

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: P916067

Luminaire Tested: DFN2DIP-HX2F0-020D040US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916067
REPORT IS A COMBINATION OF REPORTS P900691 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D040US930-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

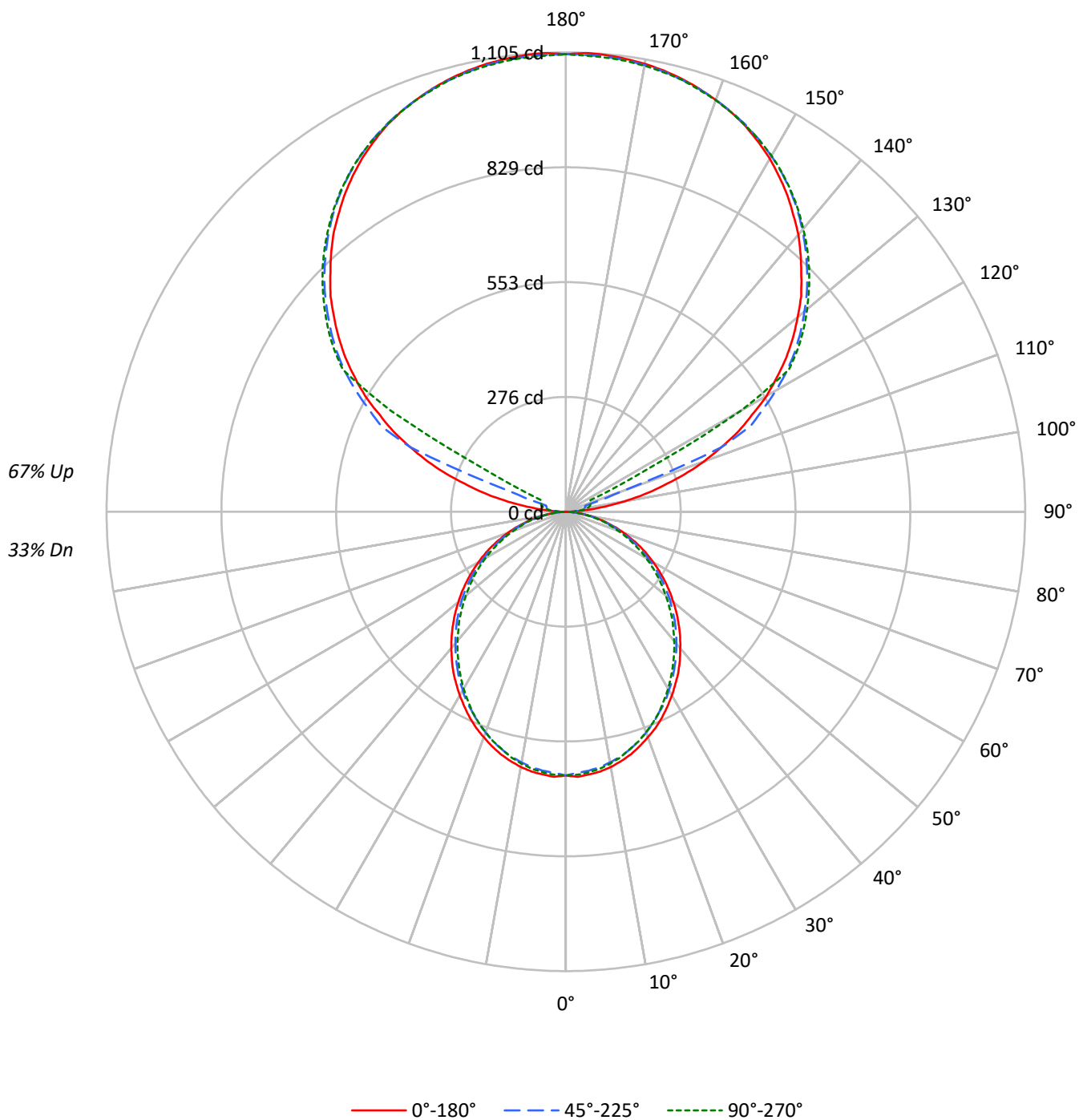
Lumens per Lamp: N/A
Luminaire Lumens: 4842.9 lumens
Efficiency: N/A
Efficacy: 108.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 44.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	78	72	67	77	71	66	62	57	53	50	44	41	39	32	30	29
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25
4	71	61	53	47	64	55	49	43	44	40	36	34	31	28	25	23	21
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	18
6	60	48	41	35	54	44	37	32	36	31	27	28	24	21	20	18	16
7	56	44	36	30	50	40	33	28	32	27	23	25	22	19	19	16	14
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	13	12
10	45	33	26	21	40	30	24	20	25	20	17	19	16	14	15	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1495	1495	1495
5°	1495	1470	1481
10°	1480	1447	1458
15°	1456	1420	1424
20°	1424	1383	1389
25°	1393	1340	1350
30°	1354	1300	1300
35°	1317	1253	1248
40°	1271	1205	1197
45°	1225	1157	1146
50°	1176	1107	1087
55°	1123	1048	1031
60°	1064	980	968
65°	998	908	894
70°	916	821	813
75°	803	717	734
80°	665	584	592
85°	449	366	367

