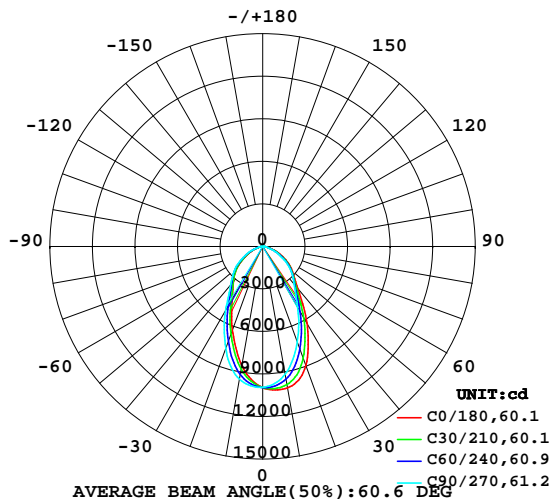


LUMINAIRE PHOTOMETRIC TEST REPORT

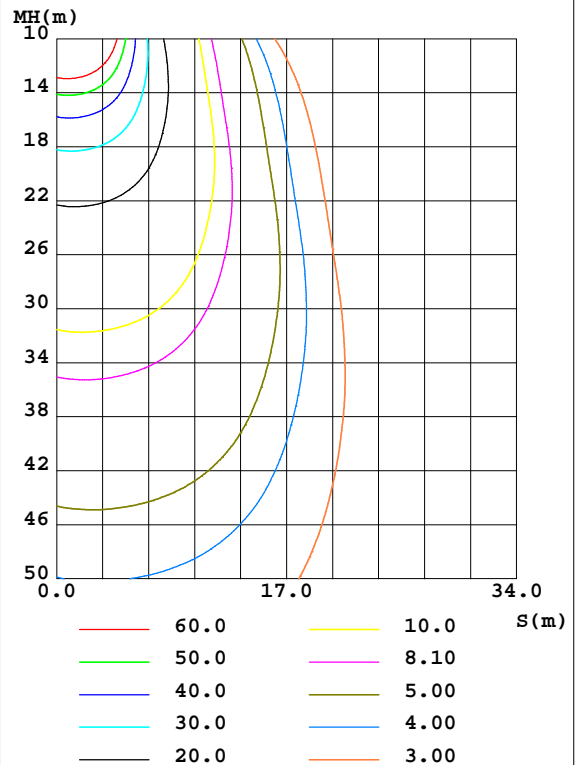
Test:U:220.0V I:0.4997A P:103.9W PF:0.9450 Lamp Flux:15121.4x1 lm		
NAME: HB2000-100G-C1-G5 288EA-60D_180914	TYPE:LED	WEIGHT:
SPEC.:G5 288	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 145.52 lm/W			
HB2000-100G-C1-G5 288EA-60D_180914		Imax(cd)	10201	S/MH(C0/180)	0.76
NOMINAL POWER(W)	100	LOR(%)	100.0	S/MH(C90/270)	0.91
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	15121	η UP,DN(C0-180)	0.9,48.6
NOMINAL FLUX(lm)	15121.4	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.8,49.7
LAMPS INSIDE	1	η up(%)	1.7	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	220	η down(%)	98.3	CIBSE SHR MAX	1.00

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:03 January 2018

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1012	971.8	914.8	860.9	852.2	896.0	950.1	1003	0- 10	919.8	919.8	6.08,6.08
20	892.3	803.0	714.8	639.3	626.5	679.2	764.3	872.0	10- 20	2380	3299	21.8,21.8
30	627.2	553.1	495.8	442.0	431.4	464.9	526.6	612.7	20- 30	2899	6198	41,41
40	385.2	361.7	347.0	328.5	322.6	333.5	352.2	382.2	30- 40	2657	8855	58.6,58.6
50	274.0	266.4	257.9	241.2	236.8	249.0	258.6	273.9	40- 50	2331	11185	74,74
60	187.6	173.3	158.6	139.1	136.5	149.3	162.8	183.4	50- 60	1874	13060	86.4,86.4
70	97.11	86.64	77.73	64.45	61.88	70.41	79.60	93.72	60- 70	1175	14235	94.1,94.1
80	29.69	26.21	23.46	19.27	18.04	21.08	23.62	28.56	70- 80	496.3	14731	97.4,97.4
90	5.286	4.596	5.766	4.993	4.428	4.544	5.292	5.298	80- 90	138.8	14870	98.3,98.3
100	2.069	2.123	2.486	2.359	1.796	1.670	1.620	1.539	90-100	28.14	14898	98.5,98.5
110	2.661	2.845	3.040	3.176	2.544	2.383	2.355	2.146	100-110	23.97	14922	98.7,98.7
120	3.477	3.729	4.093	4.197	3.509	3.359	3.349	2.973	110-120	30.74	14953	98.9,98.9
130	4.389	4.619	5.122	5.119	4.572	4.340	4.392	3.823	120-130	36.55	14989	99.1,99.1
140	5.349	5.563	5.780	5.962	5.567	5.316	5.138	4.824	130-140	38.64	15028	99.4,99.4
150	6.260	6.390	6.509	6.655	6.339	6.205	6.035	5.824	140-150	36.73	15065	99.6,99.6
160	6.832	6.896	6.954	6.937	6.725	6.676	6.680	6.535	150-160	30.22	15095	99.8,99.8
170	7.174	7.157	7.130	7.146	7.056	7.015	6.989	6.978	160-170	19.63	15115	100,100
180	7.293	7.320	7.249	7.281	7.289	7.322	7.249	7.279	170-180	6.830	15121	100,100
DEG	LUMINOUS INTENSITY: #10cd									UNIT: lm		

