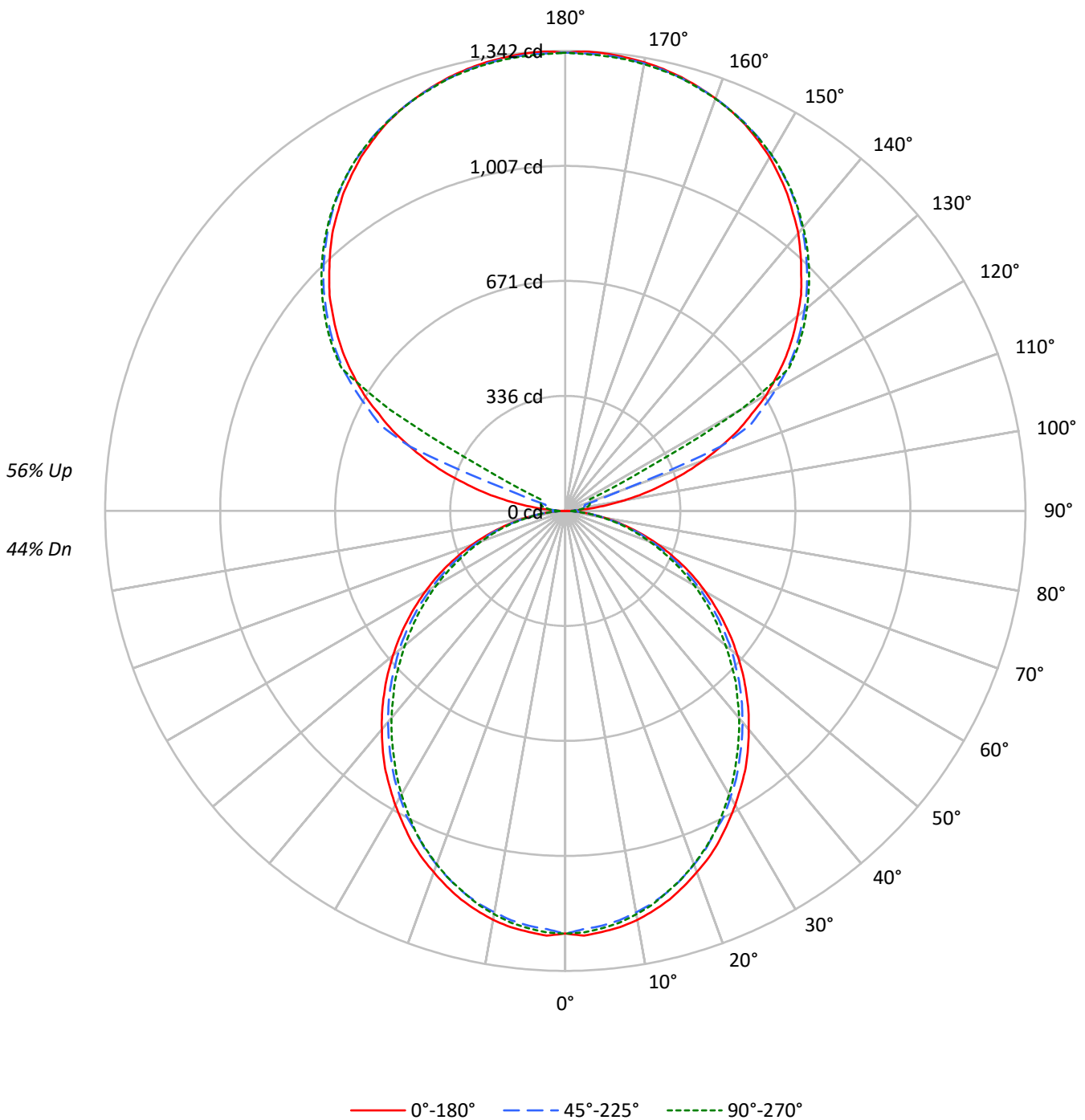
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7058.3 lumens
Efficiency: N/A
Efficacy: 101.1 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: General Diffuse

Input Watts (W): 69.8
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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44			44
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43	37			37
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	36	31			31
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31	27			27
4	73	63	55	49	67	58	51	46	48	43	39	40	36	33	31	29	27	23			23
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23	20			20
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20	17			17
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18	15			15
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16	14			14
9	49	37	30	25	45	35	28	23	29	24	20	25	20	18	20	17	15	12			12
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13	11			11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	980	980	980
5°	981	966	972
10°	973	953	959
15°	959	937	939
20°	939	915	918
25°	920	889	893
30°	896	865	862
35°	873	836	829
40°	845	807	798
45°	817	778	766
50°	787	748	729
55°	754	713	695
60°	718	671	656
65°	679	628	610
70°	628	575	561
75°	559	512	515
80°	475	431	428
85°	344	293	284

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 817 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.0	1.6
10°-20°	326.5	4.6
20°-30°	479.8	6.8
30°-40°	557.3	7.9
40°-50°	556.6	7.9
50°-60°	485.3	6.9
60°-70°	358.8	5.1
70°-80°	203.0	2.9
80°-90°	55.9	0.8
90°-100°	44.1	0.6
100°-110°	164.3	2.3
110°-120°	435.8	6.2
120°-130°	722.8	10.2
130°-140°	767.8	10.9
140°-150°	713.6	10.1
150°-160°	573.7	8.1
160°-170°	369.7	5.2
170°-180°	127.2	1.8
0°-30°	922.4	13.1
0°-40°	1479.7	21.0
0°-60°	2521.7	35.7
0°-90°	3139.4	44.5
90°-120°	644.2	9.1
90°-150°	2848.4	40.4
90°-180°	3919.0	55.5
0°-180°	7058.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1233	1233	1233	1233	1233	
5°	1233	1228	1215	1225	1222	117
15°	1174	1167	1151	1156	1150	331
25°	1062	1053	1033	1035	1033	489
35°	916	905	886	878	873	572
45°	746	738	720	707	702	576
55°	564	557	543	529	523	505
65°	381	373	362	351	345	376
