

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO

Report Number: P1219799

Luminaire Tested: HLC4FS1E-24P-2700K

Issue Date: 12/22/2025

Tested By:

Approved By:



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Test Information

Test Method: LM-79-2019
Report Number: P1219799
Test Lab: INNOVATION CENTER
Issue Date: 12/22/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: HLC4FS1E-24P-2700K
Description: 4" Surface Mount LED Disk Light

Light Source:
Ballast/Driver: -

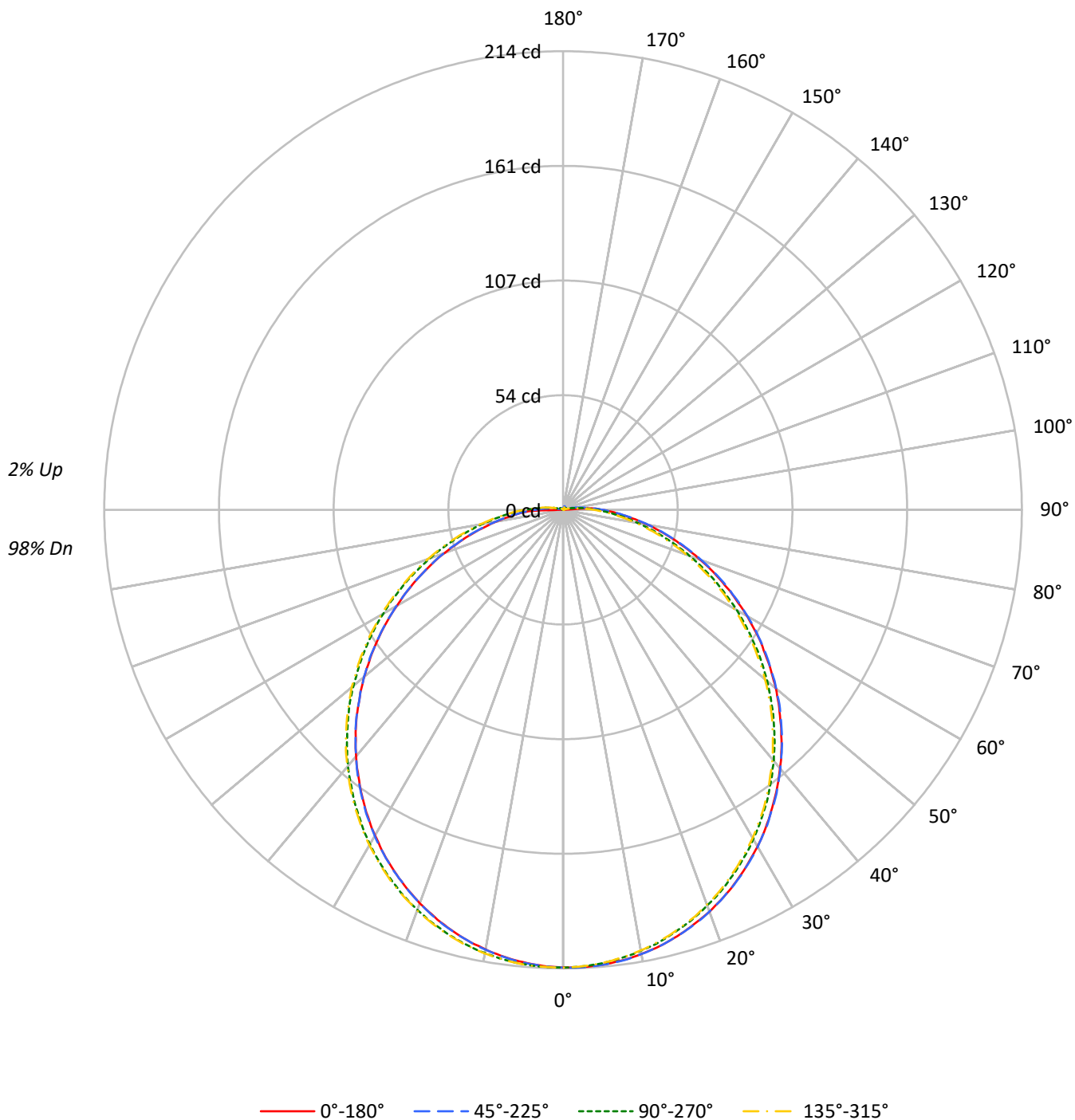
Summary

Lumens per Lamp: 660 (1 lamp)
Luminaire Lumens: 650.0 lumens
Efficiency: 98.5%
Efficacy: 66.3 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.25 / 1.36
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 9.8
Input Voltage (V): 122
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: >0.9
Total Harmonic Distortion (THDi): <20
Frequency (hertz): 60
Stabilization Time: HR
Operation Time: HR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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CATALOG NUMBER: HLC4FS1E-24P-2700K

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	0
RCR																				
0	117	117	117	117	114	114	114	114	108	108	108		103	103	103		98	98	98	96
1	105	100	96	91	102	98	93	90	93	90	86		89	86	83		85	83	80	78
2	95	87	80	74	93	85	78	73	81	75	71		77	73	69		74	70	67	64
3	87	76	68	61	84	74	66	60	71	64	59		68	62	57		65	60	56	54
4	79	67	58	51	77	66	57	51	63	56	50		60	54	49		58	53	48	46
5	73	60	51	44	71	59	50	44	56	49	43		54	48	42		52	46	42	39
6	67	54	45	38	65	53	44	38	51	43	38		49	42	37		47	41	37	34
7	62	49	40	34	61	48	40	34	46	39	33		45	38	33		43	37	32	30
8	58	45	36	30	56	44	36	30	42	35	30		41	34	29		40	34	29	27
9	54	41	33	27	53	40	32	27	39	32	27		38	31	26		37	31	26	24
10	51	38	30	25	50	37	30	24	36	29	24		35	29	24		34	28	24	22

