

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: P905020

Luminaire Tested: DFN2DIP-4P4F0-030D070US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905020
REPORT IS A COMBINATION OF REPORTS P899128 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D070US835-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

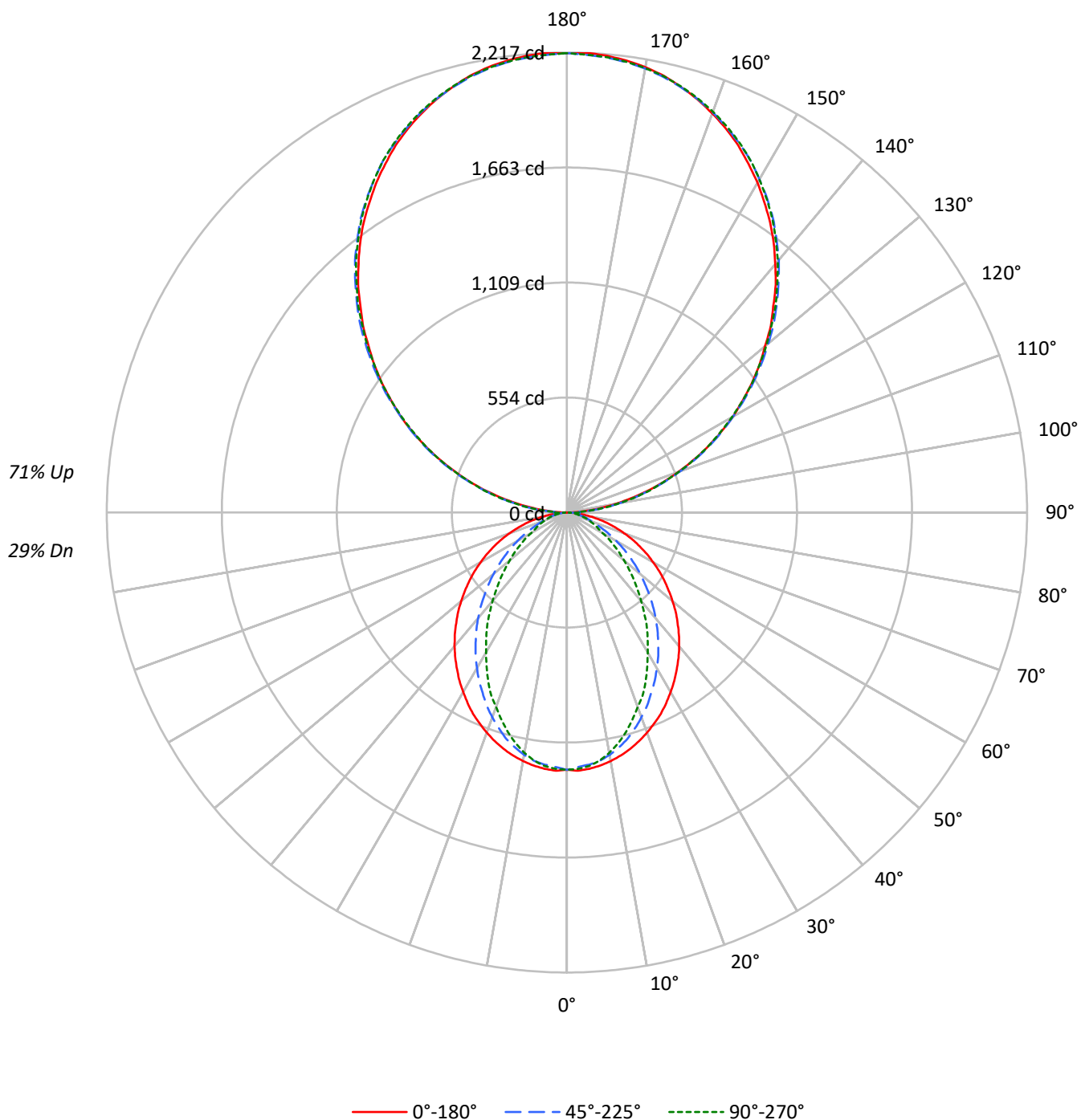
Lumens per Lamp: N/A
Luminaire Lumens: 8745.0 lumens
Efficiency: N/A
Efficacy: 98.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 88.8
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37
1	93	89	86	82	84	80	77	74	63	61	59	48	46	45	33	32	32
2	85	78	72	68	76	70	66	61	56	52	49	42	40	38	29	28	27
3	78	69	62	57	70	62	56	52	49	45	42	37	35	32	26	25	23
4	71	61	54	48	64	55	49	44	44	39	36	33	30	28	24	22	20
5	65	54	47	41	59	49	43	38	39	35	31	30	27	24	21	19	18
6	60	49	41	36	54	44	38	33	35	31	27	27	24	21	20	17	16
7	56	44	36	31	50	40	33	29	32	27	24	25	21	19	18	16	14
8	52	40	33	27	46	36	30	25	29	24	21	23	19	17	16	14	13
9	48	36	29	24	43	33	27	23	27	22	19	21	18	15	15	13	12
10	45	33	26	22	40	30	24	20	25	20	17	19	16	14	14	12	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: 1675 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.2	1.3
10°-20°	319.0	3.6
20°-30°	447.9	5.1
30°-40°	488.2	5.6
40°-50°	448.7	5.1
50°-60°	352.4	4.0
60°-70°	229.4	2.6
70°-80°	118.1	1.4
80°-90°	36.4	0.4
90°-100°	137.0	1.6
100°-110°	435.3	5.0
110°-120°	744.9	8.5
120°-130°	979.6	11.2
130°-140°	1099.6	12.6
140°-150°	1078.3	12.3
150°-160°	904.5	10.3
160°-170°	599.9	6.9
170°-180°	209.7	2.4
0°-30°	883.1	10.1
0°-40°	1371.3	15.7
0°-60°	2172.4	24.8
0°-90°	2556.3	29.2
90°-120°	1317.2	15.1
90°-150°	4474.7	51.2
90°-180°	6189.0	70.8
0°-180°	8745.0	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°	2	24	65	61	63	9
95°	97	116	120	120	116	108
105°	402	407	411	414	414	424
115°	748	758	755	753	748	739
125°	1087	1104	1099	1093	1091	972
135°	1406	1427	1431	1429	1424	1087
145°	1707	1721	1731	1733	1726	1067
155°	1952	1958	1964	1973	1967	899
165°	2124	2122	2122	2135	2126	599
175°	2210	2204	2200	2214	2202	210
180°	2214	2214	2214	2214	2214	

