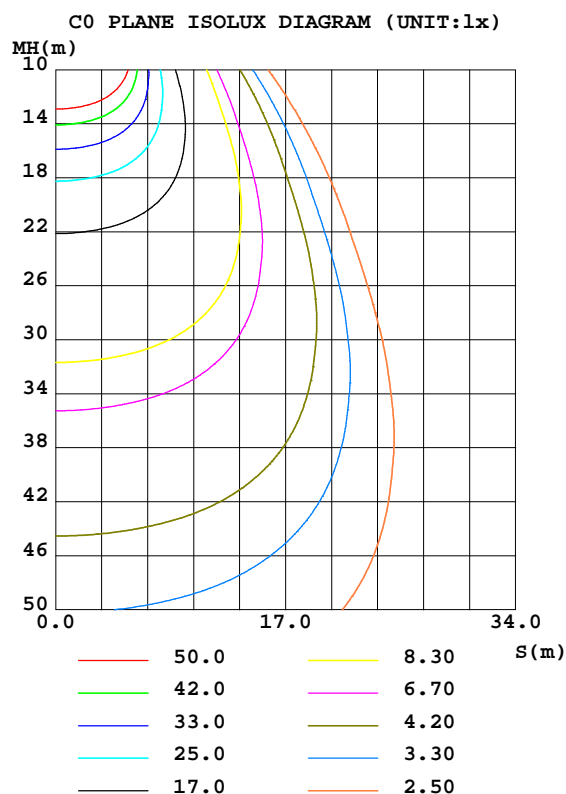
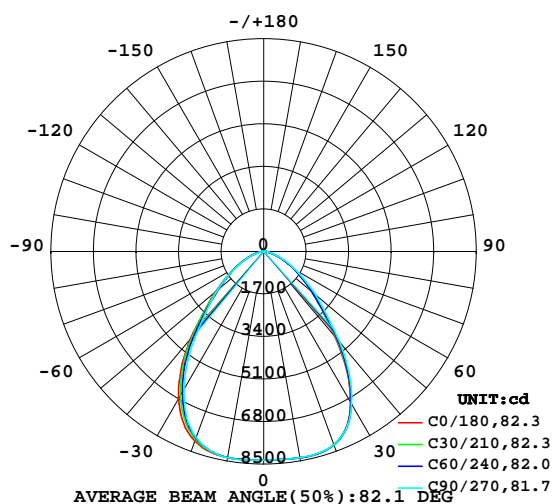


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:219.4V I:0.4909A P:104.3W PF:0.9684 Lamp Flux:16101.6x1 lm		
NAME: HB2010-100S-57K_200218	TYPE:LED	WEIGHT:
SPEC.:HB2010-100S-57K_200218	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 154.36 lm/W			
MODEIHB2010-100S-57K_200218		Imax(cd)	8408	S/MH(C0/180)	1.18
NOMINAL POWER(W)	100	LOR(%)	100.0	S/MH(C90/270)	1.14
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	16102	η UP,DN(C0-180)	0.7,50.5
NOMINAL FLUX(lm)	16101.6	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.8,48.0
LAMPS INSIDE	1	η up(%)	1.5	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	220	η down(%)	98.5	CIBSE SHR MAX	1.15

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	8374	8371	8368	8377	8360	8355	8363	8391	0- 10	798.3	798.3	4.96,4.96
20	8219	8235	8205	8159	8060	7960	7914	8066	10- 20	2347	3145	19.5,19.5
30	6943	7014	7028	6965	6802	6566	6382	6603	20- 30	3479	6624	41.1,41.1
40	4434	4535	4720	4658	4560	4328	4075	4149	30- 40	3532	10156	63.1,63.1
50	2515	2515	2720	2664	2525	2379	2408	2430	40- 50	2591	12747	79.2,79.2
60	1368	1368	1449	1436	1333	1250	1282	1306	50- 60	1690	14438	89.7,89.7
70	579.9	610.0	663.0	652.5	599.8	564.0	542.8	552.4	60- 70	948.1	15386	95.6,95.6
80	168.7	185.5	208.1	200.3	182.8	172.2	156.7	157.8	70- 80	381.2	15767	97.9,97.9
90	24.71	19.17	37.34	21.42	26.99	33.85	34.96	30.53	80- 90	96.66	15864	98.5,98.5
100	13.64	12.55	12.12	12.10	19.24	18.90	19.17	19.02	90-100	18.45	15882	98.6,98.6
110	20.15	20.64	21.70	20.52	27.45	28.04	28.90	28.09	100-110	21.00	15903	98.8,98.8
120	29.66	30.00	31.04	30.15	37.97	38.84	40.45	39.14	110-120	29.17	15932	98.9,98.9
130	39.85	39.49	41.23	39.87	48.64	49.03	51.39	49.08	120-130	35.61	15968	99.2,99.2
140	49.93	49.46	49.83	49.39	58.68	58.51	59.79	58.54	130-140	38.33	16006	99.4,99.4
150	58.81	58.38	58.29	58.55	66.64	66.37	66.92	66.26	140-150	36.60	16043	99.6,99.6
160	67.01	67.07	67.14	66.91	73.05	73.03	73.37	73.06	150-160	30.57	16073	99.8,99.8
170	75.60	75.52	75.24	75.41	79.01	78.88	78.62	78.44	160-170	20.81	16094	100,100
180	81.29	81.66	80.88	81.26	81.30	81.69	80.91	81.29	170-180	7.527	16102	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 11580 lm

%lum = 71.9%

%lamp = 71.9%

Conical surface Flux(120deg): 14438 lm

%lum = 89.7%

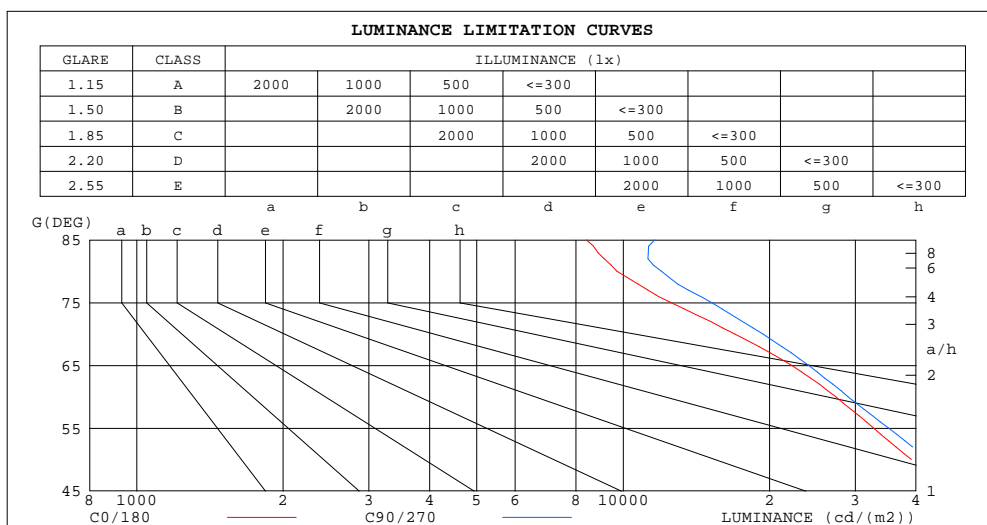
%lamp = 89.7%

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

LUMINANCE LIMITATION CURVES

Test:U:219.4V I:0.4909A P:104.3W PF:0.9684 Lamp Flux:16101.6x1 lm		
NAME: HB2010-100S-57K_200218	TYPE:LED	WEIGHT:
SPEC.:HB2010-100S-57K_200218	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	8405	11602
80	9712	11982
75	12537	15209
70	16957	19384
65	22204	24055
60	27363	28988
55	32714	35130
50	39127	42323
45	46795	49926

