

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: P918556

Luminaire Tested: DFN2DIP-4P3F0-020D050US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918556
REPORT IS A COMBINATION OF REPORTS P899060 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D050US935-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

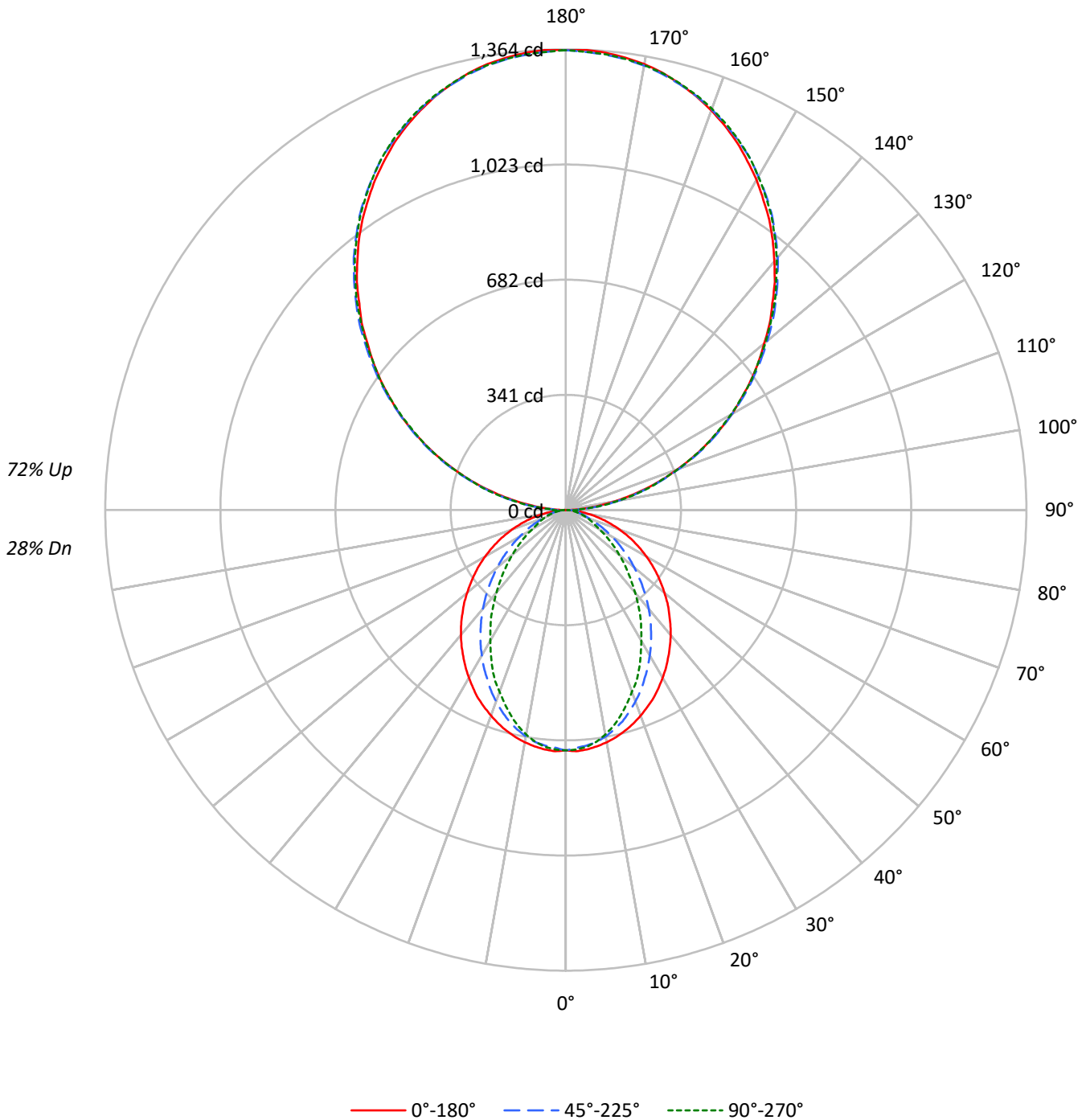
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5273.6 lumens
Efficiency: N/A
Efficacy: 98.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 53.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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				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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	36	36	36	28
1	93	89	85	82	83	80	77	74	62	60	59	47	45	44	32	31	31	31	31	31	24
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	28	27	26	26	26	26	20
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	25	24	23	23	23	23	18
4	71	61	53	48	63	55	48	44	43	39	35	33	30	27	23	21	20	20	20	20	15
5	65	54	47	41	58	49	42	37	39	34	31	29	26	24	21	19	17	17	17	17	14
6	60	49	41	35	54	44	37	32	35	30	27	27	23	21	19	17	15	15	15	15	12
7	55	44	36	31	50	40	33	28	32	27	23	24	21	19	17	15	14	14	14	14	11
8	51	40	32	27	46	36	30	25	29	24	21	22	19	16	16	14	12	12	12	12	10
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11	11	11	11	9
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10	10	10	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	811	811	811
5°	812	798	803
10°	803	781	777
15°	792	755	736
20°	777	719	686
25°	761	679	638
30°	740	637	577
35°	720	593	524
40°	699	547	463
45°	676	496	407
50°	651	445	353
55°	625	390	301
60°	595	333	247
65°	560	275	223
70°	518	221	201
75°	465	194	182
80°	389	161	157
85°	263	105	116