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1225 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.7	1.2
10°-20°	168.0	3.5
20°-30°	246.9	5.1
30°-40°	286.8	5.9
40°-50°	286.4	5.9
50°-60°	249.7	5.2
60°-70°	184.6	3.8
70°-80°	104.5	2.2
80°-90°	29.5	0.6
90°-100°	36.3	0.7
100°-110°	135.3	2.8
110°-120°	358.8	7.4
120°-130°	595.1	12.3
130°-140°	632.1	13.1
140°-150°	587.5	12.1
150°-160°	472.3	9.8
160°-170°	304.4	6.3
170°-180°	104.8	2.2
0°-30°	474.7	9.8
0°-40°	761.5	15.7
0°-60°	1297.6	26.8
0°-90°	1616.2	33.4
90°-120°	530.4	11.0
90°-150°	2345.2	48.4
90°-180°	3227.0	66.6
0°-180°	4842.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	634	634	634	634	634	
5°	634	632	625	630	629	60
15°	604	600	592	595	592	170
25°	547	542	531	533	531	252
35°	472	466	456	452	449	295
45°	384	380	370	364	361	296
55°	290	287	279	272	269	260
65°	196	192	186	181	178	194
75°	102	101	98	95	96	109
85°	25	24	24	22	21	28
90°	1	10	16	20	21	4
95°	52	25	31	35	34	61
105°	242	266	49	57	60	259
115°	458	471	491	123	65	451
125°	647	658	673	679	681	577
135°	801	814	821	829	828	619
145°	929	929	942	948	944	581
155°	1023	1016	1026	1030	1024	472
165°	1078	1074	1076	1082	1076	305
175°	1103	1097	1099	1105	1097	105
180°	1101	1101	1101	1101	1101	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	634.5	634.5	634.5	634.5	634.5
2.5°	638.1	635.1	628.4	634.5	633.3
5°	634.5	632.1	625.3	630.2	629.0
7.5°	630.2	626.6	619.9	624.8	623.5
10°	623.5	619.3	612.0	616.8	615.0
12.5°	614.3	610.7	603.4	606.4	605.2
15°	604.0	600.4	592.4	594.8	591.8
17.5°	591.2	587.6	579.6	582.6	579.6
20°	577.1	573.5	564.9	566.8	564.3
22.5°	563.1	557.7	549.7	549.7	548.5
25°	546.7	541.8	531.4	532.6	531.4
27.5°	528.3	524.1	516.2	514.4	511.3
30°	510.1	505.2	496.0	494.2	491.7
32.5°	490.5	486.9	477.1	473.4	471.0
35°	471.7	465.5	455.8	452.1	449.0
37.5°	450.3	444.7	435.0	430.7	427.6
40°	428.3	423.4	413.6	408.2	405.7
42.5°	406.9	402.0	392.3	386.2	382.5
45°	383.8	379.5	370.3	363.6	361.2
47.5°	361.2	356.9	347.2	340.4	336.8
50°	337.4	334.4	325.8	317.2	314.2
52.5°	314.2	309.9	302.0	295.3	291.1
55°	290.4	286.7	279.4	272.1	269.0
57.5°	266.6	263.6	255.6	248.3	245.8
60°	242.8	240.4	231.9	225.1	223.3
62.5°	219.6	215.3	209.3	203.2	200.7
65°	195.8	192.2	186.1	180.6	177.6
67.5°	171.5	168.4	162.9	158.7	156.2
70°	148.9	146.4	140.9	136.6	134.3
72.5°	125.7	123.3	120.2	115.9	114.1
75°	102.5	101.3	98.2	94.6	95.8
77.5°	81.8	79.3	78.0	76.2	74.4
80°	61.1	60.4	59.2	57.3	56.1
82.5°	41.5	41.5	40.9	38.5	38.5
85°	24.9	24.4	23.8	21.9	21.4
87.5°	11.0	9.8	8.6	6.8	6.1
90°	0.7	9.5	15.9	20.0	21.4
92.5°	20.0	16.7	19.1	20.7	21.4
95°	51.7	25.4	31.0	35.1	34.2
97.5°	93.2	27.9	40.6	43.0	43.8
100°	141.0	31.9	45.4	51.7	53.3
102.5°	193.5	192.0	47.0	55.7	58.1
105°	242.1	266.0	48.6	57.3	60.5
107.5°	298.6	318.5	50.2	58.9	62.1
110°	352.9	369.5	139.4	59.8	62.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	403.8	418.1	404.6	61.3	63.8
115°	457.9	471.4	491.4	122.6	65.4
117.5°	504.9	520.8	534.4	420.4	211.8
120°	557.5	569.4	583.8	593.4	485.8
122.5°	602.0	614.8	630.8	635.5	636.3
125°	647.4	657.9	672.9	678.6	680.9
127.5°	688.8	700.0	712.0	720.0	720.7
130°	727.9	740.7	749.3	758.1	757.4
132.5°	767.7	778.1	786.8	794.0	793.3
135°	801.2	814.0	821.1	829.1	827.5
137.5°	836.2	845.7	853.8	861.7	859.3
140°	870.4	876.9	885.6	892.8	888.8
142.5°	899.2	904.7	915.1	921.4	917.5
145°	929.4	928.6	942.1	947.7	943.7
147.5°	955.6	953.2	966.8	970.8	967.7
150°	981.1	975.6	988.4	993.1	989.1
152.5°	1002.7	996.3	1008.2	1013.0	1007.5
155°	1023.4	1016.3	1025.8	1030.5	1024.2
157.5°	1040.1	1033.7	1041.0	1046.5	1040.1
160°	1054.4	1049.6	1054.4	1059.2	1053.6
162.5°	1067.1	1062.4	1066.4	1072.0	1064.8
165°	1078.3	1073.6	1075.9	1081.5	1075.9
167.5°	1087.1	1082.2	1084.8	1090.3	1083.1
170°	1094.3	1089.5	1091.0	1096.7	1089.5
172.5°	1099.0	1094.3	1095.9	1101.5	1094.3
175°	1102.9	1097.4	1099.0	1104.6	1096.7
177.5°	1104.6	1099.0	1099.8	1105.5	1098.3
180°	1100.7	1100.7	1100.7	1100.7	1100.7