Conical surface Flux(90deg): 10059 lm

%lum = 66.5%

%lamp = 66.5%

Conical surface Flux(120deg): 13060 lm

%lum = 86.4%

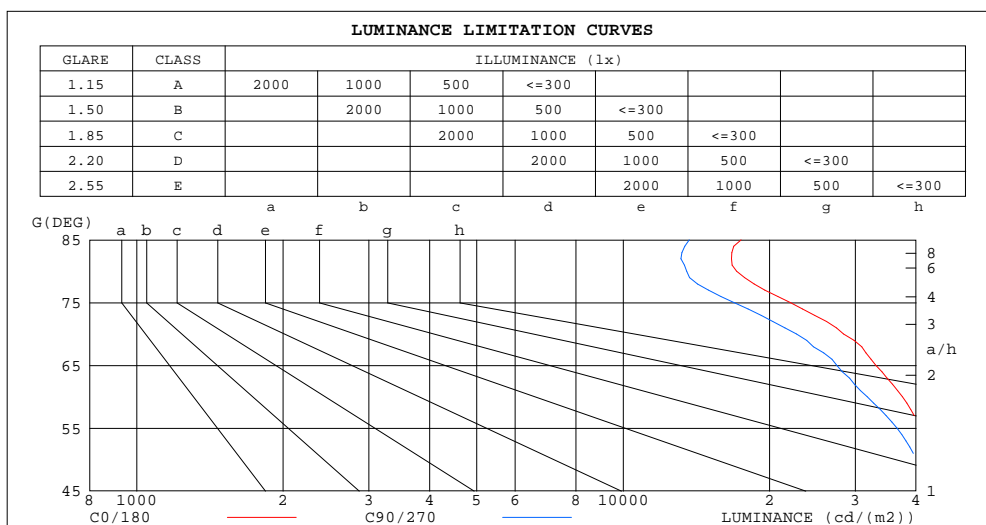
%lamp = 86.4%

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LUC
Test Date: 03 January 2018

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity: 65.0%
Test Distance: 8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

LUMINANCE LIMITATION CURVES

Test:U:220.0V I:0.4997A P:103.9W PF:0.9450 Lamp Flux:15121.4x1 lm		
NAME: HB2000-100G-C1-G5 288EA-60D_180914	TYPE:LED	WEIGHT:
SPEC.:G5 288	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	17466	13671
80	17100	13510
75	22059	16913
70	28392	22727
65	33090	27475
60	37528	31730
55	40700	36544
50	42628	40118
45	45211	42538

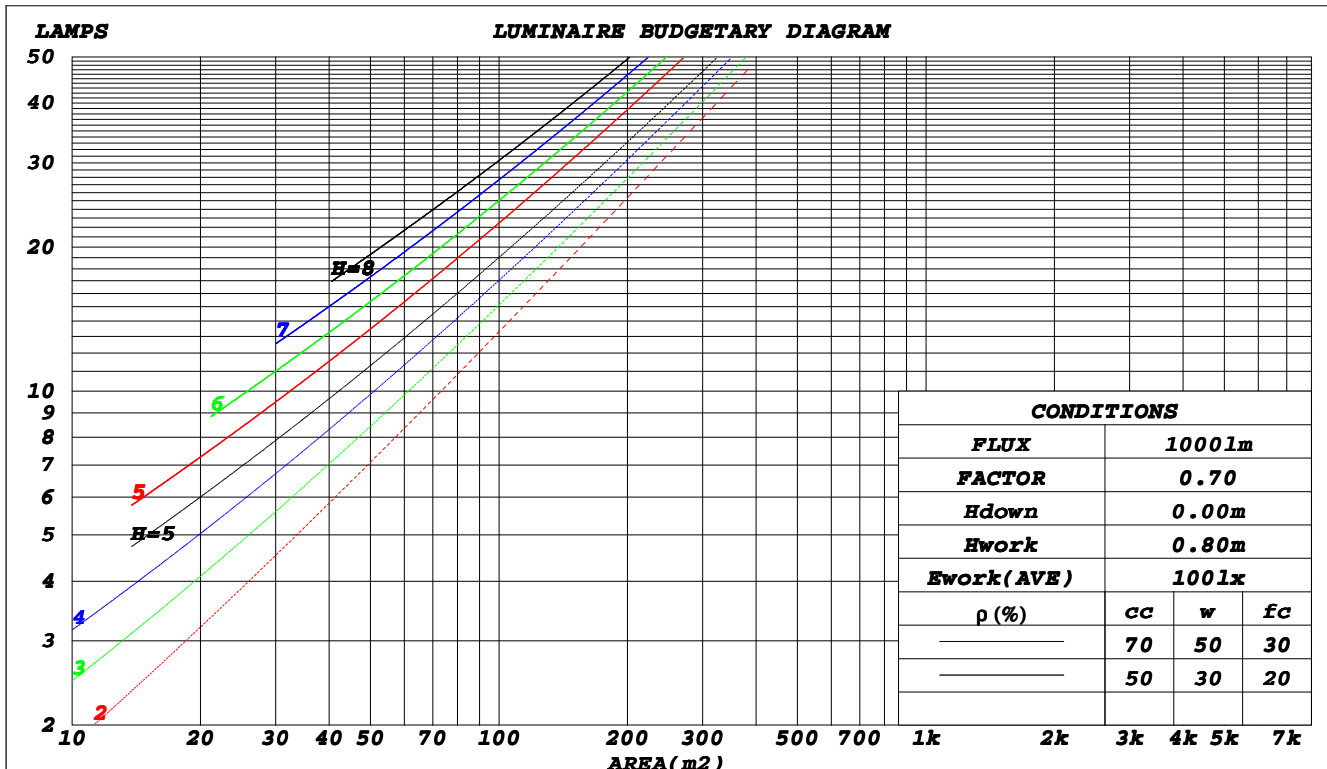
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:03 January 2018

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.0V I:0.4997A P:103.9W PF:0.9450 Lamp Flux:15121.4x1 lm		
NAME: HB2000-100G-C1-G5 288EA-60D_180914	TYPE:LED	WEIGHT:
SPEC.:G5 288	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						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	.98
1.0	1.06	1.03	.99	1.04	1.01	.98	.99	.97	.94	.95	.93	.91	.91	.90	.88	.86
2.0	.95	.89	.84	.93	.88	.83	.89	.85	.81	.86	.82	.79	.83	.80	.77	.75
3.0	.85	.78	.73	.84	.77	.72	.80	.75	.70	.78	.73	.69	.75	.71	.68	.66
4.0	.77	.69	.64	.76	.68	.63	.73	.67	.62	.71	.65	.61	.68	.64	.60	.58
5.0	.70	.62	.56	.69	.61	.56	.67	.60	.55	.65	.59	.54	.63	.58	.54	.52
6.0	.64	.56	.50	.63	.56	.50	.61	.55	.50	.59	.54	.49	.58	.53	.49	.47
7.0	.59	.51	.46	.58	.51	.45	.56	.50	.45	.55	.49	.45	.53	.48	.44	.42
8.0	.54	.47	.41	.54	.46	.41	.52	.46	.41	.51	.45	.41	.50	.44	.40	.39
9.0	.50	.43	.38	.50	.43	.38	.49	.42	.38	.48	.42	.37	.46	.41	.37	.35
10.0	.47	.40	.35	.47	.40	.35	.45	.39	.35	.44	.39	.35	.44	.38	.34	.33



