

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: P915854

Luminaire Tested: DFN2DIP-4P3F0-040D020US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915854
REPORT IS A COMBINATION OF REPORTS P899033 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-040D020US930-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

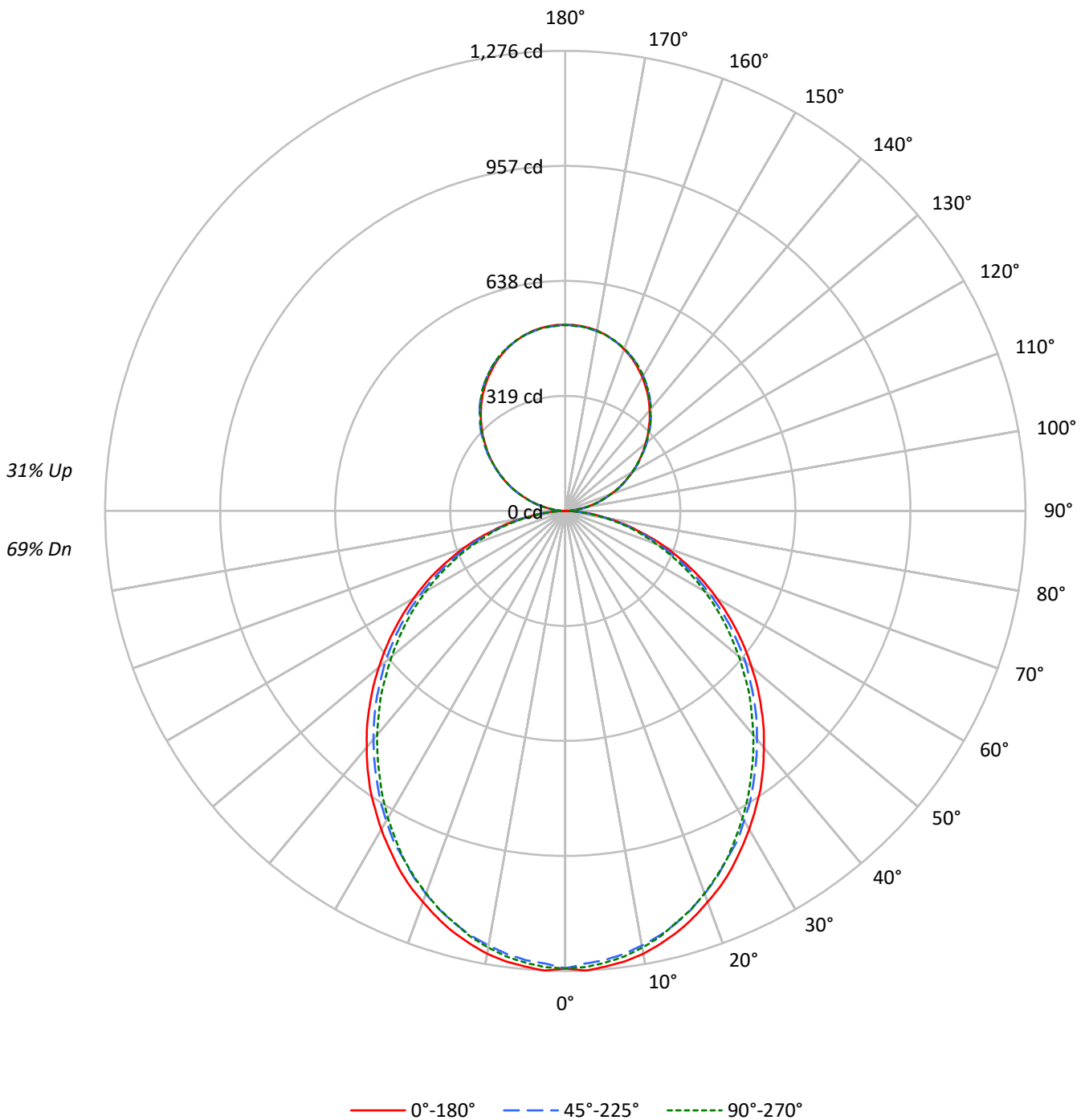
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4671.7 lumens
Efficiency: N/A
Efficacy: 88.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 53
Input Voltage (V):
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				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	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74	69				69
1	102	98	94	90	96	92	89	86	83	80	77	74	71	70	65	64	62	58				58
2	93	85	79	74	88	81	75	70	72	68	64	65	61	58	57	55	52	49				49
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	48	45	41				41
4	78	67	58	52	73	63	56	50	57	51	46	51	46	42	46	42	39	35				35
5	71	59	51	45	67	56	49	43	51	45	40	46	41	37	41	37	34	31				31
6	66	53	45	39	62	51	43	38	46	40	35	41	36	32	37	33	30	27				27
7	61	48	40	34	58	46	39	33	42	35	31	38	33	29	34	30	26	24				24
8	57	44	36	31	54	42	35	30	38	32	28	35	29	26	31	27	24	22				22
9	53	40	33	27	50	39	31	26	35	29	25	32	27	23	29	25	21	19				19
10	50	37	30	25	47	36	29	24	32	27	22	30	25	21	27	23	20	18				18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1446	1446	1446
5°	1447	1425	1435
10°	1435	1405	1415
15°	1413	1381	1384
20°	1383	1348	1353
25°	1354	1308	1316
30°	1318	1272	1270
35°	1283	1228	1222
40°	1240	1185	1175
45°	1198	1141	1128
50°	1152	1095	1072
55°	1103	1042	1022
60°	1048	979	964
65°	988	913	895
70°	911	834	821
75°	805	738	752
80°	676	616	622
85°	477	408	407