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	26882	26882	26882	26882
5°	26908	26820	26769	26883
10°	26900	26696	26619	26836
15°	26827	26527	26410	26748
20°	26732	26317	26169	26598
25°	26550	26078	25842	26411
30°	26361	25780	25489	26172
35°	26102	25488	25088	25918
40°	25858	25119	24676	25628
45°	25611	24721	24223	25291
50°	25374	24336	23690	24982
55°	25079	23894	23104	24640
60°	24943	23559	22527	24365
65°	24806	23227	22006	24240
70°	25095	23145	21599	24249
75°	26111	23534	21638	25042
80°	29135	25728	22902	27830
85°	40575	35088	30323	38554

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°

Vertical Angle: 89°

Luminance: 152153 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	20.2	3.1	3.1
10°-20°	57.7	8.9	8.7
20°-30°	87.0	13.4	13.2
30°-40°	104.4	16.1	15.8
40°-50°	108.2	16.6	16.4
50°-60°	98.7	15.2	14.9
60°-70°	78.5	12.1	11.9
70°-80°	52.5	8.1	8.0
80°-90°	27.7	4.3	4.2
90°-100°	9.7	1.5	1.5
100°-110°	2.2	0.3	0.3
110°-120°	0.8	0.1	0.1
120°-130°	0.7	0.1	0.1
130°-140°	0.6	0.1	0.1
140°-150°	0.5	0.1	0.1
150°-160°	0.3	0.0	0.0
160°-170°	0.1	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-30°	164.9	25.4	25.0
0°-40°	269.3	41.4	40.8
0°-60°	476.2	73.3	72.1
0°-90°	634.9	97.7	96.2
90°-120°	12.8	2.0	1.9
90°-150°	14.6	2.3	2.2
90°-180°	15.0	2.3	2.3
0°-180°	650.0	100.0	98.5

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	214	214	214	214	214	
5°	213	212	212	213	213	20
15°	206	204	203	205	206	58
25°	191	188	186	190	191	88
35°	170	166	163	169	170	106
45°	144	139	136	142	144	111
55°	114	109	105	112	114	102
65°	83	78	74	81	83	83
75°	54	48	44	52	54	57
85°	28	24	21	27	28	25
90°	18	16	0	17	18	10
95°	0	9	0	10	0	2
105°	0	2	0	3	0	0
115°	0	1	0	1	0	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	213.6	213.6	213.6	213.6	213.6	213.6	213.6	213.6	213.6	213.6	213.6
1°	213.6	213.6	213.7	213.7	213.5	213.5	213.5	213.4	213.4	213.4	213.5
2°	213.6	213.6	213.7	213.7	213.3	213.3	213.3	213.2	213.2	213.2	213.2
3°	213.5	213.5	213.6	213.6	213.1	213.1	213.0	212.8	212.8	212.9	212.9
4°	213.3	213.3	213.4	213.5	212.7	212.8	212.6	212.5	212.4	212.5	212.5
5°	213.0	213.0	213.1	213.2	212.3	212.4	212.2	211.9	211.9	212.0	212.1
6°	212.7	212.7	212.8	212.9	211.8	211.9	211.7	211.3	211.4	211.4	211.5
7°	212.2	212.2	212.4	212.4	211.2	211.4	211.0	210.7	210.7	210.8	210.9
8°	211.8	211.7	211.9	212.0	210.5	210.8	210.4	209.9	210.0	210.1	210.1
9°	211.2	211.1	211.2	211.3	209.8	210.1	209.6	209.1	209.2	209.3	209.3
10°	210.5	210.4	210.5	210.7	208.9	209.3	208.8	208.2	208.3	208.4	208.4
11°	209.7	209.6	209.8	209.9	208.1	208.4	207.9	207.3	207.3	207.4	207.5
12°	209.0	208.8	208.9	209.2	207.2	207.5	206.8	206.2	206.4	206.4	206.4
13°	208.0	207.9	208.0	208.3	206.1	206.4	205.7	205.0	205.3	205.3	205.3
14°	207.0	206.9	207.0	207.3	204.9	205.4	204.6	203.8	204.0	204.1	204.1
15°	205.9	205.8	206.0	206.3	203.6	204.2	203.4	202.6	202.7	202.9	202.9
16°	204.8	204.7	204.8	205.2	202.4	202.9	202.0	201.3	201.4	201.6	201.6
17°	203.5	203.4	203.6	204.0	201.2	201.6	200.7	199.8	200.1	200.2	200.1
18°	202.2	202.3	202.4	202.8	199.7	200.2	199.4	198.3	198.4	198.7	198.6
19°	200.9	200.8	201.1	201.4	198.2	198.8	197.7	196.8	196.9	197.1	197.0
20°	199.6	199.4	199.5	200.1	196.5	197.2	196.1	195.1	195.4	195.5	195.4
21°	197.9	197.9	198.0	198.4	195.0	195.6	194.6	193.3	193.6	193.8	193.7
22°	196.4	196.2	196.5	196.9	193.4	194.0	192.9	191.6	191.8	192.1	192.0
23°	194.8	194.6	194.8	195.3	191.6	192.3	191.0	189.6	190.0	190.1	190.0
24°	193.1	192.9	193.1	193.6	189.7	190.3	189.1	187.8	188.1	188.4	188.1
25°	191.2	191.1	191.4	191.8	187.8	188.5	187.1	185.8	186.1	186.4	186.3
26°	189.4	189.2	189.6	190.1	185.9	186.4	185.3	183.9	184.1	184.3	184.2
27°	187.5	187.3	187.5	188.0	183.8	184.5	183.1	181.6	182.1	182.2	182.2
28°	185.4	185.4	185.6	186.1	181.9	182.5	181.1	179.5	180.0	180.2	180.0
29°	183.4	183.3	183.7	184.2	179.8	180.4	178.9	177.3	177.6	177.9	177.9
30°	181.4	181.2	181.6	182.1	177.4	178.3	176.8	175.1	175.4	175.5	175.7
31°	179.3	179.1	179.3	180.1	175.2	176.1	174.5	172.8	173.2	173.3	173.3
32°	177.1	176.9	177.2	177.8	172.9	173.7	172.1	170.5	170.7	170.9	171.0
33°	174.7	174.5	175.0	175.6	170.6	171.3	169.9	168.0	168.4	168.7	168.7
34°	172.4	172.2	172.5	173.3	168.2	168.8	167.5	165.7	165.9	166.1	166.1
35°	169.9	169.9	170.2	170.9	165.9	166.5	164.9	163.1	163.3	163.6	163.6
36°	167.6	167.6	167.9	168.6	163.2	164.2	162.4	160.3	160.8	161.0	160.9
37°	165.2	164.9	165.5	166.1	160.6	161.6	159.8	157.8	158.1	158.5	158.4
38°	162.7	162.5	162.8	163.7	158.1	159.0	157.0	155.3	155.5	155.7	155.8
39°	160.0	160.0	160.3	161.0	155.4	156.5	154.6	152.5	153.0	153.2	153.0
40°	157.4	157.2	157.7	158.5	152.9	153.7	151.9	149.7	150.2	150.3	150.3
41°	154.9	154.6	155.0	156.0	150.1	151.1	149.1	146.9	147.4	147.6	147.4
42°	152.2	152.0	152.4	153.4	147.5	148.4	146.2	144.1	144.5	144.8	144.7
43°	149.5	149.3	149.7	150.5	144.6	145.6	143.6	141.2	141.8	141.9	141.8
44°	146.6	146.4	147.0	147.8	141.7	142.8	140.5	138.5	138.9	138.9	139.2

