

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: P913122

Luminaire Tested: DFN2DIP-4P3F0-030D060US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913122
REPORT IS A COMBINATION OF REPORTS P899071 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D060US927-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

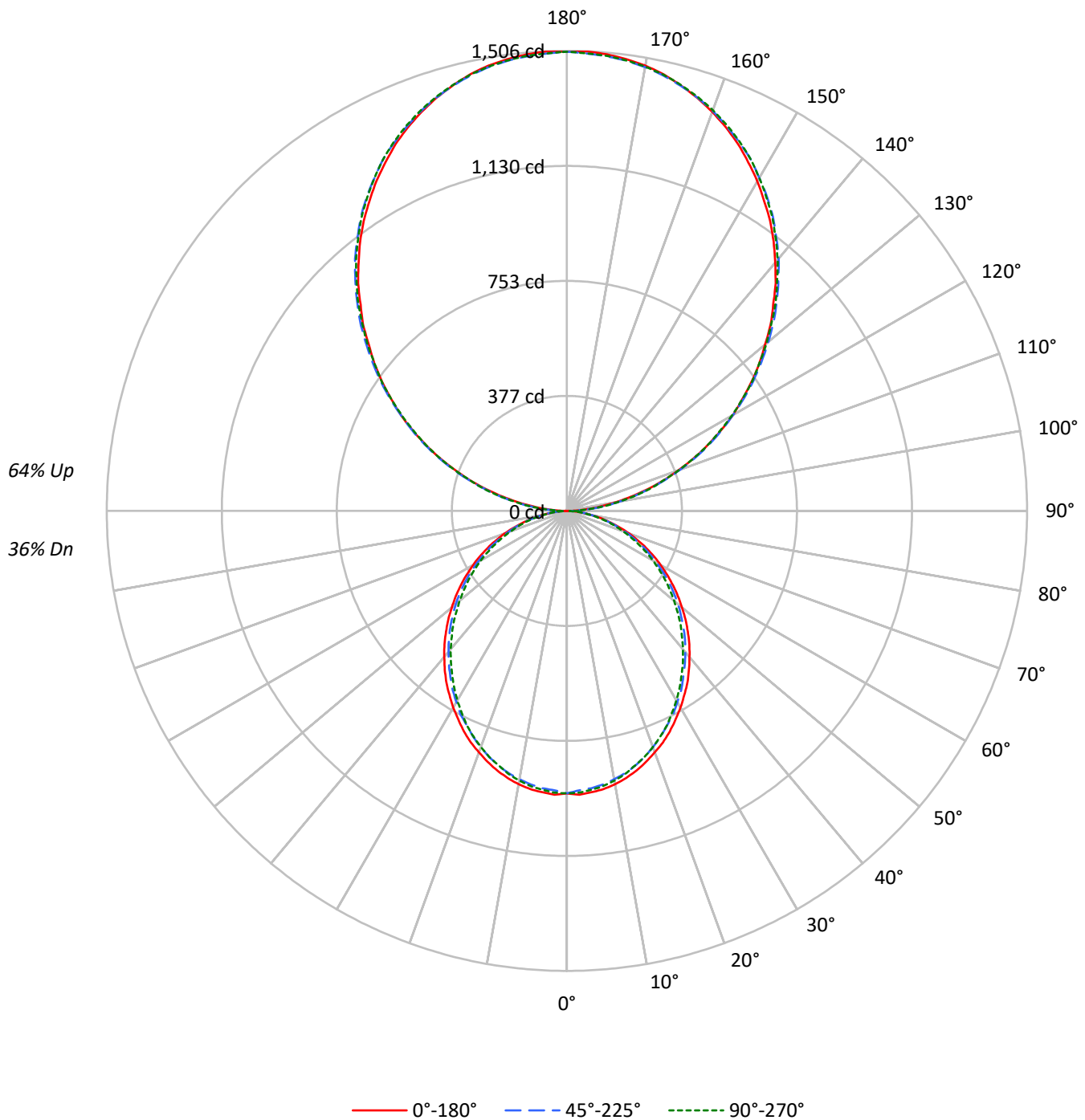
Lumens per Lamp: N/A
Luminaire Lumens: 6559.3 lumens
Efficiency: N/A
Efficacy: 89.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 73.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	43	43	43	36		
1	95	90	87	83	85	82	79	76	66	64	62	52	50	49	38	37	36	30		
2	86	79	73	68	78	72	66	62	58	54	51	45	43	41	34	32	31	25		
3	79	69	62	56	71	63	57	52	51	47	43	40	37	34	30	28	26	21		
4	72	61	54	48	65	56	49	44	45	40	37	36	32	29	27	24	22	18		
5	66	54	47	41	59	50	43	38	40	35	31	32	28	25	24	22	20	16		
6	61	49	41	35	55	45	38	33	36	31	27	29	25	22	22	19	17	14		
7	56	44	36	31	50	40	33	28	33	28	24	26	22	20	20	17	15	12		
8	52	40	32	27	47	36	30	25	30	25	21	24	20	17	18	16	14	11		
9	48	36	29	24	44	33	27	22	27	22	19	22	18	16	17	14	12	10		
10	45	33	26	21	41	30	24	20	25	20	17	20	17	14	16	13	11	9		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1054	1054	1054
5°	1055	1038	1046
10°	1046	1024	1031
15°	1030	1006	1009
20°	1008	982	986
25°	987	953	959
30°	960	927	926
35°	935	895	890
40°	904	863	856
45°	873	832	822
50°	839	798	782
55°	804	759	745
60°	764	713	702
65°	720	666	652
70°	664	608	599
75°	586	538	549
80°	493	449	453
85°	347	297	296

