

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: P921132

Luminaire Tested: DFN2DIP-TR4F0-100D050US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921132
REPORT IS A COMBINATION OF REPORTS P900400 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-100D050US935-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

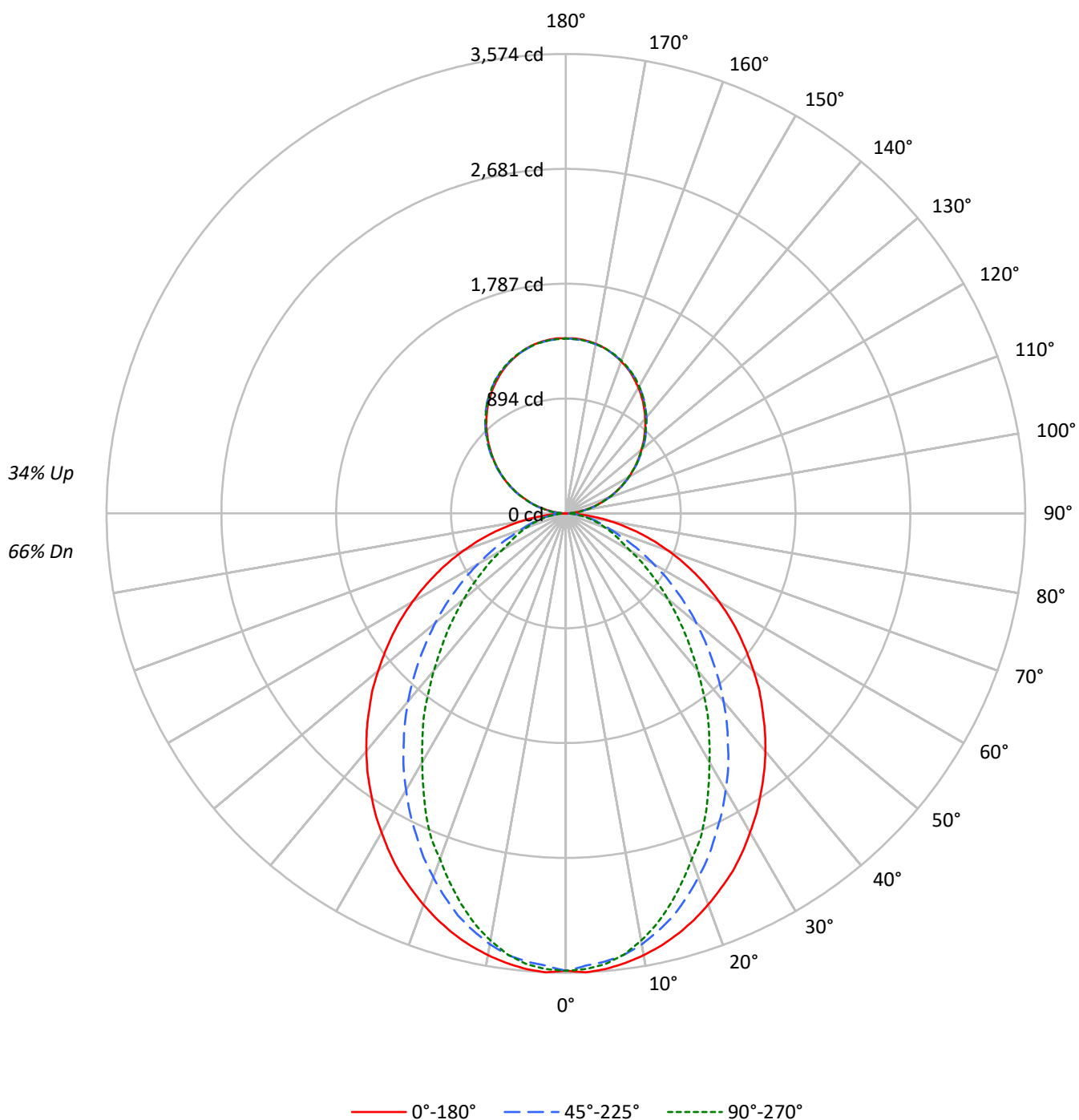
Lumens per Lamp: N/A
Luminaire Lumens: 11128.4 lumens
Efficiency: N/A
Efficacy: 80.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 138.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2827	2827	2827
5°	2832	2782	2800
10°	2803	2727	2709
15°	2765	2637	2568
20°	2714	2513	2395
25°	2662	2374	2228
30°	2592	2231	2016
35°	2523	2077	1830
40°	2453	1918	1617
45°	2371	1742	1424
50°	2287	1564	1235
55°	2200	1374	1053
60°	2098	1175	867
65°	1981	973	780
70°	1840	784	706
75°	1662	691	642
80°	1404	580	557
85°	979	387	418

