

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: P918533

Luminaire Tested: DFN2DIP-4P2F0-040D020US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918533
REPORT IS A COMBINATION OF REPORTS P900536 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D020US935-RLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

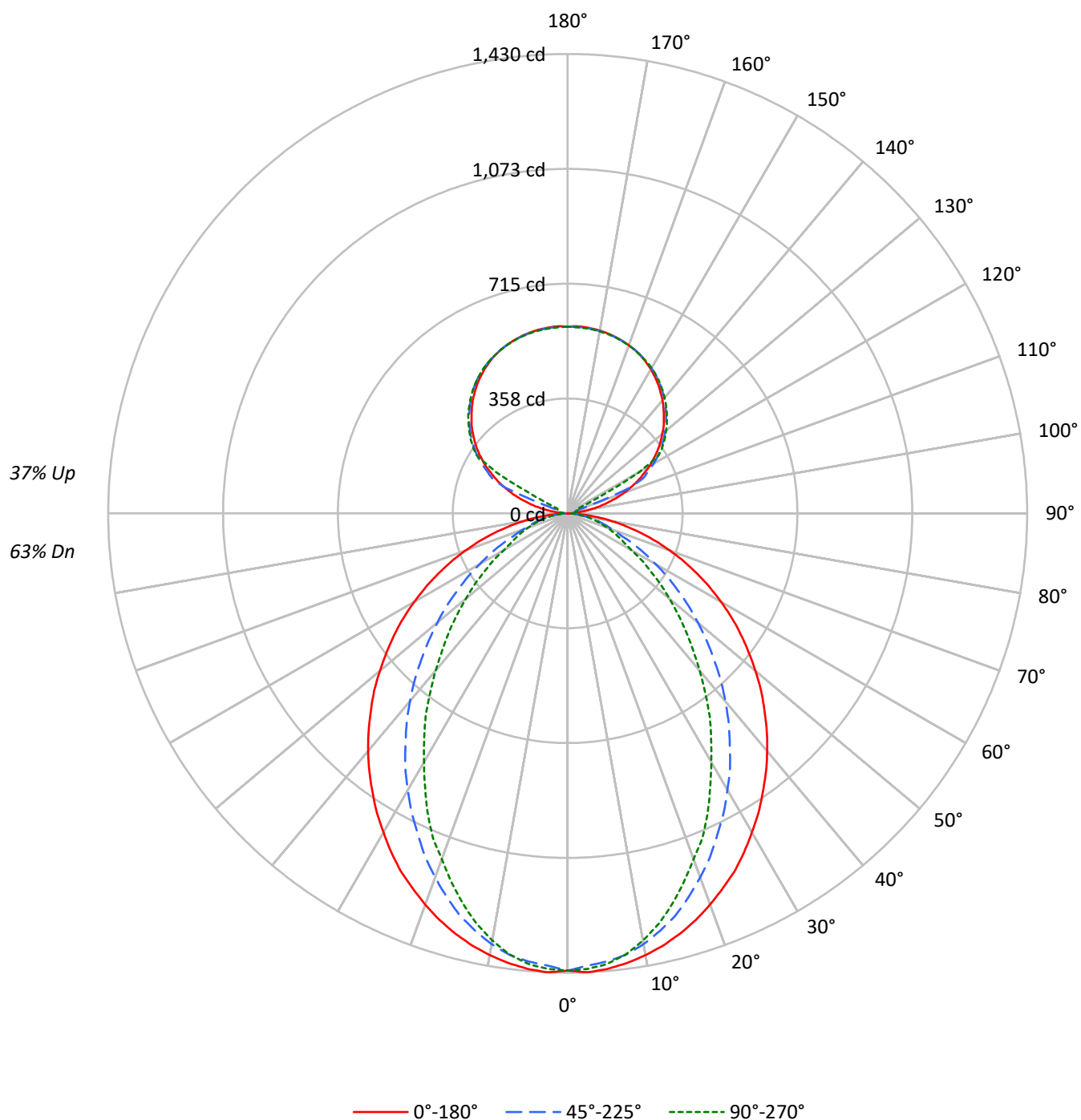
Lumens per Lamp: N/A
Luminaire Lumens: 4632.1 lumens
Efficiency: N/A
Efficacy: 82.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 56.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	53	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3564	3564	3564
5°	3563	3499	3524
10°	3521	3421	3404
15°	3465	3299	3221
20°	3394	3135	2999
25°	3321	2952	2784
30°	3225	2766	2515
35°	3131	2567	2277
40°	3035	2362	2007
45°	2924	2135	1762
50°	2809	1907	1523
55°	2688	1665	1294
60°	2548	1414	1060
65°	2386	1158	947
70°	2190	921	849
75°	1942	795	761
80°	1589	642	642
85°	1026	396	454

