

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: P905012

Luminaire Tested: DFN2DIP-4P4F0-030D050US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905012
REPORT IS A COMBINATION OF REPORTS P899104 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D050US835-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

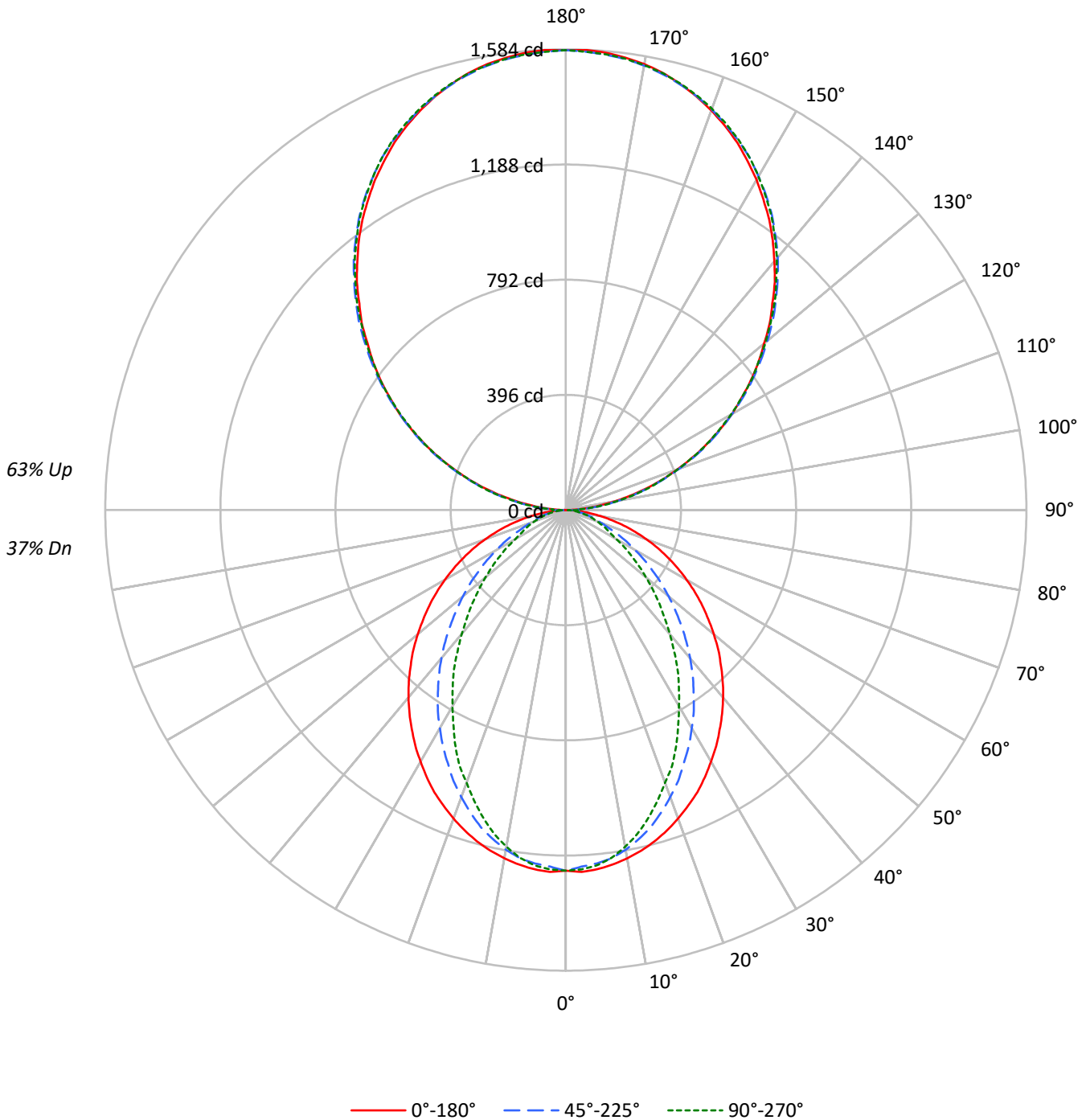
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6975.0 lumens
Efficiency: N/A
Efficacy: 102.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 67.9
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				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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44	37				37
1	95	91	87	84	86	83	80	77	67	65	63	53	51	50	39	38	38	32				32
2	87	80	74	69	79	73	68	63	59	56	53	47	44	42	35	34	32	27				27
3	79	70	64	58	72	64	58	53	52	48	45	41	39	36	31	29	28	23				23
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	28	26	24	20				20
5	67	56	48	42	60	51	44	39	42	37	33	33	30	27	26	23	21	18				18
6	62	50	42	37	56	46	39	34	38	33	29	30	27	24	23	21	19	16				16
7	57	45	38	32	52	41	35	30	34	29	26	28	24	21	21	19	17	14				14
8	53	41	34	29	48	38	31	27	31	26	23	25	22	19	20	17	15	13				13
9	49	38	30	25	45	34	28	24	29	24	20	23	20	17	18	16	14	12				12
10	46	34	27	23	42	32	25	21	26	22	18	22	18	16	17	14	13	11				11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	804	804	804
5°	806	792	797
10°	798	777	771
15°	787	751	731
20°	772	716	683
25°	758	677	635
30°	738	636	575
35°	718	593	522
40°	698	548	462
45°	675	498	407
50°	651	447	353
55°	626	393	302
60°	598	336	249
65°	564	279	224
70°	524	225	203
75°	474	199	186
80°	401	168	162
85°	280	114	124