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CATALOG NUMBER: HLC4FS1E-24P-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	143.9	143.7	144.1	145.1	138.9	139.8	137.9	135.7	136.1	136.1	136.1
46°	140.9	140.9	141.4	142.2	136.2	136.8	134.9	132.7	133.0	133.2	133.0
47°	138.1	137.9	138.6	139.4	133.0	134.0	131.9	129.6	129.9	130.2	129.9
48°	135.3	135.1	135.8	136.6	130.2	131.1	128.8	126.6	127.1	127.1	127.1
49°	132.4	132.2	132.7	133.8	127.1	128.2	126.0	123.6	124.0	124.0	124.0
50°	129.6	129.4	129.8	130.7	124.3	125.1	122.9	120.5	121.0	121.2	121.2
51°	126.4	126.2	127.0	127.8	121.2	122.0	120.1	117.6	117.9	117.9	117.9
52°	123.5	123.3	123.8	124.9	118.3	119.2	116.8	114.4	114.6	114.8	114.9
53°	120.6	120.4	120.8	121.7	115.2	116.2	113.6	111.4	111.8	112.2	112.1
54°	117.3	117.4	117.9	118.7	112.3	112.8	110.6	108.1	108.6	108.7	108.6
55°	114.3	114.1	114.8	115.7	108.9	110.0	107.6	105.0	105.3	105.7	105.6
56°	111.6	111.4	111.9	112.9	105.9	106.7	104.6	102.1	102.3	102.5	102.5
57°	108.5	108.3	108.8	109.7	102.7	103.4	101.4	98.9	99.2	99.5	99.4
58°	105.1	105.3	105.7	106.6	99.7	100.5	98.3	95.8	95.8	96.3	96.2
59°	102.1	101.9	102.7	103.5	96.6	97.6	95.1	92.5	92.8	92.8	92.8
60°	99.1	98.9	99.4	100.3	93.6	94.5	91.8	89.2	89.5	89.8	89.8
61°	96.0	95.8	96.3	97.5	90.4	91.1	88.8	86.3	86.3	86.5	86.6
62°	92.7	92.8	93.3	94.2	87.1	88.1	85.7	83.3	83.6	83.5	83.5
63°	89.7	89.6	90.0	91.2	84.0	84.8	82.6	80.0	80.2	80.5	80.4
64°	86.7	86.5	87.0	87.8	81.0	81.8	79.6	76.8	77.2	77.4	77.2
65°	83.3	83.5	84.0	84.8	78.0	78.8	76.3	73.7	73.9	74.3	74.0
66°	80.4	80.2	81.0	81.9	75.0	75.8	73.1	70.8	70.9	70.9	71.0
67°	77.3	77.2	78.0	78.8	71.8	72.4	70.1	67.5	67.8	68.0	67.8
68°	74.4	74.2	74.7	75.5	68.9	69.6	67.0	64.7	64.9	65.1	65.1
69°	71.2	71.1	71.8	72.7	65.8	66.3	64.3	61.5	61.9	61.9	62.2
70°	68.2	68.0	68.8	69.6	62.9	63.6	61.2	58.4	58.7	58.9	59.1
71°	65.2	65.1	65.8	66.7	60.0	60.8	58.3	55.7	55.9	56.0	56.1
72°	62.1	62.2	62.7	63.5	56.9	57.6	55.3	52.7	52.7	53.2	53.0
73°	59.2	59.4	59.8	60.6	54.2	54.8	52.3	49.8	50.0	50.1	50.4
74°	56.4	56.3	57.0	57.8	51.2	51.9	49.7	47.2	47.3	47.4	47.5
75°	53.7	53.6	54.0	54.8	48.4	49.2	47.0	44.3	44.5	44.8	44.8
76°	50.7	50.8	51.2	52.0	45.8	46.4	44.3	41.6	41.8	42.1	42.1
77°	47.9	47.9	48.5	49.3	43.1	43.8	41.6	39.0	39.1	39.4	39.4
78°	45.3	45.2	45.6	46.6	40.6	41.3	38.8	36.5	36.5	36.7	37.0
79°	42.7	42.6	43.0	44.0	38.0	38.5	36.5	34.1	34.0	34.1	34.4
80°	40.2	40.0	40.5	41.2	35.5	36.2	34.0	31.8	31.6	31.8	32.1
81°	37.5	37.4	38.0	38.8	33.3	33.7	31.8	29.4	29.4	29.5	29.9
82°	35.1	35.0	35.4	36.4	30.9	31.3	29.4	27.1	27.3	27.4	27.6
83°	32.8	32.6	33.0	33.7	28.8	29.3	27.2	25.1	25.0	25.0	25.3
84°	30.3	30.4	30.8	31.5	26.6	27.0	25.1	22.9	23.0	23.0	23.2
85°	28.1	27.9	28.5	29.3	24.3	24.8	23.1	21.0	21.0	21.2	21.3
86°	26.0	25.9	26.4	27.2	22.4	23.0	21.0	19.2	19.2	19.2	19.6
87°	24.0	23.9	24.3	25.0	20.6	21.0	19.5	17.6	17.3	17.6	17.9
88°	21.9	21.9	22.3	23.0	19.0	19.3	17.6	15.8	15.6	15.9	16.1
89°	20.1	19.9	20.4	21.1	17.3	17.6	16.0	14.2	4.5	14.2	14.6