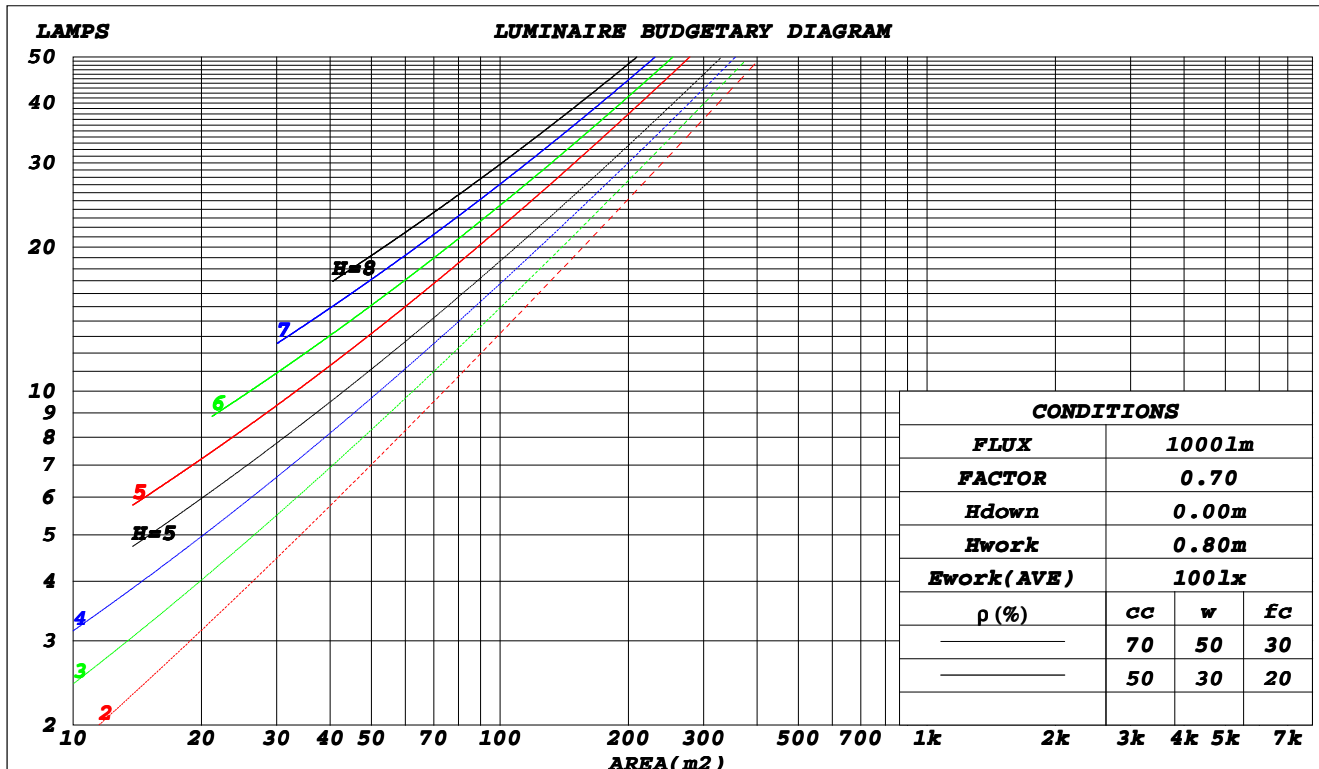
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:219.4V I:0.4909A P:104.3W PF:0.9684 Lamp Flux:16101.6x1 lm		
NAME: HB2010-100S-57K_200218	TYPE:LED	WEIGHT:
SPEC.:HB2010-100S-57K_200218	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	Coefficients of Utilization(CU)															
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	.99
1.0	1.07	1.04	1.01	1.05	1.02	.99	1.00	.98	.95	.96	.94	.92	.92	.91	.89	.87
2.0	.96	.91	.86	.94	.89	.85	.90	.86	.83	.87	.84	.81	.84	.81	.79	.77
3.0	.87	.80	.74	.85	.79	.74	.82	.77	.72	.79	.75	.71	.76	.73	.69	.68
4.0	.78	.71	.65	.77	.70	.65	.74	.68	.64	.72	.67	.63	.70	.65	.62	.60
5.0	.71	.63	.58	.70	.63	.57	.68	.62	.57	.66	.60	.56	.64	.59	.55	.53
6.0	.65	.57	.52	.64	.57	.51	.62	.56	.51	.61	.55	.50	.59	.54	.50	.48
7.0	.60	.52	.47	.59	.52	.46	.57	.51	.46	.56	.50	.46	.54	.49	.45	.43
8.0	.55	.47	.42	.54	.47	.42	.53	.46	.42	.52	.46	.42	.51	.45	.41	.39
9.0	.51	.44	.39	.50	.43	.38	.49	.43	.38	.48	.42	.38	.47	.42	.38	.36
10.0	.47	.40	.35	.47	.40	.35	.46	.40	.35	.45	.39	.35	.44	.39	.35	.33



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

WEC AND CCEC

Test:U:219.4V I:0.4909A P:104.3W PF:0.9684 Lamp Flux:16101.6x1 lm		
NAME: HB2010-100S-57K_200218	TYPE:LED	WEIGHT:
SPEC.:HB2010-100S-57K_200218	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

ρ_{cc}	80%			70%			50%			30%			10%			0	
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρ_{fc}	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.244	.139	.044	.236	.135	.043	.222	.128	.041	.210	.121	.039	.198	.115	.037		
2.0	.235	.129	.039	.228	.126	.039	.216	.120	.037	.205	.115	.036	.195	.110	.035		
3.0	.222	.118	.035	.216	.116	.035	.206	.112	.034	.196	.107	.033	.187	.104	.032		
4.0	.209	.109	.032	.204	.107	.032	.195	.103	.031	.186	.100	.030	.178	.097	.029		
5.0	.196	.100	.029	.192	.099	.029	.184	.096	.028	.176	.093	.028	.169	.090	.027		
6.0	.185	.093	.027	.181	.091	.026	.174	.089	.026	.167	.087	.025	.160	.084	.025		
7.0	.174	.086	.024	.171	.085	.024	.164	.083	.024	.158	.081	.024	.152	.079	.023		
8.0	.165	.080	.023	.161	.079	.022	.155	.078	.022	.150	.076	.022	.145	.074	.022		
9.0	.156	.075	.021	.153	.075	.021	.148	.073	.021	.142	.071	.020	.138	.070	.020		
10.0	.148	.071	.020	.145	.070	.020	.140	.069	.019	.136	.067	.019	.131	.066	.019		

ρ_{cc}	80%			70%			50%			30%			10%			0	
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρ_{fc}	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)										
0.0	.202	.202	.202	.172	.172	.172	.118	.118	.118	.068	.068	.068	.022	.022	.022		
1.0	.187	.168	.151	.160	.144	.130	.109	.099	.090	.063	.057	.052	.020	.018	.017		
2.0	.176	.144	.116	.151	.124	.101	.103	.086	.070	.060	.050	.041	.019	.016	.013		
3.0	.167	.125	.093	.143	.108	.080	.098	.075	.056	.057	.044	.033	.018	.014	.011		
4.0	.158	.112	.076	.136	.096	.066	.094	.067	.046	.054	.039	.027	.017	.013	.009		
5.0	.151	.101	.064	.130	.087	.056	.089	.061	.039	.052	.036	.023	.017	.012	.008		
6.0	.144	.092	.055	.124	.080	.048	.085	.056	.034	.050	.033	.020	.016	.011	.007		
7.0	.138	.085	.048	.119	.074	.042	.082	.052	.030	.048	.030	.018	.015	.010	.006		
8.0	.132	.079	.043	.114	.069	.038	.079	.048	.027	.046	.028	.016	.015	.009	.005		
9.0	.126	.074	.039	.109	.064	.034	.075	.045	.024	.044	.027	.014	.014	.009	.005		
10.0	.121	.070	.036	.105	.061	.031	.073	.043	.022	.042	.025	.013	.014	.008	.004		