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:03 January 2018

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

WEC AND CCEC

Test:U:220.0V I:0.4997A P:103.9W PF:0.9450 Lamp Flux:15121.4x1 lm		
NAME: HB2000-100G-C1-G5 288EA-60D_180914	TYPE:LED	WEIGHT:
SPEC.:G5 288	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	.256	.146	.046	.249	.142	.045	.235	.135	.043	.222	.128	.041	.210	.122	.039		
2.0	.245	.134	.041	.238	.131	.040	.226	.126	.039	.215	.121	.038	.205	.116	.036		
3.0	.230	.122	.037	.224	.120	.036	.214	.116	.035	.204	.112	.034	.194	.108	.033		
4.0	.215	.112	.033	.210	.110	.032	.200	.106	.032	.192	.103	.031	.184	.100	.030		
5.0	.201	.102	.030	.196	.101	.029	.188	.098	.029	.180	.095	.028	.173	.092	.028		
6.0	.188	.094	.027	.184	.093	.027	.177	.091	.026	.170	.088	.026	.163	.086	.026		
7.0	.177	.087	.025	.173	.086	.025	.166	.084	.024	.160	.082	.024	.154	.080	.024		
8.0	.166	.081	.023	.163	.080	.023	.157	.078	.022	.151	.077	.022	.146	.075	.022		
9.0	.157	.076	.021	.154	.075	.021	.148	.073	.021	.143	.072	.021	.138	.070	.020		
10.0	.148	.071	.020	.146	.070	.020	.141	.069	.019	.136	.068	.019	.132	.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	.203	.203	.203	.174	.174	.174	.119	.119	.119	.068	.068	.068	.022	.022	.022	
1.0	.189	.169	.151	.162	.145	.130	.111	.100	.090	.064	.058	.052	.020	.019	.017	
2.0	.179	.145	.117	.153	.125	.101	.105	.086	.070	.061	.050	.041	.019	.016	.013	
3.0	.170	.127	.093	.145	.110	.081	.100	.076	.056	.058	.044	.033	.019	.014	.011	
4.0	.161	.113	.076	.138	.098	.066	.095	.068	.047	.055	.040	.028	.018	.013	.009	
5.0	.154	.102	.065	.132	.089	.056	.091	.062	.040	.053	.036	.024	.017	.012	.008	
6.0	.147	.094	.056	.126	.081	.049	.087	.057	.034	.050	.033	.020	.016	.011	.007	
7.0	.140	.087	.049	.121	.075	.043	.083	.053	.030	.048	.031	.018	.016	.010	.006	
8.0	.134	.081	.044	.115	.070	.039	.080	.049	.027	.046	.029	.016	.015	.010	.005	
9.0	.128	.076	.040	.111	.066	.035	.077	.046	.025	.045	.027	.015	.014	.009	.005	
10.0	.123	.072	.037	.106	.062	.033	.074	.044	.023	.043	.026	.014	.014	.008	.005	

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LUC
Test Date: 03 January 2018

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity: 65.0%
Test Distance: 8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

UGR(Unified Glare Rating) Table

Test:U:220.0V I:0.4997A P:103.9W PF:0.9450 Lamp Flux:15121.4x1 lm		
NAME: HB2000-100G-C1-G5 288EA-60D_180914	TYPE:LED	WEIGHT:
SPEC.:G5 288	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	25.0	26.3	25.3	26.5	26.8	24.5	25.8	24.8	26.0	26.2
3H	26.1	27.3	26.4	27.5	27.8	25.3	26.5	25.7	26.8	27.1
4H	26.4	27.5	26.7	27.8	28.1	25.6	26.7	25.9	27.0	27.2
6H	26.5	27.6	26.9	27.9	28.2	25.7	26.7	26.0	27.0	27.3
8H	26.6	27.6	26.9	27.9	28.2	25.7	26.7	26.0	27.0	27.3
12H	26.6	27.6	27.0	27.9	28.2	25.7	26.7	26.1	27.0	27.3
4H 2H	25.4	26.5	25.7	26.8	27.1	25.0	26.1	25.3	26.4	26.6
3H	26.6	27.6	27.0	27.9	28.2	26.0	27.0	26.3	27.3	27.6
4H	27.0	27.9	27.4	28.2	28.6	26.3	27.2	26.6	27.5	27.9
6H	27.2	28.0	27.6	28.4	28.8	26.4	27.2	26.8	27.6	28.0
8H	27.3	28.0	27.7	28.4	28.8	26.5	27.2	26.9	27.6	28.0
12H	27.4	28.0	27.8	28.4	28.9	26.5	27.2	27.0	27.6	28.0
8H 4H	27.1	27.8	27.5	28.2	28.6	26.4	27.1	26.8	27.5	27.9
6H	27.4	28.0	27.8	28.4	28.9	26.6	27.2	27.1	27.6	28.1
8H	27.5	28.0	28.0	28.5	29.0	26.7	27.2	27.2	27.7	28.2
12H	27.6	28.1	28.1	28.6	29.1	26.8	27.3	27.3	27.7	28.2
12H 4H	27.0	27.7	27.5	28.1	28.5	26.3	27.0	26.8	27.4	27.9
6H	27.4	27.9	27.8	28.3	28.8	26.6	27.1	27.1	27.6	28.1
8H	27.5	28.0	28.0	28.4	29.0	26.7	27.2	27.2	27.7	28.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.3					+ 0.3 / - 0.4				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.4				
2.0H	+ 0.4 / - 0.4					+ 0.5 / - 0.6				

CIE Pub.117 Corrected 15121 lm Total Lamp Luminous Flux.(8log(F/F0) = 9.4)

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:03 January 2018

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

UTILIZATION FACTORS TABLE

Test:U:220.0V I:0.4997A P:103.9W PF:0.9450 Lamp Flux:15121.4x1 lm		
NAME: HB2000-100G-C1-G5 288EA-60D_180914	TYPE:LED	WEIGHT:
SPEC.:G5 288	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