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1197 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.2	1.7
10°-20°	319.0	4.6
20°-30°	447.9	6.4
30°-40°	488.2	7.0
40°-50°	448.7	6.4
50°-60°	352.4	5.1
60°-70°	229.4	3.3
70°-80°	118.1	1.7
80°-90°	34.6	0.5
90°-100°	97.8	1.4
100°-110°	310.9	4.5
110°-120°	532.1	7.6
120°-130°	699.7	10.0
130°-140°	785.4	11.3
140°-150°	770.2	11.0
150°-160°	646.1	9.3
160°-170°	428.5	6.1
170°-180°	149.8	2.1
0°-30°	883.1	12.7
0°-40°	1371.3	19.7
0°-60°	2172.4	31.1
0°-90°	2554.5	36.6
90°-120°	940.8	13.5
90°-150°	3196.2	45.8
90°-180°	4421.0	63.4
0°-180°	6975.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1240	1240	1240	1240	1240	
5°	1240	1234	1220	1230	1226	118
15°	1179	1167	1129	1108	1096	332
25°	1070	1034	960	914	898	492
35°	922	865	766	696	671	577
45°	754	679	561	481	454	582
55°	573	486	365	297	276	512
65°	387	296	195	157	154	384
75°	206	128	90	82	81	218
85°	48	25	21	21	21	55
90°	1	17	47	44	45	7
95°	70	83	85	85	83	77
105°	287	291	294	296	296	303
115°	534	542	539	538	534	528
125°	777	788	785	780	779	694
135°	1004	1019	1022	1021	1017	776
145°	1220	1229	1237	1238	1233	762
155°	1394	1398	1402	1409	1405	642
165°	1517	1516	1516	1525	1518	428
175°	1578	1575	1572	1581	1573	150
180°	1581	1581	1581	1581	1581	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1239.9	1239.9	1239.9	1239.9	1239.9
2.5°	1245.5	1239.9	1227.5	1238.8	1236.6
5°	1239.9	1234.3	1219.7	1229.8	1226.4
7.5°	1229.8	1223.1	1207.4	1211.8	1206.2
10°	1216.3	1208.5	1186.1	1182.6	1176.0
12.5°	1199.5	1189.4	1159.1	1152.4	1140.0
15°	1179.3	1166.9	1128.8	1107.5	1096.3
17.5°	1155.7	1137.8	1090.6	1066.0	1048.0
20°	1128.8	1106.3	1050.2	1022.3	997.5
22.5°	1099.7	1073.8	1008.7	970.6	953.8
25°	1070.5	1034.5	960.5	914.5	897.6
27.5°	1035.7	997.5	915.6	862.9	837.0
30°	998.7	956.0	866.2	809.1	778.7
32.5°	962.7	911.1	819.2	751.8	723.7
35°	922.4	865.1	766.4	695.7	671.0
37.5°	883.1	821.3	717.0	639.5	611.6
40°	841.6	774.3	665.4	585.7	556.6
42.5°	798.9	727.2	613.8	530.7	502.7
45°	754.1	678.8	561.1	481.3	454.4
47.5°	711.4	631.8	510.6	430.8	406.2
50°	664.3	584.6	461.2	383.7	360.2
52.5°	618.2	534.1	414.1	340.0	318.7
55°	573.3	485.8	364.6	297.4	276.1
57.5°	527.4	437.6	321.0	258.1	240.1
60°	480.2	390.5	274.9	217.7	199.8
62.5°	434.3	344.5	235.6	181.8	172.9
65°	387.1	296.2	195.2	157.1	153.7
67.5°	342.3	251.3	157.1	138.0	134.6
70°	295.1	207.6	130.1	118.9	114.4
72.5°	250.2	167.1	108.8	99.9	97.6
75°	206.4	127.9	89.8	81.9	80.8
77.5°	162.7	90.8	70.7	66.2	63.9
80°	122.3	65.1	53.8	49.4	49.4
82.5°	85.2	43.8	37.0	34.8	34.8
85°	48.2	24.6	21.3	21.3	21.3
87.5°	18.0	8.9	8.9	7.9	7.9
90°	1.4	17.2	46.7	43.9	45.3
92.5°	29.6	40.0	41.5	42.9	42.9
95°	69.6	83.0	85.3	85.3	83.0
97.5°	115.8	128.2	133.5	133.5	133.5
100°	169.2	180.2	184.0	184.0	182.6
102.5°	225.5	233.6	238.8	240.3	238.8
105°	287.0	290.8	293.7	296.0	296.0
107.5°	348.0	353.7	353.7	354.7	348.0
110°	407.1	414.8	414.8	414.8	410.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	471.0	479.1	477.7	473.9	471.0
115°	533.9	541.6	539.2	537.8	533.9
117.5°	596.4	606.9	600.2	596.4	592.6
120°	659.3	669.8	659.3	659.3	655.0
122.5°	716.5	729.9	723.2	719.4	716.5
125°	776.6	788.5	784.7	780.4	779.0
127.5°	835.2	850.0	844.8	839.0	835.2
130°	890.1	907.2	904.8	902.0	896.7
132.5°	951.6	964.9	965.9	959.2	955.4
135°	1004.5	1019.2	1022.1	1020.7	1016.9
137.5°	1063.6	1075.5	1077.9	1076.9	1071.2
140°	1115.5	1127.5	1134.1	1134.1	1128.9
142.5°	1168.9	1180.9	1184.7	1186.1	1180.9
145°	1219.5	1229.0	1236.6	1238.1	1232.8
147.5°	1264.8	1276.7	1282.4	1284.8	1279.5
150°	1311.5	1319.6	1324.8	1329.1	1324.8
152.5°	1353.0	1361.1	1367.7	1373.0	1367.7
155°	1394.4	1398.2	1402.5	1409.2	1404.9
157.5°	1430.2	1433.0	1435.4	1445.0	1438.3
160°	1462.1	1465.0	1466.4	1474.5	1468.8
162.5°	1491.7	1491.7	1493.1	1502.2	1495.5
165°	1517.0	1515.5	1515.5	1525.1	1518.4
167.5°	1539.8	1535.5	1535.5	1545.1	1538.4
170°	1557.0	1553.2	1551.8	1561.3	1553.2
172.5°	1568.9	1565.1	1563.7	1573.2	1565.1
175°	1578.5	1574.6	1571.8	1581.3	1573.2
177.5°	1583.7	1579.9	1577.0	1585.1	1577.0
180°	1581.3	1581.3	1581.3	1581.3	1581.3



