

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: P920701

Luminaire Tested: DFN2DIP-TR2F0-050D050US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920701
REPORT IS A COMBINATION OF REPORTS P901777 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-050D050US935-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

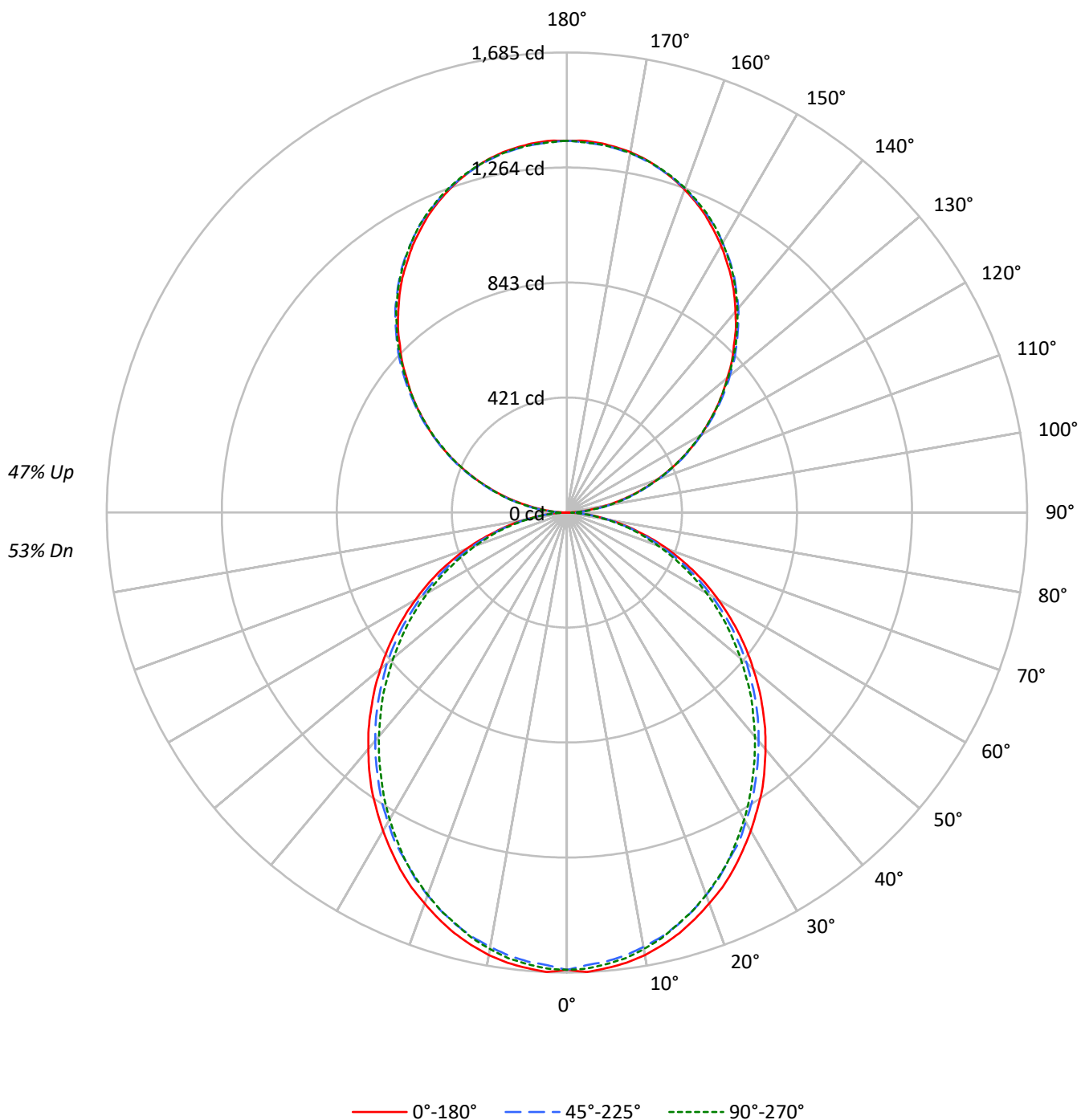
Lumens per Lamp: N/A
Luminaire Lumens: 8071.8 lumens
Efficiency: N/A
Efficacy: 93.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 86
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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
RCR																				
0	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	53		
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50	45		
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42	37		
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36	32		
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31	27		
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27	24		
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24	21		
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21	18		
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19	16		
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17	15		
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15	13		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3736	3736	3736
5°	3737	3676	3703
10°	3701	3618	3646
15°	3641	3550	3561
20°	3562	3459	3475
25°	3483	3352	3376
30°	3385	3252	3252
35°	3293	3134	3121
40°	3179	3016	2996
45°	3066	2897	2868
50°	2942	2771	2720
55°	2812	2627	2582
60°	2664	2456	2425
65°	2502	2278	2239
70°	2296	2061	2038
75°	2013	1800	1844
80°	1669	1469	1490
85°	1138	926	926