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CATALOG NUMBER: HLC4FS1E-24P-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	18.3	18.2	18.7	19.4	15.7	16.0	14.5	12.8	0.0	12.8	13.0
91°	16.6	16.5	16.9	17.7	14.1	14.4	12.9	11.4	0.0	11.4	11.7
92°	15.2	14.9	15.2	15.9	12.6	12.9	11.6	10.2	0.0	10.2	10.5
93°	13.5	13.3	13.8	14.4	11.4	11.6	10.4	9.1	0.0	9.1	9.3
94°	3.9	11.9	12.4	13.1	10.1	10.4	9.1	8.0	0.0	8.0	8.2
95°	0.0	10.6	10.9	11.6	9.1	9.2	8.1	7.0	0.0	7.0	7.2
96°	0.0	9.5	9.8	10.3	7.9	8.2	7.2	6.0	0.0	6.0	6.4
97°	0.0	8.4	8.6	9.2	7.0	7.2	6.2	5.1	0.0	5.2	5.5
98°	0.0	7.3	7.7	8.1	6.2	6.3	5.3	4.4	0.0	4.6	4.9
99°	0.0	6.4	6.6	7.2	5.4	5.5	4.6	3.8	0.2	3.9	4.3
100°	0.0	5.5	5.8	6.2	4.8	4.8	3.9	3.2	0.3	3.3	3.5
101°	0.0	4.8	5.1	5.5	4.1	4.1	3.3	2.6	0.2	2.7	3.1
102°	0.0	4.0	4.4	4.8	3.5	3.6	2.7	2.0	0.3	2.3	2.5
103°	0.0	3.5	3.8	4.2	3.0	2.9	2.2	1.5	0.3	1.7	2.0
104°	0.0	2.9	3.2	3.7	2.5	2.3	1.8	1.2	0.2	1.3	1.7
105°	0.2	2.3	2.7	3.2	2.1	2.0	1.3	0.8	0.2	0.9	1.5
106°	0.2	1.8	2.2	2.7	1.8	1.6	1.1	0.6	0.2	0.6	1.1
107°	0.2	1.4	1.9	2.3	1.5	1.3	0.7	0.4	0.2	0.6	1.0
108°	0.2	1.1	1.6	1.9	1.3	1.0	0.6	0.3	0.2	0.4	0.9
109°	0.2	0.9	1.3	1.6	1.1	0.7	0.5	0.3	0.2	0.5	0.8
110°	0.2	0.8	1.1	1.4	1.1	0.7	0.5	0.3	0.2	0.5	0.8
111°	0.2	0.6	1.0	1.3	1.2	0.8	0.4	0.4	0.2	0.5	0.9
112°	0.3	0.6	0.9	1.1	1.2	0.8	0.5	0.4	0.2	0.5	0.9
113°	0.3	0.6	0.9	1.1	1.3	0.9	0.5	0.3	0.1	0.5	0.9
114°	0.3	0.6	1.0	1.2	1.3	0.9	0.6	0.4	0.2	0.5	1.0
115°	0.3	0.7	1.0	1.3	1.4	1.0	0.6	0.4	0.2	0.5	1.0
116°	0.3	0.7	1.1	1.4	1.5	1.0	0.6	0.4	0.2	0.5	1.0
117°	0.3	0.8	1.1	1.4	1.6	1.1	0.6	0.4	0.2	0.5	1.1
118°	0.3	0.8	1.2	1.4	1.5	1.2	0.7	0.4	0.2	0.6	1.2
119°	0.3	0.9	1.3	1.6	1.5	1.1	0.7	0.4	0.1	0.6	1.2
120°	0.3	0.9	1.4	1.6	0.9	1.2	0.7	0.5	0.2	0.6	1.1
121°	0.3	1.0	1.3	1.7	0.7	1.2	0.8	0.5	0.2	0.6	1.1
122°	0.3	0.9	1.3	1.8	0.3	1.2	0.8	0.5	0.2	0.6	1.2
123°	0.3	1.0	1.4	1.8	0.2	1.3	0.8	0.5	0.2	0.6	1.2
124°	0.3	0.9	1.3	1.8	0.2	1.3	0.7	0.4	0.2	0.6	1.2
125°	0.3	1.0	1.4	1.9	0.2	1.3	0.7	0.5	0.2	0.5	1.2
126°	0.3	1.0	1.4	1.9	0.3	1.3	0.8	0.4	0.1	0.6	1.2
127°	0.3	0.9	1.4	1.9	0.3	1.4	0.8	0.6	0.2	0.6	1.1
128°	0.3	1.0	1.3	1.9	0.2	1.3	0.9	0.6	0.2	0.5	1.1
129°	0.3	0.9	1.4	1.9	0.3	1.4	1.0	0.5	0.2	0.5	1.1
130°	0.2	0.9	1.3	1.9	0.3	1.4	0.9	0.6	0.2	0.5	1.1
131°	0.2	0.9	1.4	1.9	0.2	1.4	1.0	0.6	0.2	0.5	1.0
132°	0.2	0.8	1.3	1.9	0.3	1.5	1.0	0.6	0.2	0.5	1.0
133°	0.2	0.9	1.3	1.9	0.3	1.5	0.9	0.4	0.2	0.5	1.1
134°	0.2	0.8	1.3	1.9	0.2	1.5	1.0	0.6	0.2	0.4	1.0