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2371 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	333.5	3.0
10°-20°	915.5	8.2
20°-30°	1285.4	11.6
30°-40°	1401.2	12.6
40°-50°	1287.8	11.6
50°-60°	1011.4	9.1
60°-70°	658.3	5.9
70°-80°	338.9	3.0
80°-90°	90.4	0.8
90°-100°	84.2	0.8
100°-110°	267.7	2.4
110°-120°	458.1	4.1
120°-130°	602.5	5.4
130°-140°	676.3	6.1
140°-150°	663.1	6.0
150°-160°	556.3	5.0
160°-170°	368.9	3.3
170°-180°	128.9	1.2
0°-30°	2534.4	22.8
0°-40°	3935.6	35.4
0°-60°	6234.8	56.0
0°-90°	7322.4	65.8
90°-120°	810.0	7.3
90°-150°	2751.9	24.7
90°-180°	3806.0	34.2
0°-180°	11128.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3558	3558	3558	3558	3558	
5°	3558	3542	3500	3530	3520	337
15°	3385	3349	3240	3178	3146	954
25°	3072	2969	2757	2625	2576	1413
35°	2647	2483	2200	1997	1926	1657
45°	2164	1948	1610	1381	1304	1671
55°	1646	1394	1046	854	792	1470
65°	1111	850	560	451	441	1102
75°	592	367	258	235	232	627
85°	138	71	61	61	61	159
90°	1	15	40	38	39	11
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°	3558.5	3558.5	3558.5	3558.5	3558.5
2.5°	3574.5	3558.5	3522.9	3555.4	3548.9
5°	3558.5	3542.4	3500.4	3529.5	3519.8
7.5°	3529.5	3510.3	3465.2	3477.8	3461.8
10°	3490.8	3468.3	3404.0	3394.1	3375.0
12.5°	3442.7	3413.6	3326.5	3307.4	3271.8
15°	3384.6	3349.0	3239.7	3178.5	3146.4
17.5°	3316.9	3265.3	3130.1	3059.3	3007.7
20°	3239.7	3175.1	3014.2	2933.9	2862.8
22.5°	3156.0	3081.9	2894.9	2785.7	2737.5
25°	3072.3	2969.2	2756.6	2624.7	2576.2
27.5°	2972.5	2862.8	2627.8	2476.4	2402.3
30°	2866.3	2743.6	2486.0	2322.0	2234.9
32.5°	2763.1	2614.8	2351.0	2157.7	2077.0
35°	2647.2	2482.9	2199.7	1996.7	1925.6
37.5°	2534.5	2357.2	2057.9	1835.5	1755.1
40°	2415.3	2222.2	1909.6	1681.0	1597.3
42.5°	2292.9	2086.9	1761.7	1523.2	1442.9
45°	2164.1	1948.2	1610.3	1381.4	1304.2
47.5°	2041.9	1813.3	1465.4	1236.5	1165.8
50°	1906.5	1677.9	1323.6	1101.2	1033.9
52.5°	1774.3	1532.7	1188.3	975.8	914.6
55°	1645.5	1394.4	1046.5	853.5	792.3
57.5°	1513.6	1255.9	921.2	740.7	689.1
60°	1378.3	1120.7	788.9	624.9	573.3
62.5°	1246.4	988.8	676.1	521.8	496.1
65°	1111.1	850.1	560.3	451.0	441.1
67.5°	982.3	721.3	451.0	396.0	386.4
70°	847.0	595.9	373.4	341.3	328.4
72.5°	718.2	479.7	312.3	286.6	280.2
75°	592.5	367.0	257.6	235.1	232.0
77.5°	467.1	260.7	202.9	189.9	183.5
80°	350.9	186.9	154.5	141.8	141.8
82.5°	244.6	125.7	106.2	99.8	99.8
85°	138.4	70.7	61.1	61.1	61.1
87.5°	51.6	25.7	25.7	22.6	22.6
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	12.11	13.09	12.93	13.92	14.95	8.09	9.06	8.90	9.90	10.93
	3H	13.80	14.68	14.63	15.52	16.58	9.29	10.16	10.12	11.00	12.06
	4H	14.42	15.24	15.26	16.09	17.16	9.74	10.57	10.59	11.42	12.49
	6H	14.85	15.61	15.70	16.46	17.54	10.07	10.83	10.93	11.69	12.77
	8H	14.98	15.70	15.84	16.57	17.66	10.17	10.89	11.04	11.77	12.85
	12H	15.04	15.73	15.91	16.60	17.71	10.22	10.91	11.09	11.78	12.88
4H	2H	12.15	12.97	13.00	13.82	14.89	8.70	9.52	9.55	10.37	11.44
	3H	13.99	14.68	14.85	15.56	16.64	10.06	10.75	10.93	11.63	12.72
	4H	14.69	15.31	15.56	16.19	17.30	10.62	11.24	11.49	12.12	13.23
	6H	15.21	15.75	16.10	16.65	17.77	11.05	11.58	11.94	12.49	13.60
	8H	15.39	15.89	16.28	16.79	17.92	11.18	11.68	12.07	12.58	13.71
	12H	15.49	15.94	16.40	16.86	17.99	11.25	11.70	12.16	12.62	13.75
8H	4H	14.67	15.17	15.56	16.07	17.19	10.91	11.41	11.80	12.31	13.44
	6H	15.24	15.65	16.16	16.59	17.72	11.43	11.85	12.35	12.79	13.92
	8H	15.46	15.82	16.39	16.76	17.90	11.63	11.99	12.56	12.93	14.07
	12H	15.60	15.92	16.53	16.85	18.05	11.75	12.08	12.68	13.00	14.20
12H	4H	14.63	15.08	15.54	16.00	17.13	10.92	11.37	11.83	12.29	13.42
	6H	15.22	15.58	16.14	16.52	17.66	11.48	11.85	12.41	12.78	13.93
	8H	15.44	15.77	16.37	16.69	17.89	11.70	12.02	12.63	12.95	14.15