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

UGR(Unified Glare Rating) Table

Test:U:219.4V I:0.4909A P:104.3W PF:0.9684 Lamp Flux:16101.6x1 lm										
NAME: HB2010-100S-57K_200218					TYPE:LED			WEIGHT:		
SPEC.:HB2010-100S-57K_200218					DIM.:			SERIAL No.:		
MFR.: ICEPIPE					SUR.:			Shielding Angle:		
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working 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	24.1	25.4	24.4	25.6	25.8	24.3	25.6	24.6	25.8	26.0
3H	24.6	25.8	24.9	26.0	26.3	24.9	26.1	25.2	26.3	26.6
4H	24.7	25.8	25.0	26.1	26.4	25.1	26.2	25.4	26.4	26.7
6H	24.8	25.8	25.1	26.1	26.4	25.1	26.2	25.5	26.5	26.8
8H	24.7	25.7	25.1	26.0	26.4	25.2	26.1	25.5	26.4	26.8
12H	24.7	25.7	25.1	26.0	26.3	25.2	26.1	25.5	26.4	26.7
4H 2H	24.3	25.4	24.6	25.7	26.0	24.5	25.6	24.8	25.9	26.1
3H	25.0	25.9	25.3	26.2	26.6	25.2	26.2	25.6	26.5	26.8
4H	25.2	26.0	25.5	26.4	26.7	25.5	26.3	25.9	26.7	27.0
6H	25.2	26.0	25.7	26.4	26.8	25.6	26.4	26.0	26.7	27.1
8H	25.3	26.0	25.7	26.4	26.8	25.7	26.4	26.1	26.7	27.2
12H	25.3	25.9	25.7	26.3	26.8	25.7	26.3	26.1	26.7	27.2
8H 4H	25.2	25.9	25.6	26.3	26.7	25.5	26.2	25.9	26.6	27.0
6H	25.3	25.9	25.8	26.3	26.8	25.7	26.3	26.2	26.7	27.1
8H	25.4	25.9	25.9	26.4	26.8	25.8	26.3	26.2	26.7	27.2
12H	25.4	25.9	25.9	26.3	26.8	25.8	26.3	26.3	26.7	27.3
12H 4H	25.2	25.8	25.6	26.2	26.6	25.5	26.1	25.9	26.5	26.9
6H	25.3	25.8	25.8	26.3	26.8	25.7	26.2	26.2	26.6	27.1
8H	25.4	25.8	25.9	26.3	26.8	25.8	26.2	26.3	26.7	27.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.7 / - 0.9					+ 0.6 / - 0.8				
1.5H	+ 0.6 / - 0.5					+ 0.6 / - 0.4				
2.0H	+ 1.1 / - 0.9					+ 1.2 / - 1.0				

CIE Pub.117 Corrected 16102 lm Total Lamp Luminous Flux.(8log(F/F0) = 9.7)

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

UTILIZATION FACTORS TABLE

Test:U:219.4V I:0.4909A P:104.3W PF:0.9684 Lamp Flux:16101.6x1 lm		
NAME: HB2010-100S-57K_200218	TYPE:LED	WEIGHT:
SPEC.:HB2010-100S-57K_200218	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

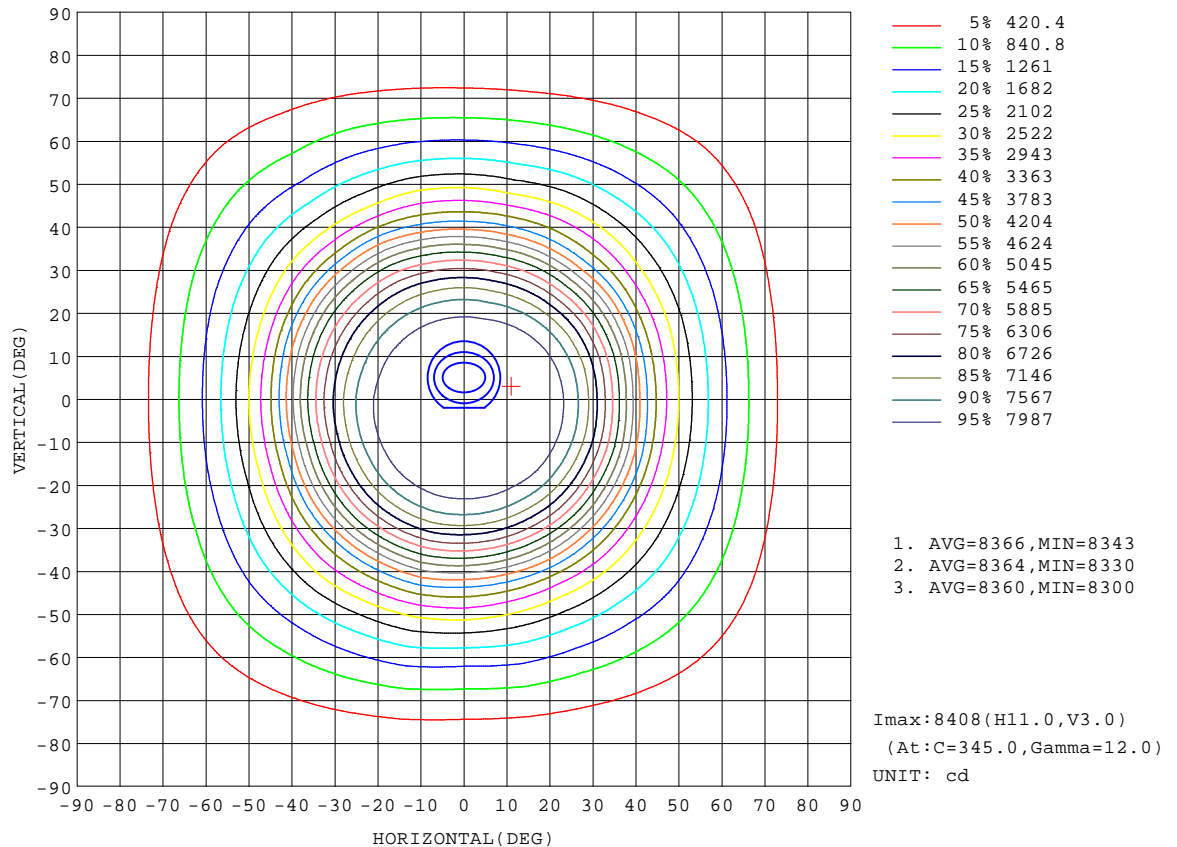
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	68	59	53	68	58	53	67	58	53	47
0.80	78	69	63	77	68	62	75	67	62	56
1.00	85	77	71	84	76	70	82	77	70	64
1.25	91	83	78	90	83	77	88	81	76	70
1.50	96	88	83	94	87	82	91	85	81	75
2.00	101	94	89	99	93	89	96	91	87	80
2.50	104	98	93	102	96	92	98	94	90	83
3.00	106	101	97	104	99	96	100	96	93	85
4.00	109	105	101	107	103	100	103	100	97	89
5.00	111	107	104	109	105	103	104	102	99	91
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

ISOCANDELA DIAGRAM

Test:U:219.4V I:0.4909A P:104.3W PF:0.9684 Lamp Flux:16101.6x1 lm		
NAME: HB2010-100S-57K_200218	TYPE:LED	WEIGHT:
SPEC.:HB2010-100S-57K_200218	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