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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°	2.0	24.0	65.4	61.4	63.4
92.5°	41.4	56.1	58.1	60.1	60.1
95°	97.4	116.1	119.5	119.5	116.1
97.5°	162.2	179.5	186.9	186.9	186.9
100°	236.9	252.3	257.6	257.6	255.6
102.5°	315.7	327.0	334.4	336.4	334.4
105°	401.8	407.1	411.1	414.5	414.5
107.5°	487.2	495.2	495.2	496.6	487.2
110°	570.0	580.7	580.7	580.7	575.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	659.4	670.8	668.8	663.4	659.4
115°	747.5	758.2	754.9	752.9	747.5
117.5°	834.9	849.6	840.3	834.9	829.6
120°	923.0	937.7	923.0	923.0	917.0
122.5°	1003.1	1021.8	1012.5	1007.1	1003.1
125°	1087.2	1103.9	1098.6	1092.6	1090.6
127.5°	1169.3	1190.0	1182.7	1174.7	1169.3
130°	1246.1	1270.1	1266.8	1262.8	1255.4
132.5°	1332.2	1350.9	1352.2	1342.9	1337.5
135°	1406.3	1426.9	1431.0	1428.9	1423.6
137.5°	1489.0	1505.7	1509.0	1507.7	1499.7
140°	1561.8	1578.5	1587.8	1587.8	1580.5
142.5°	1636.5	1653.2	1658.5	1660.5	1653.2
145°	1707.3	1720.6	1731.3	1733.3	1726.0
147.5°	1770.7	1787.4	1795.4	1798.7	1791.4
150°	1836.1	1847.4	1854.8	1860.8	1854.8
152.5°	1894.1	1905.5	1914.8	1922.2	1914.8
155°	1952.2	1957.5	1963.6	1972.9	1966.9
157.5°	2002.3	2006.3	2009.6	2023.0	2013.6
160°	2047.0	2051.0	2053.0	2064.3	2056.3
162.5°	2088.4	2088.4	2090.4	2103.0	2093.7
165°	2123.7	2121.7	2121.7	2135.1	2125.7
167.5°	2155.8	2149.8	2149.8	2163.1	2153.8
170°	2179.8	2174.5	2172.5	2185.8	2174.5
172.5°	2196.5	2191.1	2189.1	2202.5	2191.1
175°	2209.8	2204.5	2200.5	2213.8	2202.5
177.5°	2217.2	2211.8	2207.8	2219.2	2207.8
180°	2213.8	2213.8	2213.8	2213.8	2213.8

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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	4.07	4.75	5.19	5.86	7.41	0.03	0.71	1.15	1.83	3.37
	3H	5.74	6.35	6.87	7.47	9.03	1.21	1.82	2.34	2.94	4.50
	4H	6.34	6.93	7.48	8.05	9.61	1.65	2.23	2.79	3.35	4.92
	6H	6.76	7.30	7.91	8.42	10.00	1.97	2.50	3.11	3.62	5.20
	8H	6.89	7.40	8.04	8.54	10.10	2.05	2.56	3.20	3.70	5.27
	12H	6.95	7.43	8.10	8.56	10.15	2.09	2.58	3.25	3.71	5.30
4H	2H	4.07	4.65	5.21	5.77	7.33	0.61	1.19	1.76	2.31	3.87
	3H	5.89	6.37	7.04	7.52	9.10	1.95	2.43	3.10	3.58	5.15
	4H	6.58	7.03	7.74	8.16	9.76	2.49	2.94	3.65	4.07	5.67
	6H	7.09	7.47	8.25	8.63	10.22	2.90	3.28	4.06	4.44	6.03
	8H	7.27	7.62	8.43	8.77	10.38	3.03	3.39	4.19	4.54	6.14
	12H	7.36	7.68	8.54	8.84	10.45	3.09	3.41	4.27	4.57	6.18
8H	4H	6.54	6.89	7.70	8.04	9.65	2.76	3.12	3.92	4.27	5.87
	6H	7.10	7.40	8.28	8.59	10.19	3.28	3.57	4.46	4.76	6.36
	8H	7.32	7.58	8.51	8.75	10.37	3.47	3.73	4.66	4.90	6.52
	12H	7.46	7.69	8.65	8.85	10.51	3.59	3.81	4.77	4.98	6.63
12H	4H	6.48	6.81	7.66	7.97	9.57	2.76	3.08	3.94	4.25	5.85
	6H	7.08	7.34	8.26	8.51	10.13	3.33	3.59	4.51	4.76	6.38
	8H	7.30	7.52	8.49	8.69	10.34	3.54	3.76	4.72	4.93	6.58

END OF REPORT