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1366 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.7	1.3
10°-20°	183.1	3.5
20°-30°	257.1	4.9
30°-40°	280.2	5.3
40°-50°	257.6	4.9
50°-60°	202.3	3.8
60°-70°	131.7	2.5
70°-80°	67.8	1.3
80°-90°	21.2	0.4
90°-100°	84.2	1.6
100°-110°	267.7	5.1
110°-120°	458.1	8.7
120°-130°	602.5	11.4
130°-140°	676.3	12.8
140°-150°	663.1	12.6
150°-160°	556.3	10.5
160°-170°	368.9	7.0
170°-180°	128.9	2.4
0°-30°	506.9	9.6
0°-40°	787.1	14.9
0°-60°	1247.0	23.6
0°-90°	1467.6	27.8
90°-120°	810.0	15.4
90°-150°	2751.9	52.2
90°-180°	3806.0	72.2
0°-180°	5273.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	712	712	712	712	712	
5°	712	708	700	706	704	67
15°	677	670	648	636	629	191
25°	614	594	551	525	515	283
35°	529	497	440	399	385	331
45°	433	390	322	276	261	334
55°	329	279	209	171	158	294
65°	222	170	112	90	88	220
75°	118	73	52	47	46	125
85°	28	14	12	12	12	32
90°	1	15	40	38	39	5
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°	711.7	711.7	711.7	711.7	711.7
2.5°	714.9	711.7	704.6	711.1	709.8
5°	711.7	708.5	700.1	705.9	704.0
7.5°	705.9	702.1	693.0	695.6	692.3
10°	698.2	693.6	680.8	678.8	675.0
12.5°	688.5	682.7	665.3	661.5	654.4
15°	676.9	669.8	647.9	635.7	629.3
17.5°	663.4	653.1	626.0	611.8	601.6
20°	647.9	635.0	602.9	586.8	572.6
22.5°	631.2	616.4	579.0	557.2	547.5
25°	614.5	593.8	551.3	525.0	515.2
27.5°	594.5	572.6	525.6	495.2	480.4
30°	573.3	548.7	497.2	464.4	446.9
32.5°	552.6	523.0	470.2	431.5	415.4
35°	529.4	496.6	440.0	399.3	385.1
37.5°	506.9	471.4	411.6	367.1	351.0
40°	483.0	444.4	381.9	336.2	319.4
42.5°	458.6	417.4	352.3	304.6	288.6
45°	432.8	389.6	322.1	276.3	260.8
47.5°	408.4	362.7	293.1	247.3	233.2
50°	381.3	335.6	264.8	220.2	206.8
52.5°	354.8	306.5	237.6	195.2	183.0
55°	329.1	278.9	209.3	170.7	158.4
57.5°	302.7	251.2	184.3	148.2	137.8
60°	275.7	224.1	157.8	125.0	114.7
62.5°	249.3	197.8	135.3	104.4	99.2
65°	222.2	170.0	112.1	90.2	88.3
67.5°	196.5	144.2	90.2	79.2	77.3
70°	169.4	119.2	74.6	68.3	65.7
72.5°	143.6	95.9	62.4	57.3	56.1
75°	118.5	73.4	51.5	47.0	46.4
77.5°	93.4	52.2	40.6	38.0	36.7
80°	70.2	37.4	30.9	28.3	28.3
82.5°	48.9	25.1	21.3	20.0	20.0
85°	27.6	14.1	12.2	12.2	12.2
87.5°	10.3	5.2	5.2	4.5	4.5
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	3.84	4.52	4.97	5.64	7.20	0.00	0.48	0.94	1.60	3.16
	3H	5.50	6.11	6.64	7.24	8.81	0.98	1.58	2.11	2.71	4.28
	4H	6.10	6.68	7.25	7.81	9.38	1.41	1.99	2.56	3.12	4.70
	6H	6.51	7.04	7.67	8.17	9.76	1.72	2.25	2.88	3.38	4.97
	8H	6.63	7.13	7.79	8.28	9.86	1.80	2.31	2.96	3.45	5.04
	12H	6.69	7.16	7.85	8.30	9.91	1.84	2.32	3.00	3.46	5.06
4H	2H	3.84	4.41	5.00	5.54	7.12	0.38	0.95	1.54	2.08	3.66
	3H	5.65	6.13	6.81	7.28	8.87	1.71	2.19	2.87	3.34	4.93
	4H	6.33	6.77	7.50	7.92	9.53	2.24	2.68	3.41	3.83	5.44
	6H	6.83	7.21	8.00	8.38	9.98	2.65	3.02	3.82	4.19	5.79
	8H	7.00	7.36	8.17	8.51	10.13	2.77	3.12	3.94	4.28	5.90
	12H	7.09	7.41	8.27	8.58	10.20	2.82	3.14	4.01	4.31	5.93
8H	4H	6.29	6.64	7.45	7.80	9.41	2.51	2.86	3.68	4.02	5.64
	6H	6.84	7.13	8.03	8.33	9.95	3.01	3.30	4.20	4.50	6.12
	8H	7.06	7.31	8.25	8.49	10.12	3.20	3.45	4.39	4.63	6.26
	12H	7.18	7.40	8.38	8.58	10.25	3.31	3.53	4.50	4.70	6.37
12H	4H	6.23	6.55	7.41	7.72	9.34	2.51	2.83	3.69	3.99	5.62
	6H	6.82	7.07	8.01	8.25	9.88	3.06	3.31	4.25	4.49	6.12
	8H	7.03	7.25	8.22	8.42	10.09	3.26	3.48	4.45	4.66	6.32