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1198 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.4	2.6
10°-20°	336.0	7.2
20°-30°	493.8	10.6
30°-40°	573.6	12.3
40°-50°	572.9	12.3
50°-60°	499.5	10.7
60°-70°	369.3	7.9
70°-80°	208.9	4.5
80°-90°	56.6	1.2
90°-100°	31.9	0.7
100°-110°	101.4	2.2
110°-120°	173.5	3.7
120°-130°	228.2	4.9
130°-140°	256.1	5.5
140°-150°	251.2	5.4
150°-160°	210.7	4.5
160°-170°	139.7	3.0
170°-180°	48.8	1.0
0°-30°	949.3	20.3
0°-40°	1522.9	32.6
0°-60°	2595.3	55.6
0°-90°	3230.1	69.1
90°-120°	306.8	6.6
90°-150°	1042.3	22.3
90°-180°	1442.0	30.9
0°-180°	4671.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1269	1269	1269	1269	1269	
5°	1269	1264	1251	1260	1258	120
15°	1208	1201	1185	1190	1184	340
25°	1093	1084	1063	1065	1063	503
35°	943	931	912	904	898	589
45°	768	759	741	727	722	592
55°	581	574	559	544	538	519
65°	392	384	372	361	355	387
75°	205	203	196	189	192	219
85°	50	49	48	44	43	56
90°	0	6	15	14	15	4
95°	23	27	28	28	27	25
105°	94	95	96	96	96	99
115°	174	177	176	175	174	172
125°	253	257	256	254	254	226
135°	328	332	333	333	332	253
145°	398	401	403	404	402	248
155°	455	456	457	460	458	209
165°	495	494	494	497	495	140
175°	515	514	513	516	513	49
180°	516	516	516	516	516	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1268.9	1268.9	1268.9	1268.9	1268.9
2.5°	1276.3	1270.2	1256.8	1268.9	1266.6
5°	1268.9	1264.1	1250.7	1260.4	1258.1
7.5°	1260.4	1253.1	1239.7	1249.5	1247.1
10°	1247.1	1238.5	1223.9	1233.6	1230.0
12.5°	1228.7	1221.4	1206.8	1212.9	1210.4
15°	1207.9	1200.7	1184.8	1189.7	1183.6
17.5°	1182.3	1175.1	1159.2	1165.2	1159.2
20°	1154.2	1147.0	1129.9	1133.5	1128.8
22.5°	1126.3	1115.2	1099.3	1099.3	1096.9
25°	1093.2	1083.5	1062.8	1065.2	1062.8
27.5°	1056.6	1048.1	1032.3	1028.7	1022.6
30°	1020.1	1010.3	992.1	988.4	983.5
32.5°	981.0	973.8	954.2	946.9	941.9
35°	943.2	931.1	911.5	904.2	898.1
37.5°	900.5	889.5	869.9	861.4	855.3
40°	856.6	846.8	827.2	816.4	811.5
42.5°	813.9	804.0	784.6	772.3	765.1
45°	767.5	759.0	740.6	727.3	722.4
47.5°	722.4	713.8	694.3	680.9	673.6
50°	674.7	668.6	651.6	634.5	628.4
52.5°	628.4	619.9	604.1	590.6	582.0
55°	580.9	573.5	558.9	544.2	538.2
57.5°	533.2	527.2	511.2	496.6	491.7
60°	485.6	480.8	463.7	450.3	446.6
62.5°	439.3	430.7	418.6	406.3	401.5
65°	391.8	384.3	372.2	361.2	355.1
67.5°	342.9	336.7	325.9	317.3	312.4
70°	297.7	292.9	281.8	273.3	268.5
72.5°	251.4	246.5	240.4	231.9	228.2
75°	205.0	202.6	196.4	189.1	191.6
77.5°	163.5	158.6	156.1	152.5	148.9
80°	122.1	120.7	118.3	114.7	112.3
82.5°	83.0	83.0	81.9	76.9	76.9
85°	50.0	48.8	47.6	43.9	42.7
87.5°	22.0	19.6	17.1	13.5	12.1
90°	0.5	5.6	15.2	14.3	14.8
92.5°	9.6	13.0	13.5	14.0	14.0
95°	22.7	27.1	27.8	27.8	27.1
97.5°	37.7	41.8	43.5	43.5	43.5
100°	55.2	58.8	60.0	60.0	59.5
102.5°	73.5	76.1	77.9	78.4	77.9
105°	93.6	94.8	95.8	96.5	96.5
107.5°	113.5	115.4	115.4	115.7	113.5
110°	132.8	135.3	135.3	135.3	134.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	153.6	156.2	155.8	154.5	153.6
115°	174.1	176.6	175.9	175.4	174.1
117.5°	194.5	198.0	195.8	194.5	193.2
120°	215.0	218.4	215.0	215.0	213.6
122.5°	233.7	238.0	235.9	234.6	233.7
125°	253.2	257.1	255.9	254.5	254.0
127.5°	272.4	277.2	275.5	273.6	272.4
130°	290.2	295.9	295.1	294.2	292.4
132.5°	310.3	314.7	314.9	312.8	311.5
135°	327.6	332.4	333.3	332.9	331.6
137.5°	346.8	350.7	351.6	351.2	349.4
140°	363.8	367.7	369.9	369.9	368.2
142.5°	381.2	385.1	386.4	386.8	385.1
145°	397.7	400.8	403.3	403.7	402.0
147.5°	412.5	416.4	418.2	419.0	417.3
150°	427.7	430.3	432.0	433.4	432.0
152.5°	441.2	443.8	446.0	447.8	446.0
155°	454.8	456.0	457.4	459.6	458.2
157.5°	466.4	467.3	468.1	471.2	469.0
160°	476.9	477.8	478.3	480.9	479.0
162.5°	486.5	486.5	486.9	489.9	487.7
165°	494.7	494.2	494.2	497.3	495.2
167.5°	502.1	500.8	500.8	503.9	501.7
170°	507.8	506.5	506.1	509.2	506.5
172.5°	511.7	510.4	510.0	513.1	510.4
175°	514.8	513.6	512.6	515.7	513.1
177.5°	516.5	515.3	514.3	516.9	514.3
180°	515.7	515.7	515.7	515.7	515.7



