

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: P920915

Luminaire Tested: DFN2DIP-TR4F0-040D050US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920915
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-TR4F0-040D050US935-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

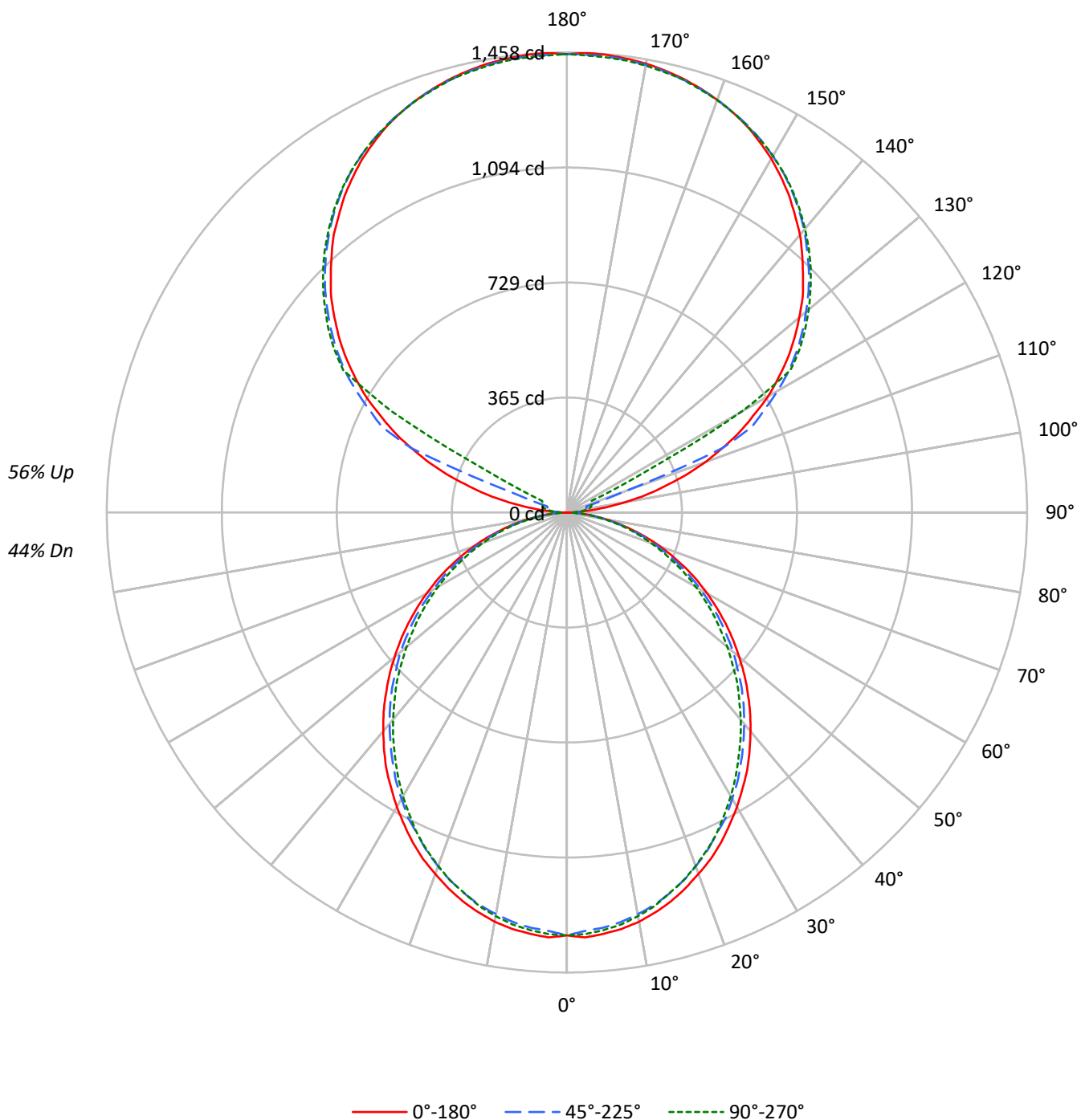
Lumens per Lamp: N/A
Luminaire Lumens: 7671.5 lumens
Efficiency: N/A
Efficacy: 109.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

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

TEST NUMBER: P920915

CATALOG NUMBER: DFN2DIP-TR4F0-040D050US935-FLLONL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-TR4F0-040D050US935-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	30	10
RCR																	
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	36
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31
4	73	63	55	49	67	58	51	46	48	43	39	40	36	33	31	29	27
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16
9	49	37	30	25	45	35	28	23	29	24	20	25	20	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1065	1065	1065
5°	1066	1050	1057
10°	1058	1036	1042
15°	1042	1019	1020
20°	1021	995	997
25°	1000	966	971
30°	974	940	937
35°	949	909	901
40°	919	878	868
45°	888	846	833
50°	855	813	793
55°	820	775	756
60°	781	729	713
65°	738	682	664
70°	683	625	610
75°	607	557	560
80°	516	469	466
85°	373	318	308