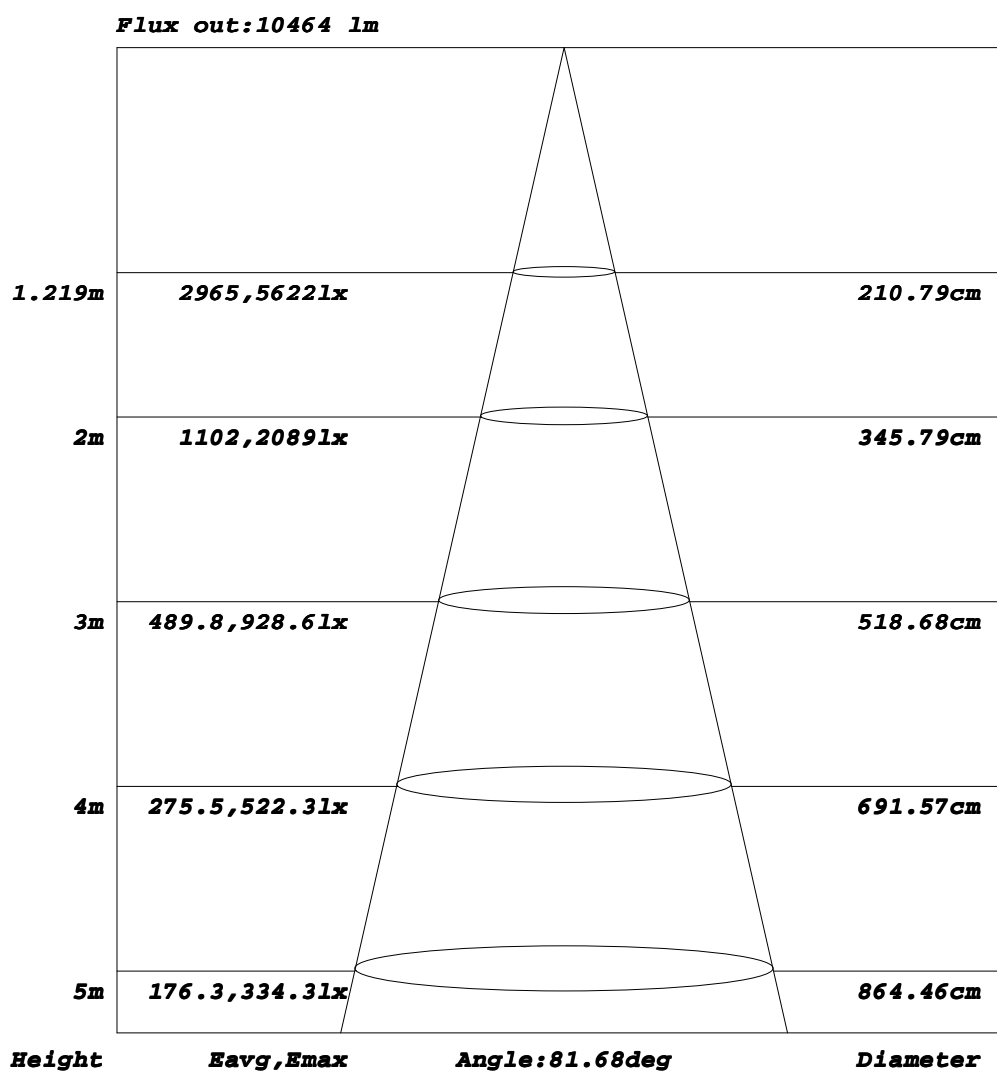


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

AAI Figure

Test:U:219.4V I:0.4909A P:104.3W PF:0.9684 Lamp Flux:16101.6x1 lm		
NAME: HB2010-100S-57K_200218	TYPE:LED	WEIGHT:
SPEC.:HB2010-100S-57K_200218	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:



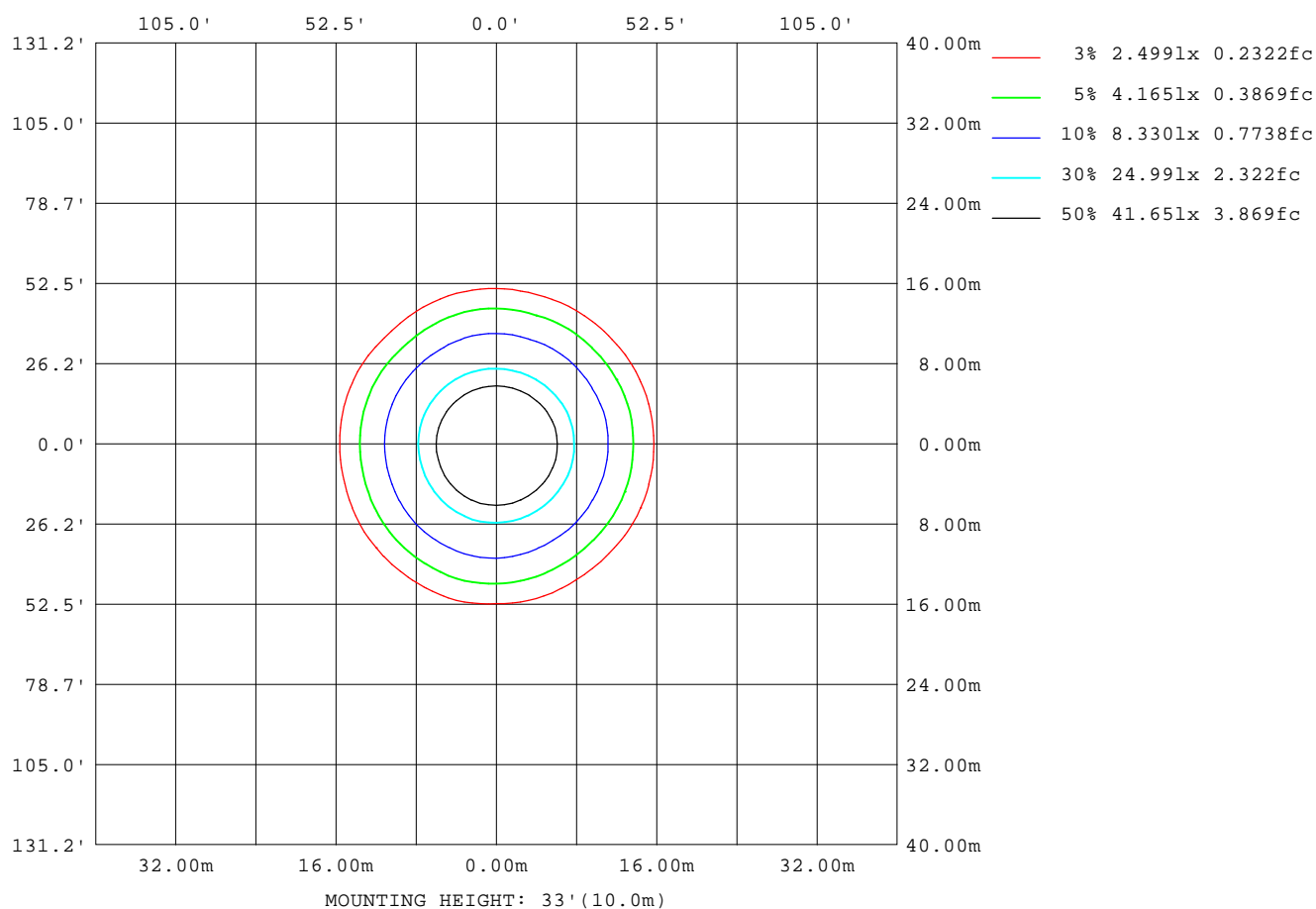
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

ISOLUX DIAGRAM

Test:U:219.4V I:0.4909A P:104.3W PF:0.9684 Lamp Flux:16101.6x1 lm		
NAME: HB2010-100S-57K_200218	TYPE:LED	WEIGHT:
SPEC.:HB2010-100S-57K_200218	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

LED Avg.L Report

Test:U:219.4V I:0.4909A P:104.3W PF:0.9684 Lamp Flux:16101.6x1 lm		
NAME: HB2010-100S-57K_200218	TYPE:LED	WEIGHT:
SPEC.:HB2010-100S-57K_200218	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

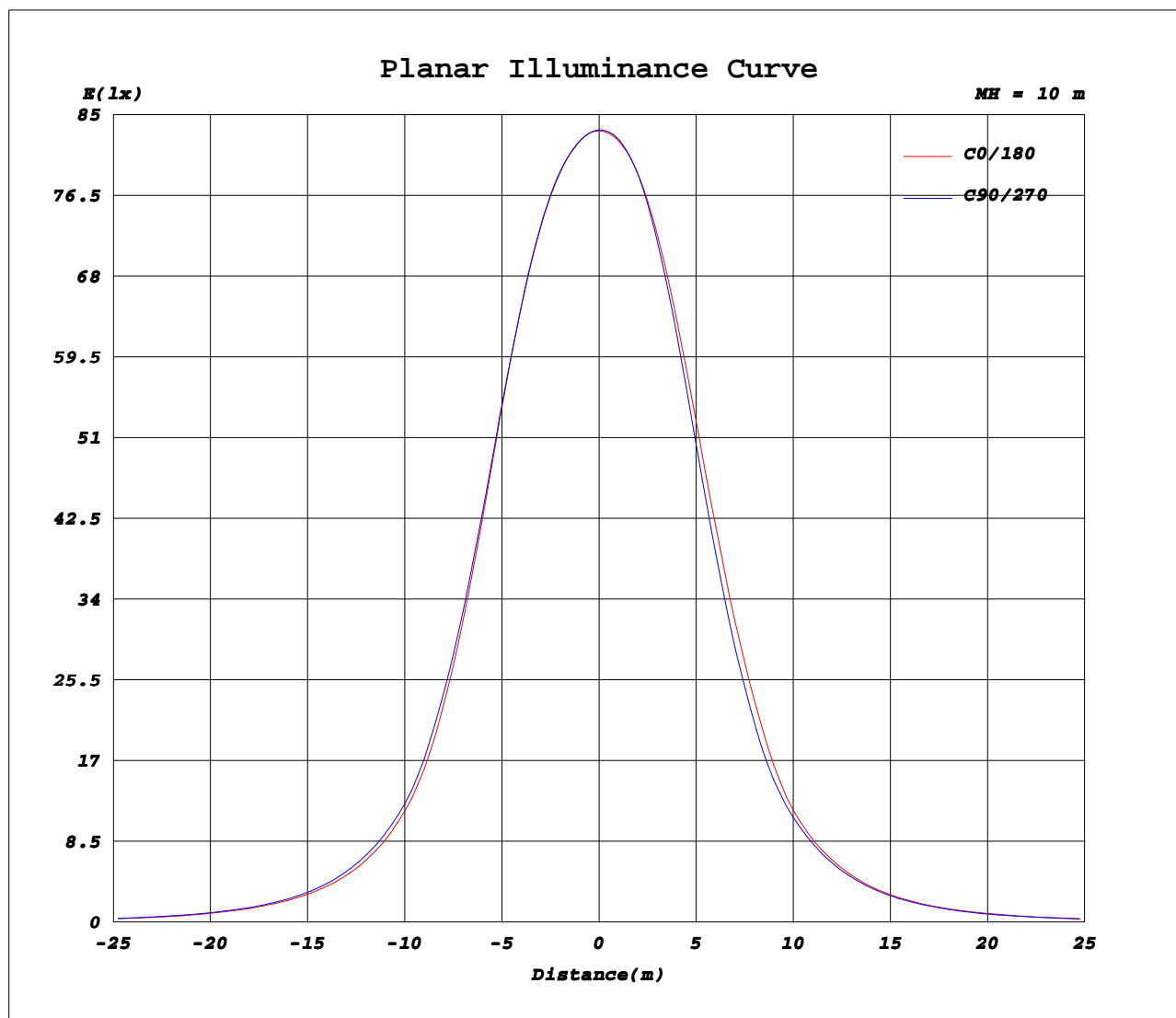
AvgL	cd/m2
L_0~180(65)av	22105
L_0~180(75)av	12934
L_0~180(85)av	8959
L_90~270(65)av	22331
L_90~270(75)av	13430
L_90~270(85)av	9729
L_45(65)av	21979
L_45(75)av	13179
L_45(85)av	9398