75°	199	197	191	184	186	213
85°	49	48	46	43	42	54
90°	1	12	19	24	26	7
95°	63	31	38	43	42	74
105°	294	323	59	70	74	314
115°	556	573	597	149	79	548
125°	786	799	817	824	827	701
135°	973	989	997	1007	1005	752
145°	1129	1128	1144	1151	1146	706
155°	1243	1234	1246	1252	1244	573
165°	1310	1304	1307	1314	1307	370
175°	1340	1333	1335	1342	1332	127
180°	1337	1337	1337	1337	1337	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1233.0	1233.0	1233.0	1233.0	1233.0
2.5°	1240.2	1234.2	1221.1	1233.0	1230.7
5°	1233.0	1228.3	1215.2	1224.6	1222.4
7.5°	1224.6	1217.6	1204.5	1214.1	1211.7
10°	1211.7	1203.4	1189.2	1198.6	1195.1
12.5°	1193.8	1186.8	1172.6	1178.5	1176.1
15°	1173.7	1166.6	1151.2	1156.0	1150.1
17.5°	1148.8	1141.8	1126.3	1132.2	1126.3
20°	1121.5	1114.4	1097.9	1101.4	1096.8
22.5°	1094.3	1083.6	1068.2	1068.2	1065.8
25°	1062.2	1052.8	1032.7	1035.0	1032.7
27.5°	1026.7	1018.3	1003.1	999.5	993.6
30°	991.2	981.7	963.9	960.4	955.6
32.5°	953.2	946.2	927.2	920.0	915.2
35°	916.5	904.7	885.7	878.5	872.6
37.5°	875.0	864.3	845.3	837.0	831.1
40°	832.3	822.8	803.7	793.2	788.5
42.5°	790.8	781.2	762.4	750.4	743.4
45°	745.8	737.5	719.6	706.7	701.9
47.5°	701.9	693.6	674.6	661.6	654.5
50°	655.6	649.7	633.1	616.5	610.5
52.5°	610.5	602.3	586.9	573.9	565.5
55°	564.4	557.2	543.0	528.8	522.9
57.5°	518.1	512.2	496.7	482.5	477.8
60°	471.8	467.1	450.6	437.5	434.0
62.5°	426.8	418.5	406.7	394.8	390.1
65°	380.6	373.4	361.6	350.9	345.1
67.5°	333.2	327.2	316.6	308.3	303.6
70°	289.3	284.6	273.9	265.5	260.9
72.5°	244.3	239.5	233.6	225.3	221.7
75°	199.2	196.9	190.8	183.8	186.2
77.5°	158.8	154.1	151.7	148.1	144.7
80°	118.6	117.3	114.9	111.5	109.1
82.5°	80.6	80.6	79.5	74.7	74.7
85°	48.6	47.5	46.3	42.6	41.5
87.5°	21.4	19.0	16.6	13.1	11.8
90°	1.0	11.6	19.3	24.2	26.1
92.5°	24.2	20.4	23.2	25.2	26.1
95°	62.8	30.9	37.7	42.6	41.6
97.5°	113.1	33.9	49.3	52.3	53.2
100°	171.3	38.7	55.1	62.8	64.8
102.5°	235.0	233.1	57.1	67.7	70.7
105°	294.1	323.1	59.0	69.6	73.5
107.5°	362.7	386.8	61.0	71.5	75.5
110°	428.6	448.8	169.3	72.6	76.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	490.4	507.8	491.4	74.5	77.4
115°	556.2	572.6	596.8	149.0	79.4
117.5°	613.2	632.6	649.1	510.6	257.3
120°	677.1	691.6	709.0	720.6	590.0
122.5°	731.2	746.7	766.1	771.9	772.9