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1506 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.0	1.3
10°-20°	244.9	3.7
20°-30°	359.9	5.5
30°-40°	418.0	6.4
40°-50°	417.5	6.4
50°-60°	364.0	5.5
60°-70°	269.1	4.1
70°-80°	152.3	2.3
80°-90°	44.4	0.7
90°-100°	93.0	1.4
100°-110°	295.6	4.5
110°-120°	505.8	7.7
120°-130°	665.2	10.1
130°-140°	746.6	11.4
140°-150°	732.2	11.2
150°-160°	614.2	9.4
160°-170°	407.3	6.2
170°-180°	142.4	2.2
0°-30°	691.8	10.5
0°-40°	1109.8	16.9
0°-60°	1891.3	28.8
0°-90°	2357.0	35.9
90°-120°	894.4	13.6
90°-150°	3038.4	46.3
90°-180°	4202.0	64.1
0°-180°	6559.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	925	925	925	925	925	
5°	925	921	911	918	917	88
15°	880	875	863	867	862	248
25°	797	790	774	776	774	367
35°	687	678	664	659	654	429
45°	559	553	540	530	526	432
55°	423	418	407	397	392	378
65°	286	280	271	263	259	282
75°	149	148	143	138	140	159
85°	36	36	35	32	31	41
90°	1	16	44	42	43	6
95°	66	79	81	81	79	74
105°	273	276	279	282	282	288
115°	508	515	512	511	508	502
125°	738	750	746	742	740	660
135°	955	969	972	970	967	738
145°	1159	1168	1176	1177	1172	724
155°	1326	1329	1333	1340	1336	610
165°	1442	1441	1441	1450	1443	407
175°	1500	1497	1494	1503	1496	143
180°	1503	1503	1503	1503	1503	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	924.7	924.7	924.7	924.7	924.7
2.5°	930.1	925.7	915.8	924.7	923.0
5°	924.7	921.2	911.4	918.5	916.8
7.5°	918.5	913.2	903.4	910.6	908.8
10°	908.8	902.5	891.9	899.0	896.4
12.5°	895.4	890.1	879.5	883.8	882.1
15°	880.3	875.0	863.4	867.0	862.5
17.5°	861.6	856.3	844.7	849.1	844.7
20°	841.1	835.8	823.4	826.0	822.5
22.5°	820.8	812.8	801.1	801.1	799.3
25°	796.7	789.6	774.5	776.3	774.5
27.5°	770.0	763.7	752.3	749.6	745.2
30°	743.4	736.3	722.9	720.3	716.7
32.5°	714.9	709.6	695.4	690.0	686.4
35°	687.4	678.5	664.2	658.9	654.4
37.5°	656.2	648.2	634.0	627.7	623.3
40°	624.2	617.1	602.8	594.9	591.4
42.5°	593.1	586.0	571.8	562.8	557.5
45°	559.4	553.1	539.7	530.0	526.4
47.5°	526.4	520.2	506.0	496.1	490.8
50°	491.7	487.3	474.8	462.4	458.0
52.5°	458.0	451.7	440.2	430.4	424.1
55°	423.3	418.0	407.3	396.6	392.2
57.5°	388.6	384.1	372.6	361.9	358.3
60°	353.9	350.4	337.9	328.1	325.5
62.5°	320.1	313.9	305.0	296.1	292.6
65°	285.5	280.1	271.2	263.2	258.8
67.5°	249.9	245.4	237.4	231.2	227.7
70°	217.0	213.4	205.4	199.2	195.7
72.5°	183.2	179.6	175.2	169.0	166.4
75°	149.3	147.7	143.1	137.8	139.7
77.5°	119.1	115.6	113.8	111.1	108.5
80°	89.0	88.0	86.2	83.6	81.8
82.5°	60.4	60.4	59.7	56.0	56.0
85°	36.4	35.6	34.7	32.0	31.1
87.5°	16.0	14.3	12.4	9.8	8.9
90°	1.3	16.3	44.4	41.7	43.0
92.5°	28.1	38.1	39.5	40.8	40.8
95°	66.1	78.8	81.1	81.1	78.8
97.5°	110.1	121.9	126.9	126.9	126.9
100°	160.9	171.3	174.9	174.9	173.6
102.5°	214.4	222.0	227.0	228.4	227.0
105°	272.8	276.5	279.2	281.5	281.5
107.5°	330.8	336.3	336.3	337.2	330.8
110°	387.1	394.3	394.3	394.3	390.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	447.7	455.4	454.1	450.4	447.7
115°	507.6	514.8	512.5	511.2	507.6
117.5°	567.0	576.9	570.5	567.0	563.3
120°	626.8	636.8	626.8	626.8	622.7
122.5°	681.1	693.8	687.5	683.9	681.1
125°	738.2	749.6	745.9	741.9	740.5
127.5°	794.0	808.0	803.0	797.6	794.0
130°	846.1	862.4	860.2	857.5	852.5
132.5°	904.6	917.3	918.1	911.8	908.2
135°	954.9	968.9	971.6	970.3	966.6
137.5°	1011.1	1022.4	1024.7	1023.7	1018.3
140°	1060.5	1071.8	1078.2	1078.2	1073.2
142.5°	1111.2	1122.5	1126.2	1127.5	1122.5
145°	1159.3	1168.3	1175.6	1176.9	1172.0
147.5°	1202.3	1213.6	1219.1	1221.3	1216.3
150°	1246.7	1254.4	1259.4	1263.4	1259.4
152.5°	1286.1	1293.9	1300.2	1305.2	1300.2
155°	1325.6	1329.2	1333.2	1339.7	1335.5
157.5°	1359.5	1362.3	1364.5	1373.6	1367.3
160°	1390.0	1392.7	1394.0	1401.7	1396.3
162.5°	1418.0	1418.0	1419.4	1428.0	1421.6
165°	1442.0	1440.7	1440.7	1449.8	1443.4
167.5°	1463.8	1459.8	1459.8	1468.8	1462.4
170°	1480.1	1476.5	1475.1	1484.2	1476.5
172.5°	1491.4	1487.8	1486.4	1495.5	1487.8
175°	1500.5	1496.9	1494.1	1503.2	1495.5
177.5°	1505.5	1501.9	1499.1	1506.8	1499.1
180°	1503.2	1503.2	1503.2	1503.2	1503.2