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LUC
Test Date: 17 Feb 2020

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity: 65.0%
Test Distance: 8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:219.4V I:0.4909A P:104.3W PF:0.9684 Lamp Flux:16101.6x1 lm		
NAME: HB2010-100S-57K_200218	TYPE:LED	WEIGHT:
SPEC.:HB2010-100S-57K_200218	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	8330	8331	8331	8334	8337	8338	8341	8344	8348	8352	8356	8357	8330	8331	8331	8334	8337	8338	8341
5	8344	8342	8342	8340	8340	8339	8343	8346	8354	8360	8367	8372	8347	8350	8352	8356	8358	8361	8365
10	8374	8372	8372	8371	8369	8368	8368	8369	8374	8377	8383	8386	8360	8360	8356	8355	8358	8360	8363
15	8374	8376	8375	8374	8367	8362	8361	8359	8355	8347	8337	8323	8294	8280	8268	8253	8248	8244	8247
20	8219	8235	8237	8235	8213	8208	8205	8201	8183	8159	8124	8094	8060	8014	7990	7960	7934	7916	7914
25	7788	7822	7831	7833	7801	7806	7804	7809	7780	7735	7660	7616	7587	7510	7459	7399	7355	7312	7297
30	6943	7006	7008	7014	6992	7013	7028	7059	7014	6965	6876	6816	6802	6729	6658	6566	6513	6424	6382
35	5781	5857	5843	5863	5873	5908	5954	6009	5946	5891	5812	5740	5768	5739	5648	5538	5483	5354	5266
40	4434	4550	4516	4535	4606	4647	4720	4816	4717	4658	4605	4519	4560	4559	4473	4328	4293	4164	4075
45	3309	3329	3315	3342	3369	3454	3530	3609	3523	3455	3403	3323	3339	3340	3286	3164	3165	3154	3127
50	2515	2507	2507	2515	2523	2621	2720	2742	2680	2664	2573	2495	2525	2485	2466	2379	2360	2433	2408
55	1876	1888	1894	1866	1897	1979	2015	2075	2003	1979	1923	1853	1857	1851	1827	1741	1763	1802	1790
60	1368	1389	1396	1368	1387	1467	1449	1524	1470	1436	1408	1350	1333	1358	1331	1250	1290	1300	1282
65	938	962	966	955	974	1038	1017	1077	1043	1001	992	946	930	950	927	867	901	893	871
70	580	600	607	610	624	670	663	701	680	652	638	609	600	608	598	564	576	563	543
75	324	339	345	354	365	389	394	415	403	382	366	348	345	346	341	323	326	314	302
80	169	177	180	186	191	203	208	219	211	200	190	182	183	180	179	172	171	162	157
85	73.3	75.5	79.5	85.2	90.3	95.9	101	106	101	93.1	85.2	79.7	82.9	81.3	82.7	80.3	78.2	72.5	68.5
90	24.7	20.9	18.3	19.2	25.5	33.5	37.3	36.5	29.7	21.4	18.6	20.5	27.0	28.0	32.6	33.8	35.6	34.5	35.0
95	11.7	11.7	11.5	10.6	10.9	13.5	15.0	14.9	12.2	10.3	11.0	11.7	16.7	16.5	16.0	16.0	16.7	18.1	19.2
100	13.6	13.3	13.1	12.6	12.4	12.2	12.1	12.0	12.0	12.1	12.7	13.1	19.2	19.4	19.4	18.9	18.7	19.0	19.2
105	16.3	16.2	16.6	16.9	16.6	16.6	16.3	16.0	15.7	16.2	16.5	16.3	22.9	23.1	23.2	23.1	23.1	23.3	23.6
110	20.2	20.0	20.1	20.6	21.8	21.7	21.7	21.4	21.0	20.5	20.2	20.1	27.5	27.7	28.1	28.0	27.9	28.3	28.9
115	24.6	24.6	24.6	25.3	26.2	26.5	26.9	26.5	25.8	25.2	24.7	24.8	32.6	32.7	32.9	33.4	33.7	34.1	34.6
120	29.7	29.5	29.3	30.0	30.8	30.9	31.0	30.7	30.4	30.2	29.5	29.8	38.0	38.1	38.1	38.8	39.7	40.0	40.5
125	34.8	34.7	34.3	34.4	35.6	35.9	36.0	35.7	35.2	34.7	34.6	35.2	43.3	43.4	43.3	44.2	45.3	45.9	46.7
130	39.8	39.8	39.3	39.5	40.8	41.0	41.2	41.0	40.4	39.9	40.1	40.6	48.6	48.8	48.6	49.0	50.2	50.8	51.4
135	44.9	44.7	44.4	44.5	45.0	45.5	45.6	45.3	44.9	44.7	45.4	45.8	53.9	53.8	53.7	53.7	54.5	55.3	55.7
140	49.9	49.6	49.5	49.5	49.2	49.5	49.8	49.5	49.1	49.4	50.3	50.9	58.7	58.6	58.5	58.5	58.5	59.3	59.8
145	54.2	54.3	54.2	53.9	53.9	53.9	53.8	53.6	53.8	54.1	55.0	55.1	62.8	62.8	62.6	62.5	62.8	63.1	63.3
150	58.8	58.5	58.3	58.4	58.5	58.5	58.3	58.2	58.4	58.6	59.0	59.5	66.6	66.5	66.2	66.4	66.6	66.8	66.9
155	62.8	62.5	62.6	62.4	63.0	62.7	62.6	62.4	62.7	62.7	63.1	63.4	69.9	69.8	69.6	69.6	70.0	70.0	70.1
160	67.0	66.9	66.9	67.1	67.2	67.1	67.1	66.9	66.9	66.9	67.4	67.5	73.1	73.0	72.9	73.0	73.1	73.2	73.4
165	71.7	71.6	71.5	71.6	71.7	71.6	71.3	71.0	71.1	71.4	71.9	72.0	76.5	76.5	76.4	76.3	76.1	76.3	76.4
170	75.6	75.5	75.5	75.5	75.7	75.6	75.2	75.1	75.2	75.4	76.0	76.1	79.0	79.1	79.1	78.9	78.6	78.7	78.6
175	78.7	78.7	79.0	79.2	79.2	78.9	78.6	78.6	78.8	79.1	79.4	79.3	80.7	80.8	81.1	81.1	80.7	80.5	80.4
180	81.3	81.3	81.5	81.7	81.3	81.0	80.9	80.8	81.0	81.3	81.1	81.1	81.3	81.3	81.5	81.7	81.3	81.0	80.9

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:219.4V I:0.4909A P:104.3W PF:0.9684 Lamp Flux:16101.6x1 lm		
NAME: HB2010-100S-57K_200218	TYPE:LED	WEIGHT:
SPEC.:HB2010-100S-57K_200218	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