TEST NUMBER: P1219799

CATALOG NUMBER: HLC4FS1E-24P-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
135°	0.2	0.8	1.4	1.9	0.3	1.5	1.0	0.6	0.2	0.4	1.0
136°	0.2	0.8	1.4	1.8	0.3	1.6	1.1	0.6	0.2	0.4	1.1
137°	0.2	0.7	1.3	1.9	0.3	1.7	1.1	0.7	0.3	0.5	1.2
138°	0.2	0.6	1.3	1.8	0.3	1.7	1.0	0.7	0.3	0.4	1.1
139°	0.2	0.6	1.4	1.8	0.3	1.7	1.1	0.7	0.3	0.4	1.0
140°	0.2	0.6	1.5	1.9	0.3	1.8	1.1	0.7	0.3	0.3	0.9
141°	0.2	0.7	1.5	1.9	0.3	1.9	1.0	0.6	0.2	0.3	0.7
142°	0.2	0.7	1.4	1.9	0.3	2.4	1.0	0.7	0.2	0.4	0.7
143°	0.2	0.6	1.4	1.9	0.3	2.4	1.1	0.7	0.2	0.3	0.7
144°	0.2	0.7	1.4	1.9	0.3	2.2	1.1	0.7	0.2	0.3	0.7
145°	0.2	0.7	1.3	1.8	0.3	2.8	1.1	0.5	0.1	0.4	0.7
146°	0.2	0.7	1.3	1.8	0.3	2.6	1.1	0.7	0.1	0.3	0.7
147°	0.2	0.7	1.3	1.8	0.3	2.4	1.1	0.7	0.2	0.4	0.6
148°	0.2	0.7	1.3	1.8	0.3	2.5	1.1	0.6	0.3	0.3	0.7
149°	0.2	0.7	1.2	1.8	0.3	2.5	1.1	0.5	0.3	0.2	0.9
150°	0.2	0.7	1.3	1.9	0.3	2.2	1.1	0.5	0.3	0.3	0.8
151°	0.3	0.6	1.2	1.9	0.3	2.0	1.1	0.5	0.3	0.3	0.7
152°	0.2	0.7	1.3	2.7	0.4	2.0	1.1	0.4	0.3	0.3	0.7
153°	0.3	0.7	1.3	2.6	0.2	1.9	1.1	0.3	0.3	0.2	0.8
154°	0.3	0.7	1.8	1.9	0.3	1.8	1.0	0.3	0.4	0.2	0.9
155°	0.3	0.7	1.8	1.9	0.3	1.5	0.9	0.3	0.3	0.2	0.7
156°	0.3	0.7	1.6	2.1	0.3	1.3	1.1	0.3	0.4	0.2	0.5
157°	0.3	0.6	1.4	2.2	0.3	1.3	1.0	0.3	0.3	0.2	0.6
158°	0.2	0.7	1.5	2.1	0.3	1.2	0.9	0.3	0.3	0.2	0.5
159°	0.3	0.7	1.7	2.0	0.2	1.4	0.9	0.4	0.3	0.2	0.4
160°	0.3	0.6	1.7	1.9	0.3	1.7	0.7	0.4	0.3	0.2	0.5
161°	0.3	0.7	1.7	1.9	0.3	1.4	0.7	0.3	0.3	0.2	0.3
162°	0.3	0.6	1.6	1.9	0.3	0.7	0.4	0.5	0.3	0.2	0.4
163°	0.3	0.7	1.6	1.9	0.3	0.7	0.3	0.4	0.3	0.2	0.4
164°	0.2	0.6	1.5	1.8	0.3	0.5	0.2	0.4	0.2	0.2	0.3
165°	0.3	0.7	1.3	1.6	0.2	0.4	0.2	0.4	0.1	0.2	0.4
166°	0.3	0.7	1.2	1.3	0.2	0.2	0.2	0.4	0.2	0.2	0.3
167°	0.3	0.7	1.0	0.9	0.2	0.1	0.2	0.3	0.2	0.2	0.2
168°	0.3	0.6	0.9	0.7	0.2	0.2	0.3	0.2	0.2	0.1	0.2
169°	0.2	0.6	0.8	0.4	0.1	0.2	0.3	0.3	0.1	0.1	0.1
170°	0.2	0.6	0.6	0.4	0.1	0.2	0.3	0.2	0.1	0.1	0.1
171°	0.3	0.6	0.5	0.3	0.2	0.2	0.3	0.1	0.1	0.1	0.1
172°	0.2	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
173°	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2
174°	0.2	0.2	0.2	0.2	0.0	0.1	0.1	0.1	0.1	0.2	0.1
175°	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
176°	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
177°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
178°	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
179°	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