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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	5.96	6.70	7.02	7.77	9.23	5.51	6.26	6.58	7.33	8.79
	3H	7.60	8.27	8.68	9.35	10.83	7.11	7.78	8.19	8.86	10.34
	4H	8.18	8.82	9.27	9.90	11.38	7.69	8.33	8.78	9.41	10.89
	6H	8.57	9.16	9.67	10.24	11.74	8.07	8.66	9.17	9.74	11.24
	8H	8.67	9.23	9.78	10.33	11.82	8.17	8.73	9.27	9.83	11.32
	12H	8.72	9.24	9.82	10.34	11.85	8.21	8.74	9.31	9.83	11.34
4H	2H	6.40	7.03	7.50	8.12	9.60	6.04	6.68	7.14	7.76	9.24
	3H	8.25	8.78	9.35	9.89	11.38	7.84	8.37	8.95	9.48	10.98
	4H	8.96	9.44	10.06	10.54	12.06	8.53	9.02	9.64	10.12	11.63
	6H	9.46	9.88	10.58	11.00	12.51	9.03	9.45	10.14	10.57	12.08
	8H	9.60	9.99	10.72	11.11	12.63	9.17	9.56	10.28	10.67	12.20
	12H	9.67	10.02	10.80	11.15	12.68	9.22	9.57	10.35	10.70	12.23
8H	4H	9.14	9.53	10.25	10.64	12.17	8.76	9.15	9.88	10.27	11.79
	6H	9.76	10.08	10.90	11.24	12.76	9.38	9.70	10.51	10.85	12.38
	8H	9.98	10.26	11.12	11.39	12.93	9.58	9.86	10.73	11.00	12.54
	12H	10.10	10.35	11.24	11.48	13.06	9.69	9.94	10.83	11.07	12.65
12H	4H	9.12	9.47	10.25	10.60	12.13	8.75	9.10	9.88	10.23	11.76
	6H	9.79	10.07	10.93	11.20	12.75	9.41	9.70	10.56	10.83	12.37
	8H	10.02	10.27	11.17	11.40	12.98	9.64	9.89	10.79	11.02	12.60