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3066 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.7	2.0
10°-20°	443.6	5.5
20°-30°	651.9	8.1
30°-40°	757.2	9.4
40°-50°	756.2	9.4
50°-60°	659.4	8.2
60°-70°	487.4	6.0
70°-80°	275.8	3.4
80°-90°	76.7	0.9
90°-100°	84.2	1.0
100°-110°	267.7	3.3
110°-120°	458.1	5.7
120°-130°	602.5	7.5
130°-140°	676.3	8.4
140°-150°	663.1	8.2
150°-160°	556.3	6.9
160°-170°	368.9	4.6
170°-180°	128.9	1.6
0°-30°	1253.2	15.5
0°-40°	2010.3	24.9
0°-60°	3425.9	42.4
0°-90°	4265.8	52.8
90°-120°	810.0	10.0
90°-150°	2751.9	34.1
90°-180°	3806.0	47.2
0°-180°	8071.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1675	1675	1675	1675	1675	
5°	1675	1669	1651	1664	1661	159
15°	1595	1585	1564	1570	1562	449
25°	1443	1430	1403	1406	1403	664
35°	1245	1229	1203	1194	1186	778
45°	1013	1002	978	960	954	782
55°	767	757	738	718	710	686
65°	517	507	491	477	469	511
75°	270	267	259	250	253	289
85°	66	64	63	58	56	74
90°	1	15	40	38	39	8
95°	60	72	73	73	72	67
105°	247	250	253	255	255	261
115°	460	466	464	463	460	455
125°	669	679	676	672	671	598
135°	865	878	880	879	876	669
145°	1050	1058	1065	1066	1061	656
155°	1201	1204	1208	1213	1210	553
165°	1306	1305	1305	1313	1307	368
175°	1359	1356	1353	1362	1354	129
180°	1362	1362	1362	1362	1362	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1675.1	1675.1	1675.1	1675.1	1675.1
2.5°	1684.8	1676.8	1659.1	1675.1	1672.1
5°	1675.1	1668.8	1651.0	1663.8	1660.8
7.5°	1663.8	1654.2	1636.5	1649.5	1646.2
10°	1646.2	1634.9	1615.7	1628.4	1623.7
12.5°	1621.9	1612.4	1593.1	1601.1	1597.8
15°	1594.6	1585.0	1564.0	1570.5	1562.5
17.5°	1560.7	1551.2	1530.2	1538.2	1530.2
20°	1523.7	1514.2	1491.6	1496.3	1490.0
22.5°	1486.8	1472.2	1451.2	1451.2	1447.9
25°	1443.2	1430.4	1403.0	1406.1	1403.0
27.5°	1394.8	1383.5	1362.7	1357.9	1349.9
30°	1346.6	1333.7	1309.6	1304.8	1298.3
32.5°	1295.0	1285.5	1259.6	1249.9	1243.5
35°	1245.1	1229.1	1203.2	1193.5	1185.5
37.5°	1188.7	1174.2	1148.4	1137.1	1129.1
40°	1130.8	1117.8	1092.0	1077.6	1071.2
42.5°	1074.4	1061.4	1035.8	1019.5	1010.0
45°	1013.2	1001.9	977.7	960.1	953.6
47.5°	953.6	942.3	916.5	898.7	889.2
50°	890.7	882.7	860.1	837.6	829.5
52.5°	829.5	818.2	797.4	779.6	768.4
55°	766.8	757.1	737.7	718.4	710.4
57.5°	703.9	695.9	674.9	655.6	649.0
60°	641.0	634.7	612.2	594.3	589.6
62.5°	579.9	568.6	552.5	536.4	529.9
65°	517.1	507.4	491.3	476.8	468.7
67.5°	452.7	444.5	430.2	418.9	412.3
70°	393.0	386.6	372.0	360.8	354.5
72.5°	331.9	325.4	317.4	306.1	301.3
75°	270.5	267.4	259.2	249.7	253.0
77.5°	215.9	209.3	206.1	201.3	196.6
80°	161.2	159.5	156.2	151.4	148.2
82.5°	109.5	109.5	108.0	101.5	101.5
85°	66.0	64.4	62.9	57.9	56.4
87.5°	29.0	25.8	22.6	17.7	16.1
90°	1.2	14.8	40.2	37.8	39.0
92.5°	25.5	34.4	35.7	36.9	36.9
95°	59.9	71.5	73.4	73.4	71.5
97.5°	99.7	110.4	114.9	114.9	114.9
100°	145.7	155.2	158.4	158.4	157.2
102.5°	194.2	201.1	205.6	206.9	205.6
105°	247.1	250.4	252.9	254.9	254.9
107.5°	299.6	304.5	304.5	305.4	299.6
110°	350.5	357.1	357.1	357.1	353.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	405.5	412.5	411.3	408.0	405.5
115°	459.7	466.3	464.3	463.0	459.7
117.5°	513.5	522.5	516.8	513.5	510.2
120°	567.7	576.7	567.7	567.7	564.0
122.5°	616.9	628.4	622.7	619.4	616.9
125°	668.7	678.9	675.6	671.9	670.7
127.5°	719.1	731.8	727.4	722.4	719.1
130°	766.4	781.1	779.0	776.6	772.1
132.5°	819.3	830.8	831.6	825.9	822.6
135°	864.9	877.5	880.0	878.8	875.5
137.5°	915.8	926.0	928.1	927.2	922.3
140°	960.4	970.8	976.5	976.5	972.0
142.5°	1006.4	1016.8	1020.0	1021.2	1016.8
145°	1050.0	1058.2	1064.7	1066.0	1061.4
147.5°	1089.0	1099.2	1104.1	1106.2	1101.6
150°	1129.2	1136.2	1140.6	1144.4	1140.6
152.5°	1164.9	1171.9	1177.6	1182.2	1177.6
155°	1200.6	1203.8	1207.5	1213.3	1209.6
157.5°	1231.4	1233.8	1235.9	1244.1	1238.4
160°	1258.9	1261.4	1262.6	1269.5	1264.6
162.5°	1284.4	1284.4	1285.6	1293.4	1287.6
165°	1306.1	1304.8	1304.8	1313.1	1307.3
167.5°	1325.8	1322.1	1322.1	1330.3	1324.6
170°	1340.6	1337.3	1336.1	1344.3	1337.3
172.5°	1350.8	1347.5	1346.3	1354.5	1347.5
175°	1359.1	1355.7	1353.3	1361.5	1354.5
177.5°	1363.6	1360.3	1357.8	1364.8	1357.8
180°	1361.5	1361.5	1361.5	1361.5	1361.5