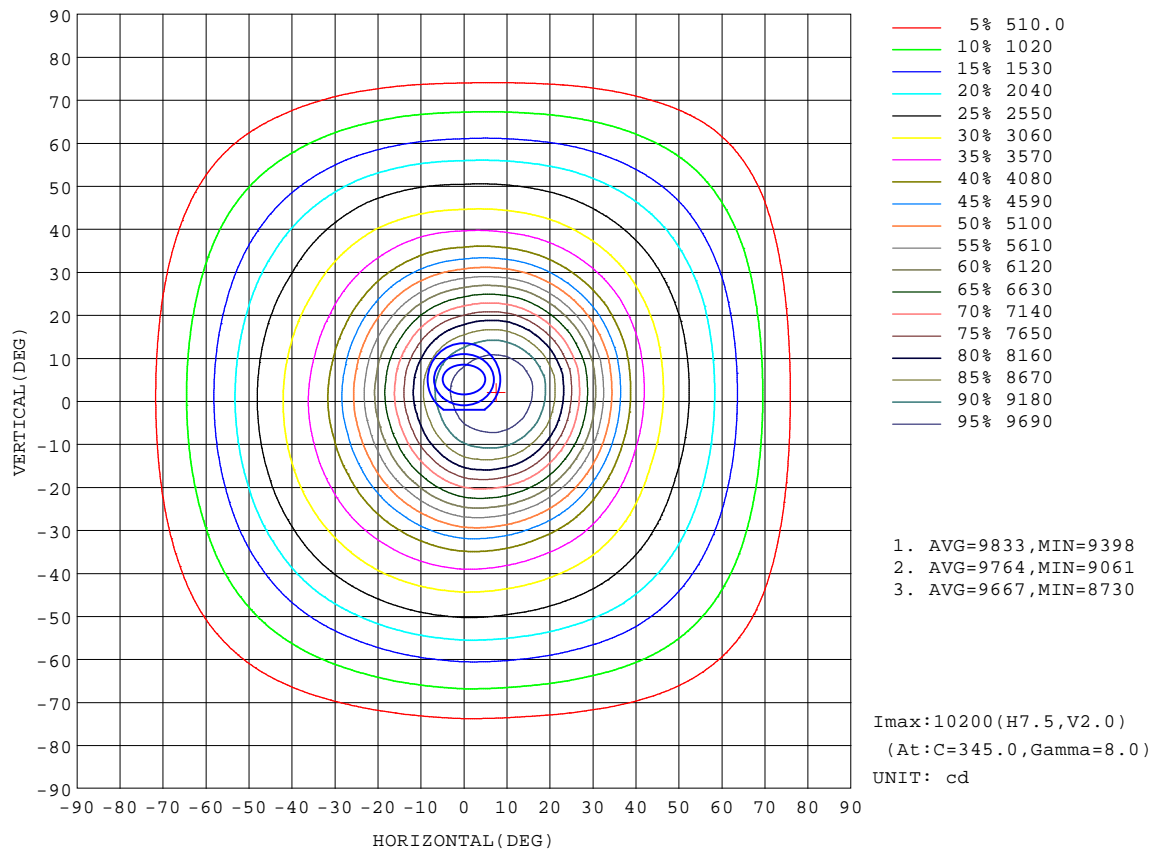
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	66	56	50	65	55	49	64	55	49	44
0.80	75	65	59	74	65	59	73	64	58	52
1.00	83	74	67	82	73	67	80	74	66	60
1.25	89	80	75	88	80	74	85	78	73	67
1.50	94	85	80	92	85	79	89	83	78	71
2.00	99	92	87	97	91	86	94	89	84	77
2.50	102	96	91	100	95	90	97	92	88	80
3.00	105	100	95	103	98	94	99	95	91	83
4.00	108	104	100	106	102	98	102	98	96	87
5.00	110	106	103	108	104	101	103	101	98	89
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNM = 1.25		

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:03 January 2018

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

ISOCANDELA DIAGRAM

Test:U:220.0V I:0.4997A P:103.9W PF:0.9450 Lamp Flux:15121.4x1 lm		
NAME: HB2000-100G-C1-G5 288EA-60D_180914	TYPE:LED	WEIGHT:
SPEC.:G5 288	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:



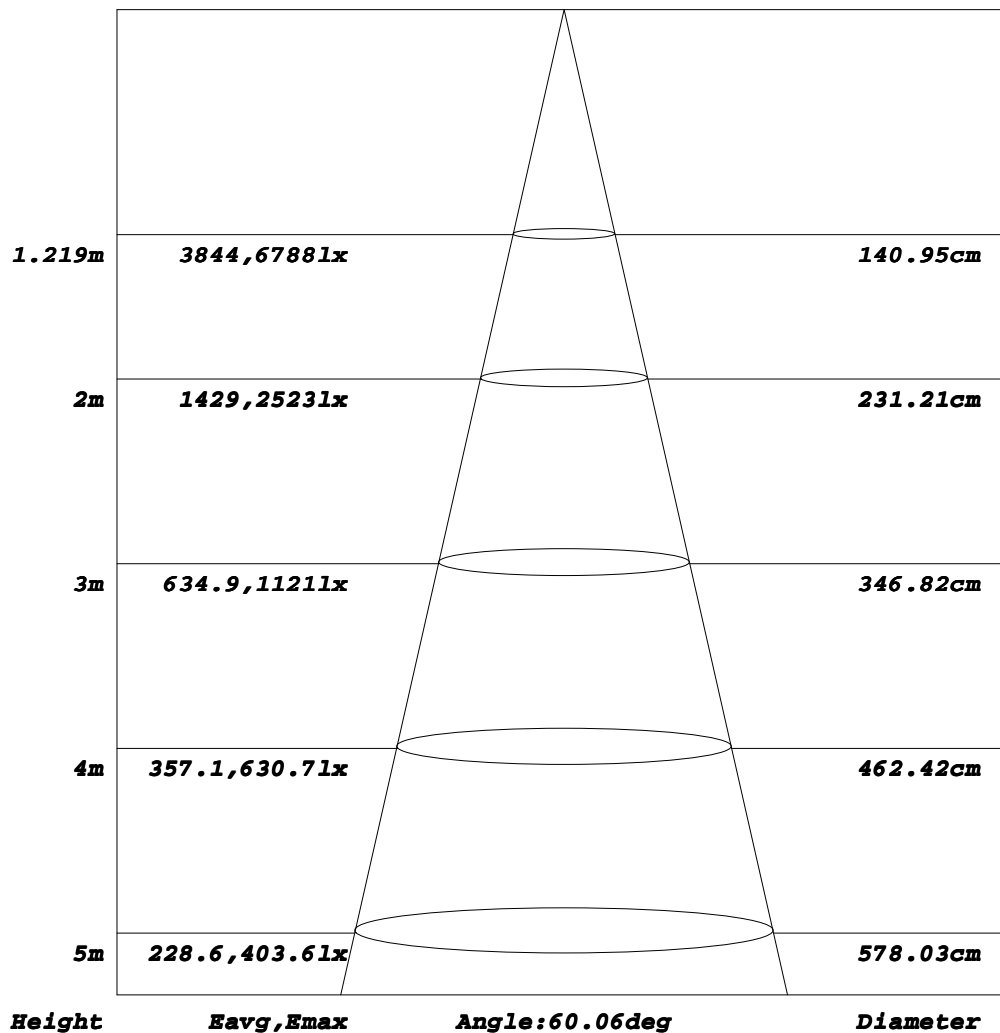
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:03 January 2018