TEST NUMBER: P1219799
CATALOG NUMBER: HLC4FS1E-24P-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
180°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

TEST NUMBER: P1219799

CATALOG NUMBER: HLC4FS1E-24P-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	213.6	213.6	213.6	213.6	213.6	213.6
1°	213.4	213.6	213.5	213.6	213.8	213.6
2°	213.2	213.5	213.4	213.5	213.7	213.6
3°	212.8	213.4	213.2	213.4	213.6	213.5
4°	212.4	213.1	213.0	213.2	213.4	213.3
5°	212.0	212.8	212.7	212.9	213.2	213.0
6°	211.3	212.4	212.2	212.5	212.8	212.7
7°	210.7	211.9	211.7	212.1	212.4	212.2
8°	210.0	211.4	211.2	211.5	212.0	211.8
9°	209.1	210.7	210.5	210.9	211.4	211.2
10°	208.3	210.0	209.8	210.2	210.7	210.5
11°	207.3	209.3	208.9	209.4	210.0	209.7
12°	206.3	208.3	208.1	208.6	209.2	209.0
13°	205.2	207.4	207.0	207.7	208.3	208.0
14°	203.9	206.4	205.9	206.6	207.3	207.0
15°	202.7	205.3	204.9	205.5	206.2	205.9
16°	201.4	204.0	203.5	204.4	205.2	204.8
17°	199.9	202.8	202.3	203.1	203.9	203.5
18°	198.4	201.6	201.0	201.8	202.6	202.2
19°	196.8	200.1	199.6	200.4	201.4	200.9
20°	195.2	198.6	198.0	198.9	200.0	199.6
21°	193.6	197.1	196.4	197.3	198.5	197.9
22°	191.6	195.5	194.8	195.8	196.9	196.4
23°	189.8	193.9	193.1	194.1	195.3	194.8
24°	187.8	192.0	191.3	192.4	193.5	193.1
25°	186.0	190.2	189.5	190.7	191.7	191.2
26°	183.9	188.3	187.6	188.7	189.9	189.4
27°	181.9	186.4	185.5	186.8	187.9	187.5
28°	179.8	184.4	183.5	184.9	186.0	185.4
29°	177.6	182.3	181.5	182.7	184.1	183.4
30°	175.4	180.1	179.4	180.6	182.0	181.4
31°	173.0	178.0	177.0	178.5	180.0	179.3
32°	170.6	175.8	174.9	176.4	177.5	177.1
33°	168.3	173.3	172.6	173.9	175.4	174.7
34°	165.7	171.0	170.3	171.6	172.8	172.4
35°	163.3	168.7	167.8	169.3	170.6	169.9
36°	160.7	166.3	165.3	166.8	168.3	167.6
37°	158.0	163.6	163.0	164.3	165.9	165.2
38°	155.5	161.1	160.2	161.9	163.5	162.7
39°	152.8	158.7	157.7	159.1	160.8	160.0
40°	149.9	156.0	155.1	156.5	158.2	157.4
41°	147.2	153.4	152.4	153.9	155.5	154.9
42°	144.3	150.5	149.5	151.3	152.8	152.2
43°	141.6	147.8	146.8	148.6	150.2	149.5
44°	138.7	144.9	144.1	145.7	147.5	146.6