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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	6.76	7.49	7.85	8.58	10.07	6.34	7.07	7.42	8.15	9.64
	3H	8.39	9.04	9.48	10.13	11.64	7.92	8.58	9.02	9.67	11.18
	4H	8.95	9.57	10.06	10.67	12.18	8.49	9.11	9.60	10.21	11.72
	6H	9.32	9.89	10.44	10.99	12.52	8.86	9.43	9.98	10.53	12.06
	8H	9.41	9.96	10.53	11.07	12.59	8.96	9.50	10.08	10.61	12.13
	12H	9.45	9.97	10.57	11.07	12.62	8.99	9.50	10.11	10.61	12.15
4H	2H	7.20	7.82	8.31	8.91	10.43	6.86	7.48	7.97	8.57	10.09
	3H	9.02	9.54	10.14	10.66	12.19	8.64	9.15	9.76	10.28	11.80
	4H	9.71	10.18	10.83	11.30	12.84	9.31	9.79	10.44	10.90	12.45
	6H	10.19	10.60	11.32	11.74	13.27	9.80	10.20	10.93	11.34	12.88
	8H	10.33	10.71	11.46	11.84	13.39	9.93	10.31	11.06	11.44	12.99
	12H	10.38	10.73	11.53	11.87	13.43	9.98	10.32	11.13	11.46	13.02
8H	4H	9.88	10.26	11.01	11.39	12.95	9.53	9.91	10.66	11.04	12.59
	6H	10.48	10.79	11.63	11.96	13.52	10.13	10.44	11.28	11.61	13.16
	8H	10.68	10.96	11.84	12.11	13.68	10.33	10.60	11.48	11.75	13.32
	12H	10.79	11.03	11.95	12.18	13.79	10.42	10.66	11.58	11.81	13.42
12H	4H	9.86	10.21	11.01	11.34	12.90	9.52	9.86	10.66	11.00	12.56
	6H	10.50	10.78	11.66	11.93	13.50	10.16	10.44	11.32	11.59	13.16
	8H	10.72	10.96	11.88	12.11	13.72	10.37	10.62	11.54	11.76	13.37

END OF REPORT