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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	10.12	11.19	10.90	11.98	12.95	9.68	10.74	10.45	11.54	12.51
	3H	11.79	12.75	12.58	13.56	14.55	11.30	12.26	12.09	13.07	14.06
	4H	12.39	13.29	13.19	14.10	15.11	11.89	12.80	12.70	13.61	14.62
	6H	12.79	13.63	13.61	14.45	15.47	12.29	13.13	13.11	13.95	14.97
	8H	12.90	13.70	13.73	14.54	15.56	12.40	13.20	13.23	14.04	15.06
	12H	12.96	13.71	13.79	14.55	15.60	12.45	13.20	13.28	14.04	15.09
4H	2H	10.60	11.51	11.41	12.32	13.33	10.25	11.15	11.06	11.97	12.98
	3H	12.48	13.24	13.30	14.08	15.11	12.08	12.83	12.90	13.68	14.70
	4H	13.20	13.89	14.04	14.73	15.79	12.78	13.46	13.61	14.31	15.36
	6H	13.72	14.32	14.57	15.19	16.25	13.29	13.89	14.14	14.76	15.81
	8H	13.88	14.43	14.73	15.30	16.37	13.44	13.99	14.29	14.86	15.93
	12H	13.96	14.46	14.83	15.34	16.42	13.51	14.01	14.38	14.89	15.97
8H	4H	13.41	13.97	14.26	14.83	15.90	13.03	13.59	13.89	14.45	15.52
	6H	14.04	14.50	14.93	15.41	16.48	13.66	14.12	14.54	15.03	16.10
	8H	14.26	14.67	15.16	15.57	16.66	13.87	14.28	14.76	15.18	16.27
	12H	14.40	14.76	15.30	15.65	16.80	13.99	14.35	14.89	15.24	16.39
12H	4H	13.40	13.91	14.28	14.79	15.87	13.04	13.54	13.91	14.42	15.50
	6H	14.07	14.48	14.97	15.38	16.47	13.70	14.11	14.59	15.01	16.10
	8H	14.32	14.68	15.22	15.57	16.72	13.94	14.30	14.84	15.19	16.34