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

AAI Figure

Test:U:220.0V I:0.4997A P:103.9W PF:0.9450 Lamp Flux:15121.4x1 lm		
NAME: HB2000-100G-C1-G5 288EA-60D_180914	TYPE:LED	WEIGHT:
SPEC.:G5 288	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

Flux out:6481 lm



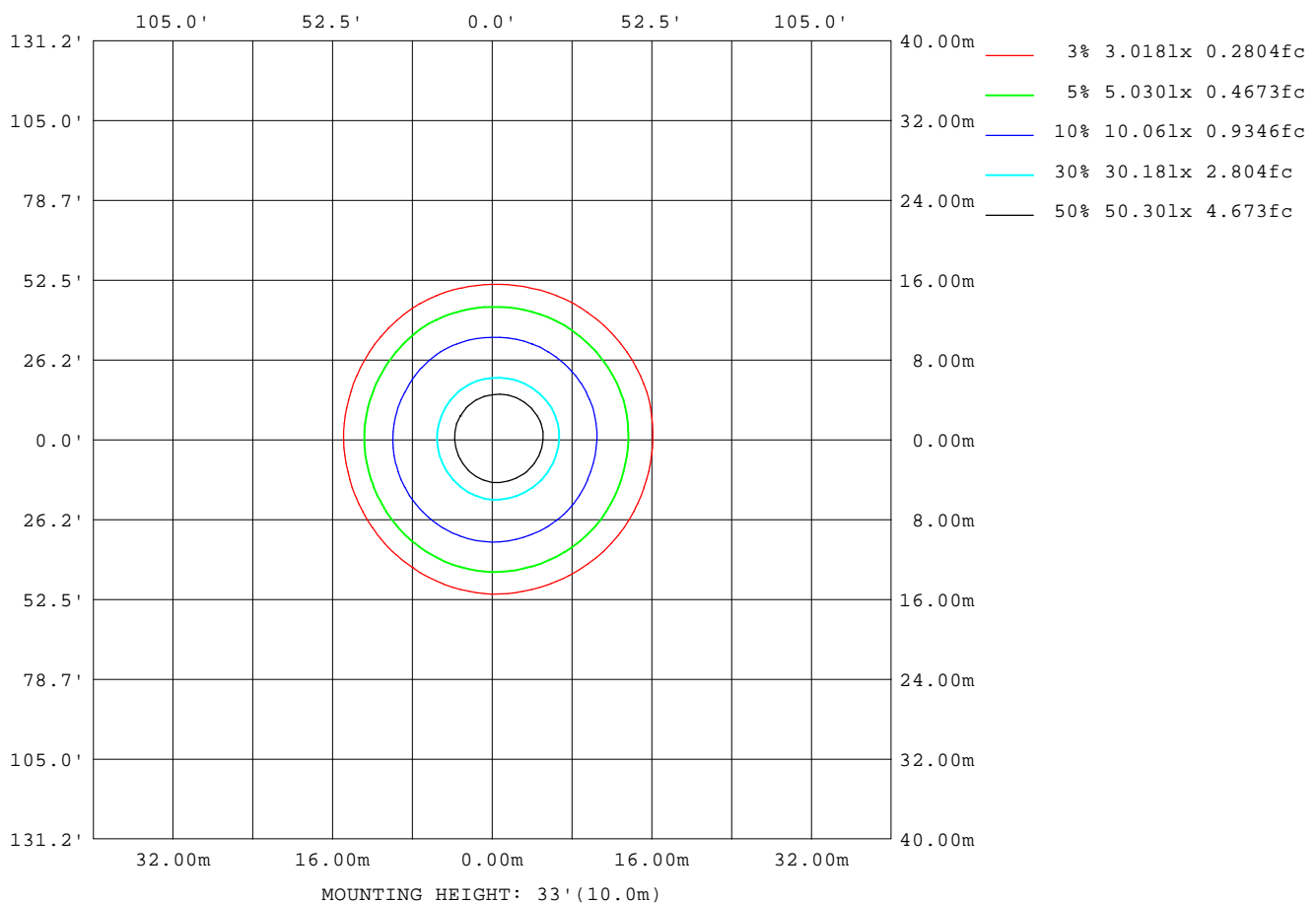
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:03 January 2018

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

ISOLUX DIAGRAM

Test:U:220.0V I:0.4997A P:103.9W PF:0.9450 Lamp Flux:15121.4x1 lm		
NAME: HB2000-100G-C1-G5 288EA-60D_180914	TYPE:LED	WEIGHT:
SPEC.:G5 288	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: 03 January 2018

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity: 65.0%
Test Distance: 8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

LED Avg.L Report

Test:U:220.0V I:0.4997A P:103.9W PF:0.9450 Lamp Flux:15121.4x1 lm		
NAME: HB2000-100G-C1-G5 288EA-60D_180914	TYPE:LED	WEIGHT:
SPEC.:G5 288	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