Table--2

UNIT: cd

C(DEG) γ (DEG)	285	300	315	330	345														
0	8344	8348	8352	8356	8357														
5	8367	8371	8373	8374	8374														
10	8369	8380	8391	8400	8403														
15	8252	8288	8326	8359	8384														
20	7920	7989	8066	8142	8200														
25	7297	7390	7517	7650	7744														
30	6382	6483	6603	6785	6910														
35	5254	5354	5435	5628	5760														
40	4063	4110	4149	4360	4462														
45	3103	3158	3165	3222	3286														
50	2344	2419	2430	2443	2519														
55	1750	1796	1806	1847	1879														
60	1271	1289	1306	1355	1372														
65	867	873	892	932	945														
70	535	541	552	582	593														
75	294	304	305	326	334														
80	151	155	158	169	174														
85	65.0	68.1	69.0	75.3	80.0														
90	34.0	33.6	30.5	31.7	32.8														
95	18.1	16.9	15.7	15.6	15.9														
100	19.3	19.1	19.0	19.2	19.5														
105	23.8	23.4	23.2	22.9	22.8														
110	28.9	28.3	28.1	28.1	27.3														
115	34.5	33.9	33.7	32.8	32.1														
120	40.8	40.0	39.1	37.8	37.4														
125	46.7	45.4	44.3	42.9	42.7														
130	51.4	50.3	49.1	48.2	47.8														
135	55.6	54.7	53.9	53.3	52.8														
140	59.7	58.8	58.5	58.2	57.7														
145	63.3	62.8	62.9	62.4	61.9														
150	67.0	66.7	66.3	66.1	65.9														
155	70.1	70.0	69.7	69.3	69.3														
160	73.4	73.2	73.1	72.6	72.6														
165	76.4	76.2	76.1	75.9	75.9														
170	78.7	78.6	78.4	78.3	78.3														
175	80.3	80.4	80.3	80.1	80.1														
180	80.8	81.0	81.3	81.1	81.2														

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:17 Feb 2020

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

Photometric Data Table [cd]

G/C	0.0	15.0	30.0	45.0	60.0	75.0	90.0	105.0	120.0	135.0
0.0	8330	8331	8331	8334	8337	8338	8341	8344	8348	8352
3.0	8336	8336	8334	8335	8336	8335	8338	8341	8348	8352
6.0	8350	8348	8348	8346	8345	8345	8346	8350	8358	8364
9.0	8369	8367	8365	8363	8363	8362	8362	8364	8371	8377
12.0	8385	8383	8385	8382	8380	8374	8373	8373	8374	8374
15.0	8374	8376	8375	8374	8367	8362	8361	8359	8355	8347
18.0	8307	8317	8317	8316	8298	8294	8294	8290	8277	8258
21.0	8161	8179	8182	8181	8156	8151	8147	8145	8122	8096
24.0	7905	7935	7941	7941	7911	7915	7912	7912	7886	7845
27.0	7502	7549	7556	7559	7526	7538	7546	7556	7523	7470
30.0	6943	7006	7008	7014	6992	7013	7028	7059	7014	6965
33.0	6272	6342	6336	6350	6351	6386	6414	6464	6415	6358
36.0	5503	5592	5573	5594	5606	5648	5708	5764	5710	5658
39.0	4709	4819	4788	4809	4869	4903	4974	5053	4965	4909
42.0	3931	4036	3997	4007	4079	4124	4189	4306	4190	4119
45.0	3309	3329	3315	3342	3369	3454	3530	3609	3523	3455
48.0	2809	2792	2793	2824	2822	2922	3027	3063	2997	2969
51.0	2373	2370	2375	2372	2386	2482	2570	2599	2532	2517
54.0	1991	1998	2006	1985	2011	2094	2147	2198	2127	2106
57.0	1663	1676	1685	1655	1677	1760	1771	1842	1775	1746
60.0	1368	1389	1396	1368	1387	1467	1449	1524	1470	1436
63.0	1102	1126	1132	1111	1132	1203	1179	1247	1207	1164
66.0	859.8	883.4	887.7	880.5	895.1	957.9	939.1	995.5	965.1	925.0
69.0	644.8	665.2	672.5	673.3	687.0	737.0	727.0	767.9	745.9	715.8
72.0	467.5	485.5	493.0	497.9	511.3	545.5	543.3	572.2	557.4	533.8
75.0	324.5	338.9	345.2	353.7	365.0	389.3	393.6	414.9	402.9	382.4
78.0	223.2	233.5	237.0	243.3	250.1	270.3	269.4	286.8	274.7	259.7
81.0	147.9	152.9	155.4	161.6	165.3	175.5	180.6	190.6	183.1	174.0
84.0	90.85	93.73	97.27	102.8	106.8	112.5	117.9	123.4	118.1	110.8
87.0	43.32	42.80	44.82	48.14	55.31	63.08	68.85	73.26	66.58	56.62
90.0	24.71	20.91	18.28	19.17	25.48	33.50	37.34	36.49	29.68	21.42
93.0	11.01	10.99	10.35	10.50	15.48	22.34	25.51	25.23	18.13	10.96
96.0	12.26	12.31	11.88	10.84	10.89	11.25	12.01	11.94	10.86	10.50
99.0	13.45	13.06	12.71	12.02	11.82	11.75	11.63	11.56	11.46	11.61
102.0	14.55	14.31	14.33	13.92	13.68	13.58	13.61	13.25	13.19	13.51
105.0	16.28	16.18	16.58	16.87	16.57	16.58	16.29	15.95	15.71	16.23
108.0	18.50	18.38	18.74	19.10	19.58	19.69	19.46	19.14	18.92	18.89
111.0	21.01	20.84	20.98	21.51	22.70	22.77	22.75	22.52	22.17	21.37
114.0	23.72	23.62	23.66	24.35	25.24	25.71	26.06	25.72	24.97	24.19
117.0	26.59	26.53	26.40	27.19	27.89	28.16	28.36	28.02	27.63	27.20
120.0	29.66	29.53	29.31	30.00	30.75	30.88	31.04	30.75	30.40	30.15
123.0	32.75	32.65	32.19	32.56	33.52	33.83	33.91	33.65	33.19	32.86
126.0	35.82	35.70	35.39	35.42	36.71	37.03	37.11	36.86	36.27	35.67
129.0	38.84	38.72	38.33	38.45	39.81	40.11	40.31	40.04	39.46	38.83
132.0	41.84	41.77	41.26	41.47	42.63	42.78	43.05	42.70	42.18	41.83
135.0	44.86	44.74	44.39	44.51	45.01	45.46	45.65	45.28	44.89	44.66
138.0	48.07	47.93	47.50	47.57	47.48	47.86	48.17	47.90	47.38	47.56
141.0	50.68	50.51	50.41	50.39	50.14	50.19	50.61	50.22	50.06	50.37
144.0	53.29	53.29	53.31	53.08	53.02	52.94	52.89	52.72	52.85	53.18
147.0	56.25	56.07	55.90	55.65	55.82	55.72	55.56	55.44	55.68	55.88
150.0	58.81	58.52	58.30	58.38	58.54	58.49	58.29	58.16	58.41	58.55
153.0	61.20	60.94	60.86	60.79	61.27	60.98	60.82	60.71	60.92	60.99
156.0	63.58	63.37	63.41	63.28	63.93	63.62	63.50	63.31	63.55	63.59
159.0	66.11	66.00	66.01	66.05	66.36	66.31	66.24	66.07	66.08	65.99
162.0	68.84	68.79	68.72	68.90	68.97	68.76	68.86	68.58	68.47	68.76
165.0	71.66	71.57	71.54	71.59	71.70	71.57	71.34	71.04	71.14	71.42
168.0	74.21	74.05	74.02	73.99	74.25	74.24	73.81	73.56	73.70	73.84
171.0	76.24	76.15	76.19	76.28	76.53	76.26	75.86	75.70	75.97	76.21
174.0	78.11	78.11	78.32	78.55	78.64	78.28	77.99	77.96	78.17	78.42
177.0	79.86	79.85	80.11	80.41	80.39	80.03	79.83	79.79	79.88	80.20
180.0	81.29	81.28	81.48	81.66	81.32	81.02	80.88	80.80	80.96	81.26
G/C	150.0	165.0	180.0	195.0	210.0	225.0	240.0	255.0	270.0	285.0
0.0	8356	8357	8330	8331	8331	8334	8337	8338	8341	8344
3.0	8360	8365	8337	8341	8343	8345	8346	8349	8353	8355
6.0	8373	8379	8352	8356	8357	8360	8363	8366	8369	8373
9.0	8384	8388	8363	8360	8360	8360	8365	8365	8369	8373
12.0	8375	8373	8347	8342	8339	8336	8334	8335	8338	8344
15.0	8337	8323	8294	8280	8268	8253	8248	8244	8247	8252
18.0	8233	8209	8181	8149	8129	8105	8089	8076	8074	8081
21.0	8054	8021	7988	7933	7905	7872	7844	7821	7820	7822
24.0	7778	7738	7704	7633	7590	7540	7501	7459	7449	7448
27.0	7386	7330	7305	7224	7164	7093	7042	6977	6953	6956
30.0	6876	6816	6802	6729	6658	6566	6513	6424	6382	6382