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2924 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.4	2.9
10°-20°	366.2	7.9
20°-30°	514.2	11.1
30°-40°	560.5	12.1
40°-50°	515.1	11.1
50°-60°	404.5	8.7
60°-70°	263.3	5.7
70°-80°	135.6	2.9
80°-90°	35.6	0.8
90°-100°	19.2	0.4
100°-110°	71.4	1.5
110°-120°	189.5	4.1
120°-130°	314.2	6.8
130°-140°	333.8	7.2
140°-150°	310.2	6.7
150°-160°	249.4	5.4
160°-170°	160.7	3.5
170°-180°	55.3	1.2
0°-30°	1013.8	21.9
0°-40°	1574.2	34.0
0°-60°	2493.9	53.8
0°-90°	2928.4	63.2
90°-120°	280.0	6.0
90°-150°	1238.3	26.7
90°-180°	1704.0	36.8
0°-180°	4632.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1423	1423	1423	1423	1423	
5°	1423	1417	1400	1412	1408	135
15°	1354	1340	1296	1271	1259	382
25°	1229	1188	1103	1050	1030	565
35°	1059	993	880	799	770	663
45°	866	779	644	553	522	668
55°	658	558	419	341	317	588
65°	444	340	224	180	176	441
75°	237	147	103	94	93	251
85°	55	28	24	24	24	64
90°	0	5	8	10	11	4
95°	27	13	16	18	18	32
105°	128	140	26	30	32	137
115°	242	249	260	65	34	238
125°	342	347	355	358	360	305
135°	423	430	434	438	437	327
145°	491	490	498	500	498	307
155°	540	537	542	544	541	249
165°	569	567	568	571	568	161
175°	582	580	580	583	579	55
180°	581	581	581	581	581	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1423.4	1423.4	1423.4	1423.4	1423.4
2.5°	1429.9	1423.4	1409.2	1422.2	1419.5
5°	1423.4	1416.9	1400.2	1411.8	1408.0
7.5°	1411.8	1404.1	1386.1	1391.1	1384.7
10°	1396.4	1387.3	1361.6	1357.6	1350.0
12.5°	1377.1	1365.5	1330.6	1322.9	1308.7
15°	1353.8	1339.6	1295.9	1271.4	1258.6
17.5°	1326.8	1306.1	1252.0	1223.7	1203.1
20°	1295.9	1270.1	1205.7	1173.5	1145.1
22.5°	1262.4	1232.8	1158.0	1114.2	1095.0
25°	1228.9	1187.7	1102.6	1049.9	1030.4
27.5°	1189.0	1145.1	1051.1	990.6	960.9
30°	1146.5	1097.4	994.4	928.8	894.0
32.5°	1105.3	1045.9	940.4	863.1	830.8
35°	1058.9	993.2	879.9	798.7	770.2
37.5°	1013.8	942.9	823.1	734.2	702.1
40°	966.1	888.9	763.9	672.4	638.9
42.5°	917.1	834.7	704.6	609.2	577.1
45°	865.6	779.3	644.1	552.6	521.7
47.5°	816.7	725.3	586.2	494.6	466.3
50°	762.6	671.1	529.4	440.5	413.5
52.5°	709.7	613.1	475.4	390.3	365.8
55°	658.2	557.8	418.6	341.4	316.9
57.5°	605.5	502.4	368.4	296.3	275.7
60°	551.3	448.2	315.6	249.9	229.4
62.5°	498.6	395.5	270.4	208.7	198.5
65°	444.4	340.0	224.1	180.4	176.4
67.5°	393.0	288.5	180.4	158.4	154.5
70°	338.8	238.3	149.4	136.6	131.3
72.5°	287.3	191.9	124.9	114.7	112.1
75°	236.9	146.8	103.1	94.0	92.8
77.5°	186.8	104.3	81.2	76.0	73.4
80°	140.3	74.7	61.7	56.7	56.7
82.5°	97.9	50.3	42.5	39.9	39.9
85°	55.4	28.3	24.5	24.5	24.5
87.5°	20.7	10.2	10.2	9.0	9.0
90°	0.4	5.1	8.4	10.5	11.4
92.5°	10.5	8.9	10.1	10.9	11.4
95°	27.3	13.4	16.4	18.5	18.1
97.5°	49.2	14.7	21.4	22.7	23.2
100°	74.5	16.8	23.9	27.3	28.2
102.5°	102.2	101.3	24.8	29.4	30.7
105°	127.9	140.4	25.7	30.2	31.9
107.5°	157.7	168.2	26.5	31.1	32.8
110°	186.3	195.1	73.6	31.6	33.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	213.2	220.8	213.6	32.4	33.7
115°	241.8	248.9	259.5	64.7	34.5
117.5°	266.6	275.0	282.1	222.1	111.8
120°	294.4	300.7	308.2	313.3	256.5
122.5°	317.9	324.6	333.0	335.5	336.0
125°	341.9	347.3	355.3	358.3	359.6
127.5°	363.8	369.6	376.0	380.1	380.6
130°	384.3	391.1	395.7	400.4	399.9
132.5°	405.4	410.9	415.4	419.2	418.9
135°	423.1	429.8	433.5	437.8	437.0
137.5°	441.5	446.6	450.8	455.0	453.7
140°	459.6	463.0	467.6	471.4	469.3
142.5°	474.8	477.8	483.2	486.5	484.4
145°	490.8	490.3	497.5	500.4	498.3
147.5°	504.6	503.3	510.5	512.6	510.9
150°	518.1	515.1	521.9	524.3	522.3
152.5°	529.4	526.1	532.4	534.9	531.9
155°	540.4	536.6	541.7	544.2	540.8
157.5°	549.2	545.9	549.7	552.6	549.2
160°	556.8	554.2	556.8	559.3	556.4
162.5°	563.4	560.9	563.1	566.0	562.2
165°	569.4	566.9	568.1	571.1	568.1
167.5°	574.0	571.4	572.7	575.7	571.9
170°	577.8	575.2	576.1	579.0	575.2
172.5°	580.3	577.8	578.7	581.6	577.8
175°	582.4	579.5	580.3	583.2	579.0
177.5°	583.2	580.3	580.7	583.7	579.9
180°	581.2	581.2	581.2	581.2	581.2