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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	5.01	5.75	6.08	6.81	8.27	0.97	1.71	2.04	2.77	4.23
	3H	6.69	7.34	7.77	8.42	9.89	2.16	2.81	3.24	3.89	5.36
	4H	7.30	7.92	8.39	8.99	10.47	2.60	3.22	3.69	4.30	5.78
	6H	7.72	8.29	8.82	9.37	10.86	2.92	3.49	4.02	4.57	6.06
	8H	7.84	8.39	8.95	9.48	10.97	3.01	3.55	4.11	4.65	6.13
	12H	7.91	8.42	9.01	9.51	11.02	3.05	3.57	4.16	4.66	6.16
4H	2H	5.02	5.64	6.12	6.72	8.19	1.56	2.18	2.66	3.26	4.74
	3H	6.85	7.36	7.95	8.47	9.96	2.90	3.42	4.01	4.52	6.01
	4H	7.54	8.01	8.65	9.11	10.62	3.45	3.92	4.56	5.02	6.53
	6H	8.05	8.46	9.17	9.58	11.08	3.86	4.27	4.98	5.39	6.89
	8H	8.23	8.61	9.35	9.72	11.24	3.99	4.37	5.11	5.48	7.00
	12H	8.32	8.67	9.46	9.79	11.31	4.05	4.40	5.19	5.52	7.04
8H	4H	7.50	7.88	8.61	8.99	10.51	3.73	4.10	4.84	5.21	6.73
	6H	8.07	8.38	9.20	9.53	11.05	4.24	4.55	5.38	5.71	7.22
	8H	8.29	8.56	9.43	9.69	11.23	4.44	4.71	5.58	5.84	7.38
	12H	8.43	8.67	9.57	9.80	11.37	4.55	4.79	5.70	5.92	7.49
12H	4H	7.45	7.79	8.58	8.91	10.44	3.73	4.07	4.86	5.19	6.72
	6H	8.04	8.32	9.19	9.45	10.99	4.29	4.57	5.44	5.70	7.23
	8H	8.26	8.50	9.41	9.63	11.20	4.50	4.74	5.65	5.87	7.44