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LUC
Test Date: 17 Feb 2020

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity: 65.0%
Test Distance: 8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

Photometric Data Table [cd]

33.0	6272	6202	6213	6152	6059	5955	5904	5791	5727	5725
36.0	5579	5509	5546	5521	5436	5314	5252	5125	5036	5025
39.0	4851	4770	4812	4809	4726	4587	4541	4412	4319	4296
42.0	4076	3985	4029	4049	3971	3831	3801	3706	3648	3644
45.0	3403	3323	3339	3340	3286	3164	3165	3154	3127	3103
48.0	2879	2798	2825	2791	2762	2674	2645	2705	2684	2622
51.0	2430	2354	2379	2347	2324	2236	2228	2298	2274	2215
54.0	2042	1970	1979	1966	1945	1855	1871	1916	1904	1859
57.0	1706	1637	1630	1644	1615	1526	1562	1587	1573	1545
60.0	1408	1350	1333	1358	1331	1250	1290	1300	1282	1271
63.0	1153	1099	1081	1107	1080	1009	1052	1047	1025	1021
66.0	914.5	873.4	858.7	874.1	855.4	801.1	830.7	819.0	798.9	791.8
69.0	702.8	671.1	660.6	670.9	658.7	619.8	636.0	623.2	602.0	592.9
72.0	520.7	496.5	489.6	494.7	488.7	460.9	469.2	454.3	436.4	427.9
75.0	366.3	348.4	345.0	346.3	341.1	322.9	325.5	313.8	301.5	293.7
78.0	249.4	238.2	237.4	236.2	233.3	223.9	224.3	214.6	206.0	199.3
81.0	164.4	157.9	159.4	156.3	155.3	150.4	148.8	142.3	136.1	131.1
84.0	103.2	98.04	101.1	99.02	99.46	97.05	94.78	88.72	84.27	79.93
87.0	48.58	45.70	50.35	49.39	52.26	51.18	50.09	46.95	45.63	44.95
90.0	18.57	20.50	26.99	28.00	32.57	33.85	35.61	34.53	34.96	34.03
93.0	10.13	10.87	15.45	15.00	14.68	15.52	19.15	24.31	25.25	23.04
96.0	11.26	11.97	17.37	17.31	16.77	16.48	16.61	17.21	17.84	17.46
99.0	12.21	12.58	18.75	19.05	18.70	18.25	18.00	18.30	18.56	18.61
102.0	14.43	14.31	20.63	20.79	20.53	20.35	20.35	20.63	20.76	21.02
105.0	16.45	16.25	22.87	23.10	23.17	23.08	23.06	23.31	23.56	23.76
108.0	18.51	18.29	25.52	25.83	26.24	26.03	25.93	26.19	26.71	26.70
111.0	21.06	20.99	28.43	28.65	28.96	29.07	28.95	29.54	30.03	30.04
114.0	23.82	23.83	31.51	31.65	31.85	32.30	32.56	32.90	33.44	33.33
117.0	26.66	26.81	34.73	34.87	34.96	35.53	35.98	36.40	36.92	37.01
120.0	29.55	29.85	37.97	38.06	38.10	38.84	39.73	39.98	40.45	40.77
123.0	32.49	33.05	41.16	41.29	41.22	42.17	43.13	43.73	44.26	44.57
126.0	35.77	36.24	44.38	44.50	44.32	45.16	46.36	46.95	47.69	47.72
129.0	39.01	39.49	47.58	47.72	47.56	48.10	49.29	49.85	50.49	50.49
132.0	42.19	42.69	50.77	50.83	50.66	50.92	52.03	52.57	53.15	53.18
135.0	45.41	45.83	53.88	53.85	53.67	53.68	54.55	55.25	55.72	55.65
138.0	48.44	49.02	56.83	56.71	56.54	56.64	57.00	57.76	58.20	58.13
141.0	51.32	51.75	59.56	59.44	59.39	59.34	59.36	60.09	60.59	60.37
144.0	54.13	54.30	61.98	61.96	61.93	61.71	61.93	62.36	62.57	62.55
147.0	56.66	56.97	64.38	64.24	64.07	64.08	64.25	64.70	64.80	64.79
150.0	59.02	59.54	66.64	66.50	66.18	66.37	66.56	66.78	66.92	67.02
153.0	61.44	61.96	68.68	68.54	68.30	68.32	68.61	68.72	68.87	68.93
156.0	63.87	64.19	70.55	70.47	70.19	70.25	70.56	70.61	70.76	70.79
159.0	66.47	66.69	72.35	72.30	72.20	72.34	72.48	72.56	72.70	72.73
162.0	69.15	69.29	74.44	74.40	74.34	74.39	74.35	74.54	74.64	74.65
165.0	71.86	72.05	76.50	76.53	76.39	76.27	76.12	76.31	76.37	76.44
168.0	74.49	74.68	78.15	78.27	78.17	77.92	77.69	77.85	77.82	77.99
171.0	76.68	76.83	79.40	79.51	79.54	79.36	79.03	79.04	78.98	78.97
174.0	78.76	78.73	80.37	80.47	80.71	80.65	80.34	80.23	80.09	80.04
177.0	80.36	80.35	81.17	81.24	81.52	81.52	81.17	80.97	80.90	80.70
180.0	81.14	81.14	81.30	81.34	81.47	81.69	81.33	81.00	80.91	80.84
G/C	300.0	315.0	330.0	345.0						
0.0	8348	8352	8356	8357						
3.0	8360	8363	8365	8364						
6.0	8377	8380	8380	8381						
9.0	8380	8389	8397	8400						
12.0	8363	8382	8397	8408						
15.0	8288	8326	8359	8384						
18.0	8138	8197	8254	8300						
21.0	7897	7988	8071	8135						
24.0	7544	7658	7776	7863						
27.0	7060	7187	7347	7455						
30.0	6483	6603	6785	6910						
33.0	5823	5923	6135	6257						
36.0	5118	5187	5376	5496						
39.0	4363	4419	4624	4728						
42.0	3679	3696	3840	3935						
45.0	3158	3165	3222	3286						
48.0	2696	2715	2723	2805						
51.0	2290	2296	2316	2385						
54.0	1912	1919	1957	1996						
57.0	1579	1592	1641	1662						
60.0	1289	1306	1355	1372						
63.0	1030	1050	1097	1112						
66.0	798.4	816.7	854.7	868.3						