TEST NUMBER: P1219799

CATALOG NUMBER: HLC4FS1E-24P-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	135.9	142.1	141.1	142.9	144.9	143.9
46°	132.7	139.3	138.3	140.2	141.8	140.9
47°	129.7	136.5	135.5	137.1	139.0	138.1
48°	126.6	133.7	132.6	134.3	136.2	135.3
49°	123.7	130.5	129.5	131.4	133.4	132.4
50°	120.7	127.6	126.6	128.6	130.2	129.6
51°	117.8	124.4	123.7	125.3	127.3	126.4
52°	114.6	121.5	120.8	122.4	124.4	123.5
53°	111.5	118.5	117.4	119.5	121.2	120.6
54°	108.5	115.5	114.4	116.5	118.3	117.3
55°	105.1	112.3	111.8	113.1	115.2	114.3
56°	102.3	109.3	108.3	110.4	112.4	111.6
57°	99.0	106.2	105.2	107.3	109.1	108.5
58°	95.9	103.2	102.2	104.0	106.1	105.1
59°	92.7	100.1	99.1	100.9	103.0	102.1
60°	89.4	96.8	96.1	97.9	99.8	99.1
61°	86.5	93.8	92.8	94.8	96.7	96.0
62°	83.3	90.8	89.7	91.6	93.6	92.7
63°	80.4	87.4	86.7	88.5	90.7	89.7
64°	77.0	84.4	83.4	85.5	87.3	86.7
65°	74.0	81.4	80.4	82.2	84.3	83.3
66°	70.7	78.3	77.3	79.2	81.3	80.4
67°	67.8	75.1	74.2	76.2	78.2	77.3
68°	64.8	72.1	71.1	73.2	75.0	74.4
69°	61.9	69.0	68.1	70.0	72.1	71.2
70°	59.0	65.9	65.3	67.0	69.1	68.2
71°	55.9	63.0	62.4	64.1	66.1	65.2
72°	53.2	60.2	59.3	61.2	63.0	62.1
73°	50.2	57.1	56.6	58.2	60.1	59.2
74°	47.6	54.3	53.5	55.4	57.3	56.4
75°	44.8	51.5	50.7	52.6	54.3	53.7
76°	42.1	48.8	48.0	49.9	51.5	50.7
77°	39.5	46.1	45.4	47.0	48.7	47.9
78°	37.0	43.3	42.8	44.3	46.1	45.3
79°	34.7	40.8	40.2	41.8	43.2	42.7
80°	32.2	38.4	37.7	39.4	40.7	40.2
81°	30.0	35.7	35.3	36.7	38.3	37.5
82°	27.8	33.4	33.0	34.4	35.6	35.1
83°	25.6	31.2	30.6	32.1	33.3	32.8
84°	23.5	29.0	28.5	29.8	31.0	30.3
85°	21.7	26.7	26.4	27.5	28.8	28.1
86°	19.7	24.7	24.4	25.5	26.8	26.0
87°	18.2	22.7	22.3	23.6	24.6	24.0
88°	16.4	21.0	20.5	21.7	22.6	21.9
89°	14.9	19.2	18.8	19.7	20.7	20.1

TEST NUMBER: P1219799

CATALOG NUMBER: HLC4FS1E-24P-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	13.4	17.4	17.2	18.0	19.0	18.3
91°	11.9	15.9	15.6	16.5	17.3	16.6
92°	10.7	14.4	14.0	14.9	15.6	15.2
93°	9.6	12.9	12.7	13.4	14.2	13.5
94°	8.5	11.5	11.4	12.1	12.8	3.9
95°	7.4	10.3	10.2	10.9	11.3	0.0
96°	6.5	9.2	9.0	9.7	10.1	0.0
97°	5.8	8.2	8.0	8.6	9.0	0.0
98°	5.1	7.1	7.1	7.6	8.0	0.0
99°	4.4	6.2	6.2	6.7	7.0	0.0
100°	3.8	5.5	5.4	5.8	6.1	0.0
101°	3.3	4.9	4.8	5.0	5.4	0.0
102°	2.9	4.3	4.1	4.4	4.7	0.0
103°	2.3	3.7	3.6	3.8	4.0	0.0
104°	2.0	3.3	3.1	3.2	3.4	0.0
105°	1.8	2.8	2.6	2.7	2.7	0.2
106°	1.5	2.3	2.1	2.2	2.2	0.2
107°	1.3	2.0	1.8	1.9	1.6	0.2
108°	1.1	1.7	1.6	1.6	1.2	0.2
109°	1.2	1.5	1.4	1.3	0.9	0.2
110°	1.1	1.4	1.1	1.1	0.6	0.2
111°	1.2	1.3	1.1	0.9	0.6	0.2
112°	1.3	1.2	0.9	0.7	0.4	0.3
113°	1.4	1.2	0.9	0.6	0.4	0.3
114°	1.5	1.3	1.1	0.6	0.3	0.3
115°	1.5	1.3	1.1	0.6	0.3	0.3
116°	1.6	1.4	1.2	0.6	0.2	0.3
117°	1.6	1.5	1.2	0.6	0.3	0.3
118°	1.7	1.5	1.3	0.6	0.1	0.3
119°	1.7	1.5	1.2	0.7	0.3	0.3
120°	1.7	1.6	1.3	0.8	0.3	0.3
121°	1.7	0.4	1.3	0.8	0.3	0.3
122°	1.7	0.4	1.3	0.7	0.2	0.3
123°	1.7	0.1	1.3	0.8	0.2	0.3
124°	1.6	0.2	1.3	0.8	0.3	0.3
125°	1.5	0.1	1.3	0.8	0.2	0.3
126°	1.4	0.2	1.3	0.8	0.2	0.3
127°	1.4	0.1	1.3	0.8	0.3	0.3
128°	1.4	0.1	1.2	0.8	0.2	0.3
129°	1.4	0.1	1.2	0.7	0.2	0.3
130°	1.3	0.1	1.2	0.8	0.2	0.2
131°	1.2	0.1	1.2	0.9	0.2	0.2
132°	1.2	0.1	1.1	0.7	0.2	0.2
133°	1.2	0.2	1.1	0.8	0.2	0.2
134°	1.2	0.1	1.2	0.7	0.2	0.2