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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	11.98	12.87	12.91	13.82	15.05	11.56	12.45	12.49	13.40	14.63
	3H	13.62	14.42	14.56	15.38	16.63	13.16	13.96	14.10	14.91	16.17
	4H	14.19	14.95	15.15	15.91	17.17	13.73	14.49	14.69	15.45	16.71
	6H	14.58	15.27	15.55	16.24	17.51	14.12	14.81	15.09	15.78	17.05
	8H	14.67	15.33	15.65	16.32	17.59	14.21	14.88	15.19	15.86	17.13
	12H	14.71	15.34	15.69	16.32	17.62	14.25	14.88	15.23	15.86	17.16
4H	2H	12.44	13.19	13.40	14.15	15.42	12.10	12.85	13.06	13.81	15.08
	3H	14.28	14.91	15.25	15.90	17.18	13.89	14.52	14.87	15.52	16.79
	4H	14.97	15.55	15.96	16.54	17.84	14.58	15.15	15.56	16.14	17.44
	6H	15.47	15.96	16.46	16.97	18.27	15.07	15.57	16.07	16.58	17.88
	8H	15.61	16.07	16.60	17.07	18.39	15.21	15.67	16.21	16.68	17.99
	12H	15.67	16.09	16.69	17.11	18.43	15.27	15.68	16.28	16.70	18.02
8H	4H	15.16	15.63	16.16	16.63	17.94	14.81	15.27	15.81	16.28	17.59
	6H	15.77	16.15	16.79	17.20	18.51	15.42	15.80	16.44	16.84	18.15
	8H	15.97	16.31	17.00	17.34	18.67	15.62	15.95	16.65	16.99	18.32
	12H	16.09	16.39	17.12	17.41	18.79	15.72	16.02	16.75	17.04	18.42
12H	4H	15.15	15.57	16.16	16.58	17.90	14.80	15.22	15.82	16.24	17.56
	6H	15.79	16.13	16.82	17.16	18.49	15.45	15.79	16.48	16.82	18.15
	8H	16.02	16.32	17.05	17.34	18.72	15.67	15.97	16.71	17.00	18.37