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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	12.58	13.53	13.42	14.39	15.46	8.54	9.49	9.38	10.35	11.42
	3H	14.24	15.10	15.10	15.96	17.06	9.72	10.57	10.57	11.44	12.54
	4H	14.84	15.65	15.71	16.52	17.63	10.16	10.96	11.03	11.84	12.95
	6H	15.25	15.99	16.14	16.87	18.00	10.47	11.21	11.35	12.09	13.21
	8H	15.37	16.08	16.26	16.98	18.10	10.55	11.26	11.44	12.15	13.28
	12H	15.43	16.10	16.33	16.99	18.14	10.59	11.26	11.49	12.15	13.30
4H	2H	12.61	13.41	13.48	14.29	15.40	9.14	9.94	10.02	10.82	11.93
	3H	14.42	15.09	15.31	16.00	17.12	10.48	11.14	11.36	12.05	13.17
	4H	15.10	15.71	16.00	16.61	17.76	11.01	11.62	11.91	12.52	13.67
	6H	15.60	16.12	16.51	17.05	18.20	11.41	11.94	12.33	12.86	14.02
	8H	15.77	16.25	16.68	17.17	18.34	11.53	12.02	12.45	12.94	14.11
	12H	15.85	16.29	16.79	17.23	18.40	11.59	12.03	12.53	12.97	14.14
8H	4H	15.07	15.56	15.99	16.48	17.65	11.29	11.77	12.20	12.70	13.86
	6H	15.62	16.02	16.56	16.98	18.15	11.78	12.18	12.72	13.15	14.31
	8H	15.82	16.18	16.77	17.13	18.31	11.96	12.31	12.91	13.27	14.45
	12H	15.95	16.26	16.90	17.21	18.44	12.06	12.38	13.02	13.32	14.56
12H	4H	15.03	15.47	15.96	16.41	17.58	11.29	11.73	12.23	12.67	13.84
	6H	15.59	15.95	16.54	16.90	18.09	11.82	12.18	12.78	13.14	14.32
	8H	15.80	16.11	16.75	17.06	18.30	12.02	12.34	12.98	13.28	14.52