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LUC
Test Date: 17 Feb 2020

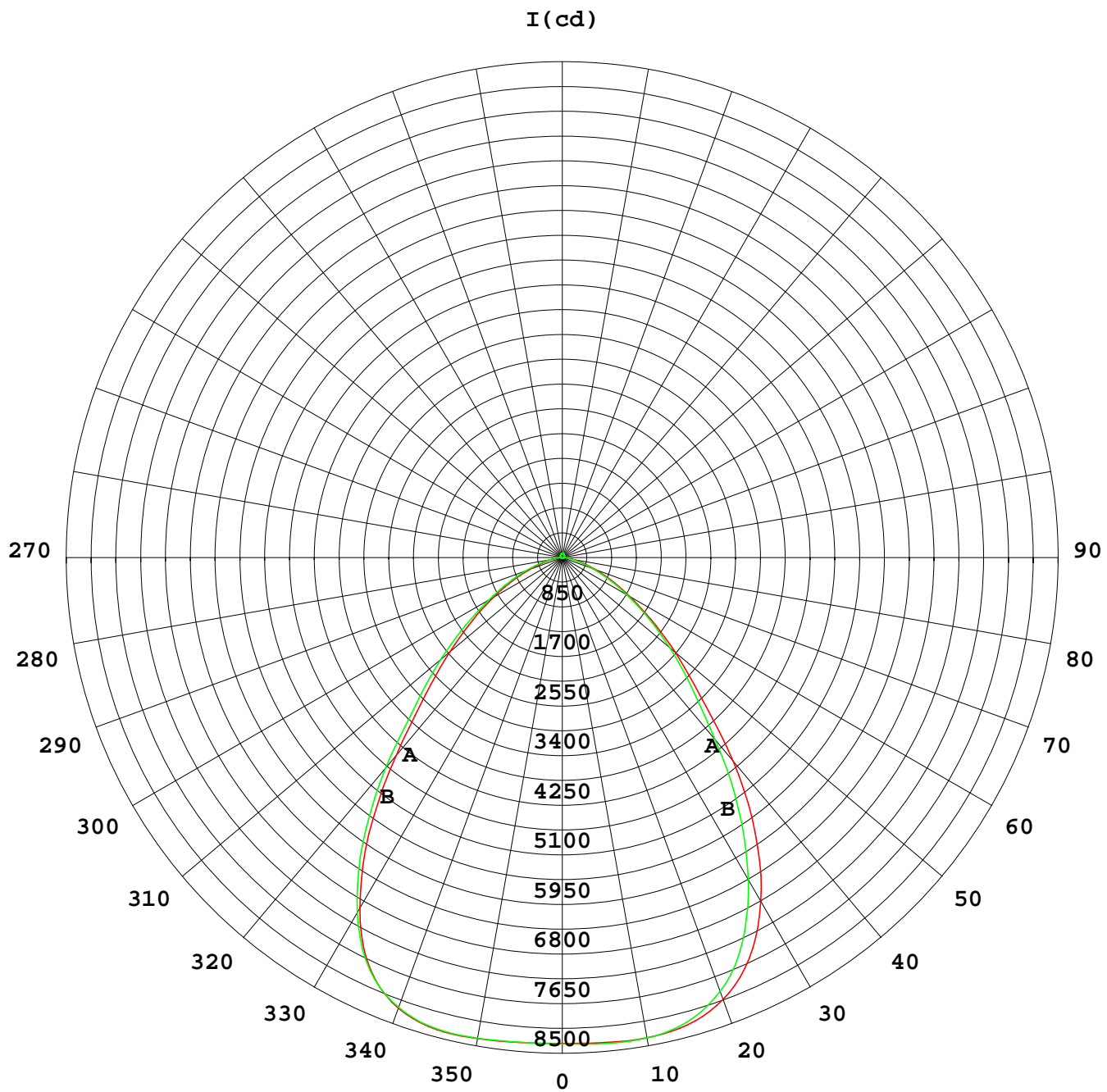
γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity: 65.0%
Test Distance: 8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218

Photometric Data Table [cd]

69.0	599.8	612.3	644.3	657.1
72.0	435.4	444.9	471.5	479.9
75.0	304.0	305.4	326.3	334.3
78.0	204.2	208.4	224.4	229.7
81.0	134.2	138.1	146.7	151.1
84.0	83.49	84.76	92.15	96.54
87.0	46.31	45.19	49.07	51.08
90.0	33.59	30.53	31.67	32.82
93.0	19.66	15.09	15.10	15.65
96.0	16.75	16.32	16.35	16.77
99.0	18.30	18.28	18.59	19.16
102.0	20.72	20.57	20.42	20.52
105.0	23.42	23.16	22.89	22.79
108.0	26.27	26.13	26.23	25.38
111.0	29.35	29.14	28.97	28.26
114.0	32.77	32.57	31.79	31.09
117.0	36.29	35.85	34.83	34.20
120.0	40.01	39.14	37.76	37.41
123.0	43.32	42.41	41.02	40.60
126.0	46.40	45.21	43.94	43.75
129.0	49.39	48.08	47.13	46.87
132.0	52.15	51.04	50.19	49.75
135.0	54.75	53.93	53.29	52.84
138.0	57.19	56.70	56.20	55.90
141.0	59.57	59.48	59.18	58.56
144.0	61.99	61.93	61.43	61.08
147.0	64.44	64.29	63.93	63.53
150.0	66.66	66.26	66.13	65.94
153.0	68.63	68.35	68.07	68.04
156.0	70.63	70.40	69.93	69.99
159.0	72.59	72.37	71.94	71.93
162.0	74.46	74.32	73.99	73.95
165.0	76.20	76.09	75.86	75.89
168.0	77.75	77.55	77.45	77.48
171.0	79.04	78.86	78.66	78.71
174.0	80.12	79.99	79.78	79.73
177.0	80.87	80.88	80.68	80.68
180.0	80.95	81.29	81.14	81.18

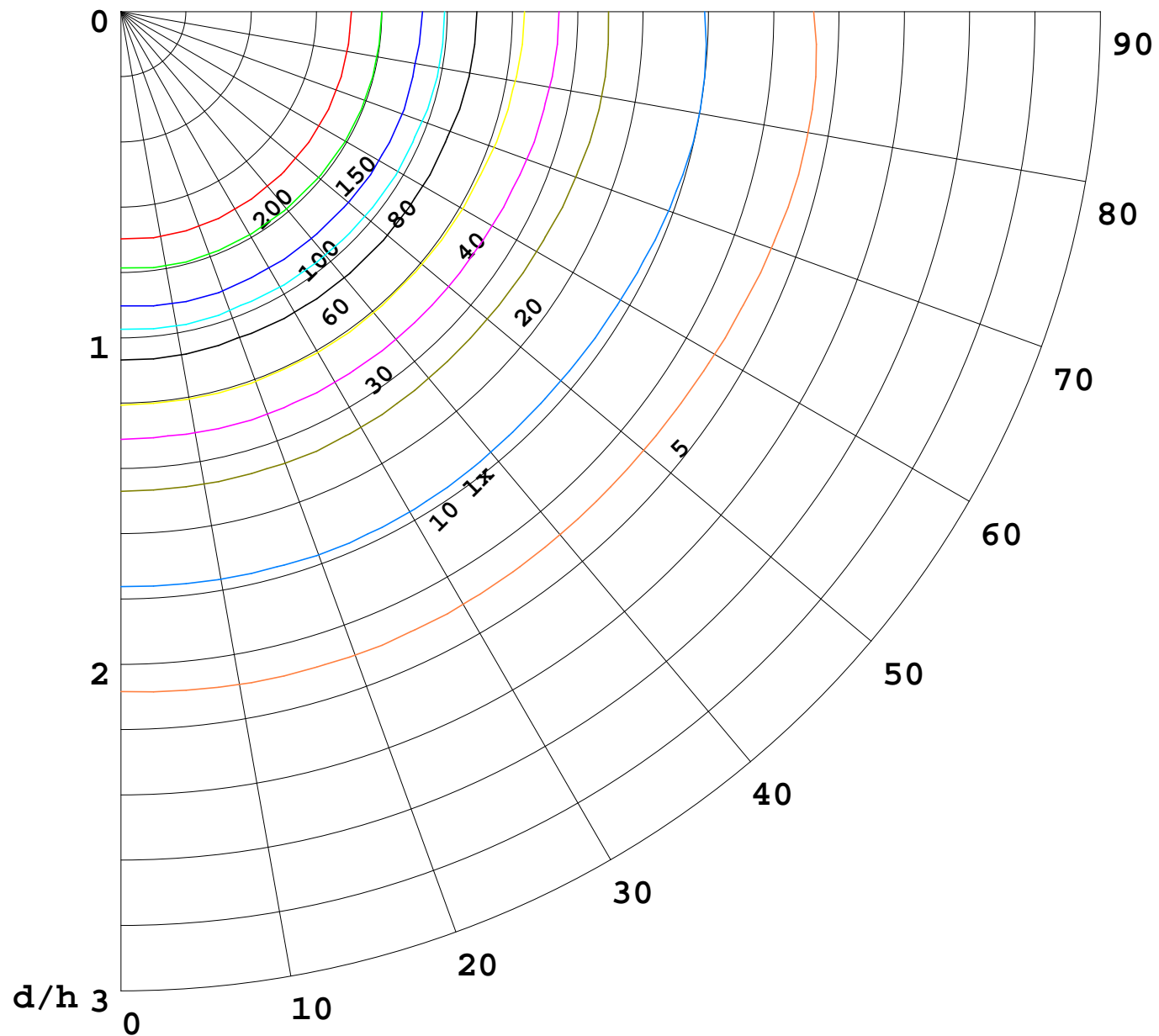
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LUC
Test Date: 17 Feb 2020

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity: 65.0%
Test Distance: 8.100m [K=1.0000]
Remarks: HB2010-100S-57K_200218



1000 lm

$K = 1$



F = 1000 lm
 K = 0.7
 H_{cc} = 0.8 m
 H_{fc} = 0.0 m
 E_{ave} = 100 lx

	P_{cc}	P_w	P_{fc}
—————	70	50	30
—————	50	30	20