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 888 cd/sqm

TEST NUMBER: P920915

CATALOG NUMBER: DFN2DIP-TR4F0-040D050US935-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.1	1.6
10°-20°	354.9	4.6
20°-30°	521.5	6.8
30°-40°	605.7	7.9
40°-50°	605.0	7.9
50°-60°	527.5	6.9
60°-70°	389.9	5.1
70°-80°	220.6	2.9
80°-90°	60.8	0.8
90°-100°	47.9	0.6
100°-110°	178.6	2.3
110°-120°	473.7	6.2
120°-130°	785.6	10.2
130°-140°	834.5	10.9
140°-150°	775.6	10.1
150°-160°	623.5	8.1
160°-170°	401.8	5.2
170°-180°	138.3	1.8
0°-30°	1002.5	13.1
0°-40°	1608.3	21.0
0°-60°	2740.7	35.7
0°-90°	3412.1	44.5
90°-120°	700.2	9.1
90°-150°	3095.8	40.4
90°-180°	4259.0	55.5
0°-180°	7671.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1340	1340	1340	1340	1340	
5°	1340	1335	1321	1331	1329	127
15°	1276	1268	1251	1256	1250	359
25°	1154	1144	1122	1125	1122	531
35°	996	983	963	955	948	622
45°	810	802	782	768	763	626
55°	614	606	590	575	568	548
65°	414	406	393	381	375	409
75°	216	214	207	200	202	231
85°	53	52	50	46	45	59
90°	1	13	21	26	28	7
95°	68	34	41	46	45	81
105°	320	351	64	76	80	342
115°	604	622	649	162	86	595
125°	855	868	888	896	899	762
135°	1058	1074	1084	1094	1092	817
145°	1227	1226	1244	1251	1246	767
155°	1351	1342	1354	1360	1352	622
165°	1423	1417	1420	1428	1420	402
175°	1456	1449	1451	1458	1448	139
180°	1453	1453	1453	1453	1453	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1340.1	1340.1	1340.1	1340.1	1340.1
2.5°	1347.9	1341.4	1327.2	1340.1	1337.6
5°	1340.1	1335.0	1320.8	1331.0	1328.6
7.5°	1331.0	1323.4	1309.1	1319.6	1317.0
10°	1317.0	1307.9	1292.5	1302.8	1298.9
12.5°	1297.5	1289.9	1274.4	1280.9	1278.2
15°	1275.7	1268.0	1251.2	1256.4	1250.0
17.5°	1248.6	1241.0	1224.2	1230.5	1224.2
20°	1218.9	1211.3	1193.3	1197.0	1192.1
22.5°	1189.4	1177.8	1161.0	1161.0	1158.4
25°	1154.5	1144.3	1122.4	1124.9	1122.4
27.5°	1115.9	1106.8	1090.2	1086.3	1079.9
30°	1077.3	1066.9	1047.7	1043.8	1038.6
32.5°	1036.0	1028.4	1007.7	1000.0	994.7
35°	996.1	983.3	962.6	954.8	948.4
37.5°	951.0	939.3	918.7	909.7	903.3
40°	904.7	894.2	873.6	862.1	857.0
42.5°	859.5	849.1	828.6	815.6	808.0
45°	810.5	801.6	782.1	768.1	762.8
47.5°	762.8	753.8	733.2	719.0	711.4
50°	712.6	706.1	688.1	670.0	663.6
52.5°	663.6	654.6	637.9	623.7	614.7
55°	613.5	605.6	590.2	574.7	568.3
57.5°	563.1	556.7	539.8	524.4	519.3
60°	512.8	507.7	489.7	475.5	471.7
62.5°	463.9	454.9	442.0	429.1	424.0
65°	413.7	405.9	393.0	381.4	375.1
67.5°	362.1	355.6	344.1	335.1	329.9
70°	314.4	309.3	297.6	288.6	283.5
72.5°	265.5	260.3	253.9	244.9	241.0
75°	216.5	214.0	207.4	199.8	202.3
77.5°	172.6	167.5	164.9	161.0	157.2
80°	128.9	127.5	124.9	121.1	118.6
82.5°	87.6	87.6	86.4	81.2	81.2
85°	52.8	51.6	50.3	46.3	45.1
87.5°	23.2	20.7	18.1	14.2	12.8
90°	1.0	12.6	21.0	26.3	28.3
92.5°	26.3	22.1	25.2	27.4	28.3
95°	68.3	33.6	41.0	46.3	45.2
97.5°	123.0	36.9	53.6	56.8	57.8
100°	186.1	42.1	59.9	68.3	70.4
102.5°	255.5	253.4	62.1	73.5	76.8
105°	319.6	351.2	64.1	75.7	79.9
107.5°	394.3	420.4	66.3	77.7	82.1
110°	465.8	487.8	184.0	78.9	83.0