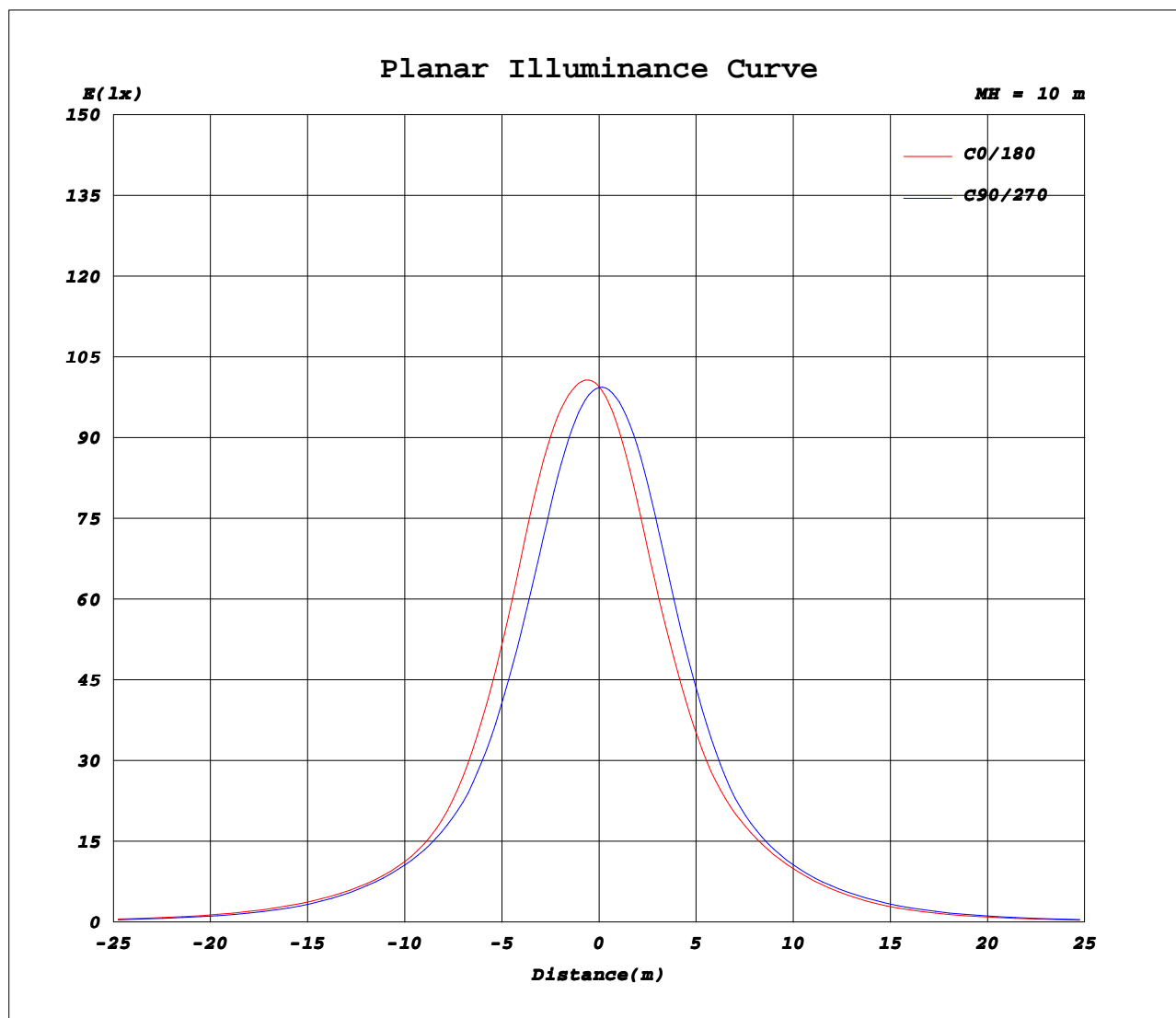
AvgL	cd/m2
L_0~180(65)av	28170
L_0~180(75)av	17468
L_0~180(85)av	13624
L_90~270(65)av	27898
L_90~270(75)av	17028
L_90~270(85)av	13487
L_45(65)av	27941
L_45(75)av	17199
L_45(85)av	13426

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:03 January 2018

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LUC
Test Date: 03 January 2018

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity: 65.0%
Test Distance: 8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.0V I:0.4997A P:103.9W PF:0.9450 Lamp Flux:15121.4x1 lm		
NAME: HB2000-100G-C1-G5 288EA-60D_180914	TYPE:LED	WEIGHT:
SPEC.:G5 288	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

Table--1

UNIT: #10cd

C(DEG) γ (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	995	995	995	996	995	994	994	994	994	994	994	995	995	995	995	996	995	994	994
5	1016	1012	1006	998	988	978	970	961	951	945	938	938	942	946	955	963	972	981	986
10	1012	1002	989	972	950	932	915	896	875	861	849	846	852	862	879	896	917	935	950
15	977	961	937	909	876	847	825	797	770	751	735	731	739	750	771	794	825	852	875
20	892	870	837	803	767	737	715	686	659	639	624	619	627	637	657	679	710	739	764
25	763	741	708	678	648	622	604	579	553	535	520	516	522	531	548	569	597	622	645
30	627	607	579	553	528	509	496	476	455	442	429	426	431	435	447	465	489	508	527
35	493	474	456	440	423	413	407	395	384	377	369	367	369	369	374	386	399	413	421
40	385	373	366	362	353	349	347	341	335	329	324	323	323	322	324	334	341	349	352
45	320	310	311	309	305	302	301	297	292	286	283	282	282	283	283	291	299	301	302
50	274	267	268	266	262	259	258	253	246	241	235	234	237	238	240	249	257	259	259
55	233	227	226	223	217	212	210	203	195	190	183	182	185	188	192	201	209	212	213
60	188	182	178	173	166	162	159	152	145	139	134	134	137	138	143	149	157	161	163
65	140	136	132	127	122	118	116	111	106	101	97.8	95.6	98.3	101	105	109	114	118	120
70	97.1	94.2	90.7	86.6	81.9	78.6	77.7	74.0	68.5	64.4	61.6	60.0	61.9	63.8	67.4	70.4	75.3	78.2	79.6
75	57.1	55.5	51.9	49.1	46.2	44.1	43.8	40.6	37.3	35.1	33.1	32.2	33.3	34.4	36.8	38.9	42.3	44.0	44.4
80	29.7	29.2	27.2	26.2	24.4	23.6	23.5	22.0	20.3	19.3	18.0	17.7	18.0	18.6	20.0	21.1	22.6	23.4	23.6
85	15.2	14.9	14.1	13.2	12.2	12.1	11.9	11.1	10.0	9.58	9.11	8.75	8.52	9.24	9.78	9.30	10.1	10.8	11.6
90	5.29	5.32	4.93	4.60	4.74	5.58	5.77	5.59	5.15	4.99	4.81	4.75	4.43	4.59	4.73	4.54	4.71	4.99	5.29
95	1.92	1.90	1.86	2.04	2.60	3.25	3.49	3.24	2.60	2.17	2.16	2.24	1.74	1.71	1.61	1.54	1.90	2.54	2.58
100	2.07	2.07	2.06	2.12	2.24	2.38	2.49	2.54	2.45	2.36	2.37	2.41	1.80	1.76	1.70	1.67	1.64	1.63	1.62
105	2.35	2.37	2.41	2.47	2.47	2.55	2.58	2.63	2.68	2.73	2.77	2.81	2.13	2.10	2.03	1.99	1.95	1.94	1.93
110	2.66	2.68	2.76	2.85	2.93	3.03	3.04	3.06	3.10	3.18	3.27	3.26	2.54	2.51	2.49	2.38	2.32	2.31	2.35
115	3.05	3.08	3.14	3.30	3.42	3.52	3.54	3.59	3.63	3.72	3.71	3.71	3.00	2.94	2.89	2.89	2.80	2.79	2.82
120	3.48	3.51	3.55	3.73	3.92	4.07	4.09	4.17	4.21	4.20	4.16	4.21	3.51	3.45	3.33	3.36	3.37	3.36	3.35
125	3.93	3.96	4.03	4.16	4.42	4.62	4.67	4.77	4.78	4.68	4.65	4.70	4.04	3.97	3.85	3.85	3.94	3.96	3.92
130	4.39	4.45	4.49	4.62	4.86	5.06	5.12	5.21	5.20	5.12	5.15	5.19	4.57	4.50	4.36	4.34	4.42	4.44	4.39
135	4.87	4.93	5.04	5.09	5.20	5.40	5.48	5.56	5.54	5.55	5.62	5.66	5.11	5.03	4.91	4.82	4.79	4.83	4.78
140	5.35	5.42	5.53	5.56	5.63	5.73	5.78	5.85	5.92	5.96	6.07	6.07	5.57	5.51	5.43	5.32	5.22	5.18	5.14
145	5.85	5.89	5.95	5.98	6.05	6.11	6.15	6.22	6.29	6.35	6.39	6.40	5.98	5.94	5.87	5.76	5.68	5.63	5.59
150	6.26	6.29	6.31	6.39	6.45	6.49	6.51	6.55	6.61	6.66	6.64	6.66	6.34	6.29	6.21	6.21	6.12	6.06	6.03
155	6.59	6.61	6.63	6.66	6.74	6.77	6.77	6.80	6.83	6.81	6.81	6.83	6.56	6.52	6.48	6.48	6.47	6.41	6.40
160	6.83	6.85	6.87	6.90	6.92	6.96	6.95	6.96	6.95	6.94	6.94	6.95	6.72	6.70	6.68	6.68	6.68	6.69	6.68
165	7.05	7.05	7.06	7.06	7.07	7.08	7.06	7.06	7.03	7.04	7.07	7.07	6.91	6.90	6.88	6.86	6.83	6.86	6.86
170	7.17	7.16	7.16	7.16	7.18	7.17	7.13	7.13	7.13	7.15	7.17	7.17	7.06	7.05	7.05	7.02	6.99	6.98	6.99
175	7.23	7.23	7.23	7.26	7.26	7.22	7.20	7.20	7.21	7.24	7.26	7.24	7.19	7.19	7.20	7.20	7.15	7.13	7.12
180	7.29	7.29	7.30	7.32	7.29	7.26	7.25	7.25	7.27	7.28	7.26	7.25	7.29	7.29	7.30	7.32	7.29	7.26	7.25