TEST NUMBER: P1219799

CATALOG NUMBER: HLC4FS1E-24P-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
135°	1.2	0.2	1.2	0.8	0.2	0.2
136°	1.1	0.2	1.2	0.7	0.2	0.2
137°	1.1	0.2	1.2	0.8	0.2	0.2
138°	1.0	0.1	1.2	0.8	0.2	0.2
139°	1.0	0.2	1.1	0.8	0.2	0.2
140°	1.0	0.2	1.2	0.8	0.1	0.2
141°	1.1	0.2	1.2	0.8	0.2	0.2
142°	1.0	0.2	1.2	0.8	0.2	0.2
143°	0.9	0.2	1.2	0.8	0.1	0.2
144°	0.9	0.2	1.3	0.8	0.2	0.2
145°	0.9	0.2	1.9	0.8	0.2	0.2
146°	0.9	0.2	2.1	0.7	0.2	0.2
147°	0.9	0.1	1.4	0.7	0.2	0.2
148°	0.8	0.1	1.1	0.5	0.2	0.2
149°	0.7	0.1	1.1	0.3	0.2	0.2
150°	0.6	0.1	1.1	0.3	0.2	0.2
151°	0.7	0.1	1.1	0.2	0.2	0.3
152°	0.7	0.2	1.3	0.3	0.2	0.2
153°	0.6	0.1	1.1	0.4	0.1	0.3
154°	0.6	0.1	0.8	0.4	0.2	0.3
155°	0.5	0.2	0.7	0.5	0.1	0.3
156°	0.3	0.2	0.7	0.4	0.1	0.3
157°	0.4	0.1	0.8	0.4	0.1	0.3
158°	0.5	0.2	0.6	0.4	0.1	0.2
159°	0.5	0.2	0.5	0.4	0.1	0.3
160°	0.4	0.2	0.3	0.5	0.1	0.3
161°	0.4	0.2	0.1	0.3	0.1	0.3
162°	0.3	0.2	0.1	0.3	0.2	0.3
163°	0.2	0.1	0.1	0.3	0.1	0.3
164°	0.3	0.1	0.2	0.3	0.1	0.2
165°	0.2	0.1	0.2	0.2	0.2	0.3
166°	0.3	0.1	0.2	0.2	0.2	0.3
167°	0.2	0.1	0.2	0.1	0.2	0.3
168°	0.2	0.1	0.3	0.2	0.2	0.3
169°	0.2	0.1	0.2	0.1	0.2	0.2
170°	0.1	0.1	0.1	0.1	0.2	0.2
171°	0.1	0.1	0.1	0.1	0.1	0.3
172°	0.2	0.1	0.1	0.1	0.1	0.2
173°	0.1	0.2	0.1	0.1	0.1	0.2
174°	0.1	0.0	0.1	0.1	0.1	0.2
175°	0.1	0.1	0.1	0.1	0.2	0.2
176°	0.2	0.1	0.1	0.1	0.1	0.1
177°	0.0	0.1	0.1	0.1	0.1	0.1
178°	0.1	0.1	0.1	0.1	0.1	0.2
179°	0.1	0.1	0.1	0.1	0.1	0.1

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TEST NUMBER: P1219799
CATALOG NUMBER: HLC4FS1E-24P-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
180°	0.1	0.1	0.1	0.1	0.1	0.1

TEST NUMBER: P1219799

CATALOG NUMBER: HLC4FS1E-24P-2700K

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	23.2	24.9	23.6	25.2	25.6	23.1	24.7	23.5	25.0	25.4
	3H	25.3	26.8	25.7	27.2	27.6	25.1	26.5	25.5	26.9	27.3
	4H	26.2	27.6	26.7	28.0	28.5	25.9	27.3	26.3	27.7	28.1
	6H	27.1	28.4	27.5	28.8	29.3	26.7	28.0	27.1	28.4	28.9
	8H	27.5	28.8	28.0	29.2	29.6	27.1	28.3	27.5	28.7	29.2
	12H	27.9	29.1	28.4	29.6	30.0	27.5	28.6	27.9	29.1	29.6
4H	2H	23.9	25.3	24.4	25.7	26.1	23.7	25.1	24.2	25.5	25.9
	3H	26.3	27.4	26.7	27.9	28.3	26.0	27.2	26.4	27.6	28.1
	4H	27.3	28.4	27.8	28.9	29.4	27.0	28.1	27.5	28.6	29.1
	6H	28.4	29.3	28.9	29.8	30.3	28.0	29.0	28.5	29.5	30.0
	8H	28.9	29.8	29.4	30.3	30.8	28.5	29.4	29.0	29.9	30.4
	12H	29.4	30.2	29.9	30.7	31.3	29.0	29.8	29.5	30.3	30.8
8H	4H	27.8	28.7	28.3	29.2	29.7	27.5	28.4	28.0	28.8	29.4
	6H	29.0	29.8	29.6	30.3	30.8	28.7	29.4	29.2	30.0	30.5
	8H	29.7	30.4	30.2	30.9	31.4	29.3	30.0	29.8	30.5	31.0
	12H	30.4	31.0	30.9	31.5	32.1	30.0	30.6	30.5	31.1	31.7
12H	4H	27.9	28.7	28.4	29.2	29.7	27.5	28.4	28.1	28.9	29.4
	6H	29.2	29.9	29.7	30.4	31.0	28.8	29.5	29.4	30.0	30.6
	8H	29.9	30.5	30.5	31.1	31.7	29.5	30.1	30.1	30.7	31.3

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