TEST NUMBER: P920915

CATALOG NUMBER: DFN2DIP-TR4F0-040D050US935-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	533.0	551.9	534.1	80.9	84.1
115°	604.5	622.3	648.7	162.0	86.3
117.5°	666.5	687.5	705.5	555.0	279.7
120°	735.9	751.7	770.6	783.2	641.3
122.5°	794.7	811.6	832.7	839.0	840.1
125°	854.6	868.4	888.4	895.7	898.9
127.5°	909.3	924.0	940.0	950.4	951.4
130°	960.9	977.7	989.2	1000.8	999.9
132.5°	1013.5	1027.2	1038.6	1048.2	1047.1
135°	1057.6	1074.5	1083.8	1094.5	1092.3
137.5°	1103.8	1116.5	1127.0	1137.6	1134.5
140°	1149.0	1157.5	1169.0	1178.4	1173.3
142.5°	1187.0	1194.4	1208.0	1216.3	1211.1
145°	1226.9	1225.8	1243.6	1251.0	1245.8
147.5°	1261.5	1258.3	1276.3	1281.5	1277.4
150°	1295.2	1287.9	1304.7	1311.0	1305.7
152.5°	1323.5	1315.2	1330.9	1337.3	1329.9
155°	1350.9	1341.5	1354.1	1360.4	1352.0
157.5°	1372.9	1364.6	1374.1	1381.5	1372.9
160°	1392.0	1385.6	1392.0	1398.2	1390.9
162.5°	1408.7	1402.5	1407.6	1415.0	1405.6
165°	1423.4	1417.2	1420.3	1427.6	1420.3
167.5°	1435.0	1428.7	1431.9	1439.2	1429.8
170°	1444.5	1438.1	1440.3	1447.6	1438.1
172.5°	1450.8	1444.5	1446.6	1454.0	1444.5
175°	1456.0	1448.6	1450.8	1458.1	1447.6
177.5°	1458.1	1450.8	1451.9	1459.2	1449.7
180°	1452.8	1452.8	1452.8	1452.8	1452.8

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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	6.95	7.76	7.95	8.78	10.13	6.52	7.33	7.52	8.35	9.69
	3H	8.61	9.34	9.62	10.36	11.73	8.14	8.86	9.15	9.89	11.26
	4H	9.19	9.88	10.22	10.91	12.29	8.72	9.41	9.75	10.44	11.81
	6H	9.59	10.23	10.63	11.26	12.65	9.11	9.75	10.15	10.78	12.17
	8H	9.69	10.30	10.73	11.35	12.73	9.22	9.82	10.26	10.87	12.26
	12H	9.74	10.32	10.79	11.36	12.76	9.26	9.84	10.31	10.88	12.28
4H	2H	7.41	8.10	8.44	9.12	10.50	7.06	7.75	8.09	8.78	10.16
	3H	9.27	9.85	10.31	10.90	12.29	8.88	9.45	9.92	10.51	11.90
	4H	9.98	10.51	11.03	11.55	12.97	9.58	10.10	10.62	11.15	12.56
	6H	10.49	10.95	11.55	12.02	13.42	10.08	10.54	11.14	11.61	13.01
	8H	10.64	11.07	11.70	12.13	13.55	10.23	10.65	11.29	11.72	13.14
	12H	10.71	11.10	11.79	12.17	13.60	10.29	10.67	11.37	11.75	13.18
8H	4H	10.17	10.60	11.23	11.66	13.08	9.81	10.24	10.87	11.30	12.72
	6H	10.80	11.15	11.88	12.26	13.68	10.44	10.79	11.52	11.89	13.31
	8H	11.02	11.33	12.11	12.42	13.86	10.65	10.96	11.74	12.05	13.49
	12H	11.15	11.42	12.24	12.51	13.98	10.77	11.04	11.86	12.12	13.60
12H	4H	10.16	10.54	11.23	11.62	13.04	9.81	10.19	10.88	11.26	12.69
	6H	10.83	11.14	11.92	12.23	13.67	10.48	10.79	11.57	11.88	13.31
	8H	11.07	11.34	12.16	12.42	13.90	10.71	10.99	11.81	12.07	13.55

END OF REPORT