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:03 January 2018
γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.0V I:0.4997A P:103.9W PF:0.9450 Lamp Flux:15121.4x1 lm		
NAME: HB2000-100G-C1-G5 288EA-60D_180914	TYPE:LED	WEIGHT:
SPEC.:G5 288	DIM.:	SERIAL No.:
MFR.: ICEPIPE	SUR.:	Shielding Angle:

Table--2

UNIT: #10cd

C(DEC) γ (DEC)	285	300	315	330	345														
0	994	994	994	994	995														
5	996	1004	1011	1016	1018														
10	970	989	1003	1013	1017														
15	906	938	962	979	987														
20	800	840	872	897	908														
25	678	714	745	771	781														
30	554	587	613	636	644														
35	439	462	481	501	507														
40	360	372	382	393	395														
45	308	315	320	325	326														
50	264	270	274	277	279														
55	219	226	231	235	238														
60	169	178	183	189	192														
65	124	130	135	142	144														
70	83.9	89.7	93.7	98.4	101														
75	47.4	51.7	54.9	58.8	60.3														
80	24.9	27.3	28.6	30.6	31.3														
85	12.9	13.8	14.8	15.9	16.1														
90	5.62	5.34	5.30	6.01	6.01														
95	2.28	1.85	1.43	1.35	1.43														
100	1.58	1.54	1.54	1.53	1.57														
105	1.87	1.82	1.85	1.80	1.80														
110	2.31	2.19	2.15	2.11	2.05														
115	2.76	2.64	2.56	2.39	2.40														
120	3.27	3.14	2.97	2.79	2.79														
125	3.81	3.61	3.40	3.23	3.22														
130	4.29	4.07	3.82	3.69	3.71														
135	4.67	4.44	4.32	4.26	4.22														
140	5.03	4.91	4.82	4.80	4.75														
145	5.48	5.39	5.33	5.30	5.29														
150	5.96	5.88	5.82	5.74	5.75														
155	6.35	6.30	6.22	6.15	6.17														
160	6.65	6.58	6.54	6.50	6.50														
165	6.85	6.82	6.80	6.78	6.79														
170	7.01	7.00	6.98	6.97	6.99														
175	7.14	7.15	7.14	7.12	7.13														
180	7.25	7.27	7.28	7.26	7.25														

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LUC
Test Date:03 January 2018

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity:65.0%
Test Distance:8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