125°	786.3	799.0	817.4	824.1	827.0
127.5°	836.6	850.2	864.8	874.4	875.4
130°	884.1	899.6	910.1	920.8	920.0
132.5°	932.5	945.1	955.6	964.4	963.5
135°	973.1	988.6	997.2	1007.0	1005.0
137.5°	1015.6	1027.2	1037.0	1046.6	1043.8
140°	1057.2	1065.0	1075.5	1084.3	1079.5
142.5°	1092.1	1098.9	1111.4	1119.1	1114.3
145°	1128.9	1127.8	1144.2	1151.0	1146.2
147.5°	1160.7	1157.8	1174.3	1179.1	1175.3
150°	1191.7	1184.9	1200.4	1206.2	1201.3
152.5°	1217.7	1210.1	1224.6	1230.4	1223.6
155°	1242.9	1234.3	1245.9	1251.6	1244.0
157.5°	1263.2	1255.5	1264.2	1271.1	1263.2
160°	1280.7	1274.9	1280.7	1286.4	1279.7
162.5°	1296.1	1290.4	1295.1	1301.9	1293.2
165°	1309.6	1303.9	1306.8	1313.5	1306.8
167.5°	1320.3	1314.5	1317.5	1324.2	1315.5
170°	1329.0	1323.2	1325.2	1331.9	1323.2
172.5°	1334.8	1329.0	1331.0	1337.8	1329.0
175°	1339.7	1332.8	1334.8	1341.6	1331.9
177.5°	1341.6	1334.8	1335.9	1342.6	1333.9
180°	1336.7	1336.7	1336.7	1336.7	1336.7



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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	6.66	7.48	7.66	8.49	9.84	6.23	7.04	7.23	8.06	9.41
	3H	8.32	9.05	9.33	10.07	11.44	7.85	8.58	8.86	9.60	10.97
	4H	8.90	9.59	9.93	10.62	12.00	8.43	9.12	9.46	10.15	11.52
	6H	9.30	9.94	10.34	10.97	12.36	8.83	9.46	9.86	10.49	11.88
	8H	9.40	10.01	10.45	11.06	12.44	8.93	9.54	9.97	10.58	11.97
	12H	9.45	10.03	10.50	11.07	12.48	8.97	9.55	10.02	10.59	12.00
4H	2H	7.12	7.81	8.15	8.83	10.21	6.77	7.46	7.81	8.49	9.87
	3H	8.98	9.56	10.02	10.61	12.00	8.59	9.16	9.63	10.22	11.61
	4H	9.69	10.22	10.74	11.27	12.68	9.29	9.81	10.33	10.86	12.27
	6H	10.20	10.66	11.26	11.73	13.13	9.79	10.25	10.85	11.32	12.72
	8H	10.35	10.78	11.41	11.84	13.26	9.94	10.36	11.00	11.43	12.85
	12H	10.42	10.81	11.50	11.88	13.31	10.00	10.39	11.08	11.46	12.89
8H	4H	9.88	10.31	10.94	11.37	12.79	9.52	9.95	10.58	11.01	12.43
	6H	10.51	10.86	11.60	11.97	13.39	10.15	10.50	11.23	11.61	13.02
	8H	10.73	11.04	11.82	12.13	13.57	10.37	10.67	11.45	11.76	13.20
	12H	10.86	11.13	11.96	12.22	13.70	10.48	10.75	11.57	11.83	13.31
12H	4H	9.87	10.25	10.94	11.33	12.75	9.52	9.90	10.59	10.97	12.40
	6H	10.54	10.85	11.63	11.94	13.38	10.19	10.50	11.28	11.59	13.03
	8H	10.78	11.05	11.88	12.14	13.61	10.43	10.70	11.52	11.78	13.26