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	9952	9949	9951	9959	9954	9941	9937	9938	9935	9944
3.0	10115	10088	10049	10002	9940	9888	9837	9776	9718	9686
6.0	10176	10122	10042	9950	9824	9717	9629	9512	9386	9302
9.0	10155	10067	9945	9795	9606	9438	9292	9115	8933	8806
12.0	10035	9909	9731	9518	9256	9028	8838	8608	8356	8186
15.0	9771	9614	9370	9087	8757	8473	8251	7973	7698	7508
18.0	9331	9131	8814	8489	8126	7831	7601	7308	7021	6824
21.0	8687	8460	8122	7789	7431	7141	6922	6646	6371	6185
24.0	7906	7680	7351	7033	6712	6447	6264	6009	5740	5562
27.0	7082	6866	6570	6301	5995	5759	5590	5343	5129	4952
30.0	6272	6070	5791	5531	5277	5093	4958	4760	4555	4420
33.0	5451	5251	5025	4833	4616	4481	4389	4229	4095	3987
36.0	4680	4503	4332	4206	4059	3982	3933	3836	3731	3663
39.0	4025	3888	3803	3746	3641	3597	3579	3508	3434	3374
42.0	3554	3443	3413	3387	3321	3288	3271	3228	3176	3112
45.0	3197	3101	3108	3093	3049	3019	3008	2969	2922	2864
48.0	2908	2828	2844	2831	2791	2762	2756	2712	2654	2601
51.0	2658	2588	2598	2581	2535	2498	2485	2434	2366	2311
54.0	2417	2353	2344	2320	2263	2216	2197	2135	2060	2003
57.0	2159	2102	2074	2038	1968	1918	1892	1825	1744	1684
60.0	1876	1823	1780	1733	1662	1616	1586	1523	1446	1391
63.0	1582	1539	1489	1445	1378	1340	1325	1260	1197	1152
66.0	1315	1269	1234	1193	1141	1105	1093	1039	975.9	931.7
69.0	1069	1031	979.4	943.9	897.6	864.9	854.3	811.6	757.7	716.7
72.0	809.0	784.0	740.7	701.8	660.9	634.0	627.6	593.9	548.9	515.8
75.0	570.9	555.0	518.6	491.2	462.2	441.2	437.8	406.5	372.7	351.0
78.0	386.7	375.2	352.2	332.7	313.0	299.1	295.6	278.8	254.5	243.4
81.0	262.1	255.5	241.8	231.5	218.3	211.4	209.2	193.8	176.0	169.4
84.0	176.4	172.3	163.2	155.2	144.0	140.6	140.0	130.3	115.4	109.5
87.0	103.6	102.6	97.53	92.15	89.15	90.53	89.85	84.54	72.85	68.64
90.0	52.86	53.15	49.27	45.96	47.37	55.78	57.66	55.92	51.51	49.93
93.0	17.82	17.66	17.63	20.64	29.22	38.96	42.94	39.84	30.58	25.11
96.0	19.71	19.67	19.25	20.35	24.88	29.25	31.63	29.17	24.34	22.00
99.0	20.51	20.46	20.14	20.84	22.24	23.82	25.21	25.50	24.37	23.06
102.0	21.49	21.47	21.80	22.25	22.84	24.13	25.03	25.36	25.05	24.94
105.0	23.47	23.70	24.07	24.70	24.70	25.46	25.81	26.31	26.79	27.25
108.0	25.27	25.47	26.31	26.73	27.33	28.35	28.50	28.69	29.24	29.82
111.0	27.32	27.58	28.38	29.38	30.37	31.32	31.42	31.61	32.04	32.78
114.0	29.64	29.98	30.68	32.17	33.21	34.26	34.37	34.76	35.26	36.06
117.0	32.15	32.48	33.07	34.90	36.41	37.28	37.56	38.07	38.67	39.10
120.0	34.77	35.12	35.48	37.29	39.23	40.70	40.93	41.69	42.15	41.97
123.0	37.46	37.84	38.38	39.79	42.03	43.95	44.50	45.44	45.45	44.77
126.0	40.15	40.57	41.20	42.50	45.32	47.36	47.80	48.71	48.84	47.64
129.0	42.94	43.47	43.83	45.29	47.78	49.91	50.42	51.32	51.42	50.50
132.0	45.77	46.29	47.01	48.08	50.01	52.04	52.70	53.60	53.40	52.85
135.0	48.72	49.29	50.35	50.86	52.04	54.02	54.79	55.57	55.36	55.47
138.0	51.61	52.21	53.39	53.81	54.62	55.76	56.86	57.41	57.41	58.03
141.0	54.47	55.20	56.15	56.54	57.09	58.11	58.55	59.31	59.98	60.29
144.0	57.65	58.02	58.78	59.00	59.79	60.42	60.80	61.54	62.11	62.60
147.0	60.20	60.49	60.96	61.51	62.29	62.75	62.90	63.54	64.31	64.75
150.0	62.60	62.93	63.09	63.90	64.53	64.88	65.09	65.48	66.10	66.55
153.0	64.70	64.98	65.08	65.69	66.40	66.67	66.89	67.14	67.38	67.60
156.0	66.48	66.65	66.79	67.05	67.88	68.31	68.10	68.40	68.68	68.38
159.0	67.79	67.97	68.25	68.57	68.96	69.36	69.32	69.41	69.31	69.12
162.0	69.24	69.37	69.53	69.69	69.90	69.91	70.00	70.01	69.75	69.81
165.0	70.52	70.53	70.58	70.57	70.69	70.75	70.62	70.57	70.32	70.44
168.0	71.36	71.33	71.27	71.17	71.41	71.43	71.03	70.97	70.90	71.02
171.0	71.85	71.79	71.69	71.78	72.05	71.74	71.44	71.39	71.51	71.67
174.0	72.19	72.13	72.18	72.42	72.44	72.11	71.85	71.88	71.95	72.19
177.0	72.55	72.53	72.63	72.95	72.87	72.48	72.31	72.35	72.48	72.79
180.0	72.93	72.89	73.01	73.20	72.88	72.59	72.49	72.54	72.67	72.81
G/C	150.0	165.0	180.0	195.0	210.0	225.0	240.0	255.0	270.0	285.0
0.0	9943	9947	9952	9949	9951	9959	9954	9941	9937	9938
3.0	9650	9650	9671	9693	9750	9797	9856	9896	9929	9980
6.0	9235	9226	9262	9321	9423	9529	9646	9742	9820	9933
9.0	8692	8671	8728	8816	8967	9124	9312	9469	9600	9776
12.0	8042	8009	8079	8190	8381	8590	8847	9066	9256	9494
15.0	7352	7309	7385	7501	7714	7945	8247	8515	8753	9061
18.0	6668	6623	6695	6811	7020	7259	7572	7860	8114	8464
21.0	6034	5987	6059	6156	6350	6568	6866	7154	7405	7756
24.0	5402	5364	5430	5521	5701	5911	6195	6453	6684	7022
27.0	4815	4770	4836	4901	5052	5249	5518	5770	5977	6290
30.0	4295	4263	4314	4351	4470	4649	4888	5084	5266	5542

C Range: 0 - 360DEG

C Interval: 15.0DEG

Test Speed: HIGH

Temperature: 25.3DEG

Operators: LUC

Test Date: 03 January 2018

γ Range: 0 - 180DEG

γ Interval: 1.0DEG

Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.351

Humidity: 65.0%

Test Distance: 8.000m [K=1.0000]

Remarks: HB2000-100G-C1-G5 288EA-60D_180914

Photometric Data Table [cd]

33.0	3905	3877	3910	3917	3987	4122	4302	4472	4595	4822
36.0	3597	3574	3592	3578	3627	3742	3856	3987	4044	4199
39.0	3327	3313	3312	3302	3335	3429	3514	3608	3639	3726
42.0	3081	3067	3065	3062	3073	3161	3236	3284	3307	3376
45.0	2829	2816	2821	2827	2825	2913	2989	3010	3021	3082
48.0	2549	2539	2557	2568	2574	2665	2743	2760	2757	2815
51.0	2253	2240	2269	2285	2312	2399	2480	2501	2499	2555
54.0	1937	1927	1961	1981	2023	2106	2191	2220	2225	2283
57.0	1623	1614	1646	1668	1721	1797	1880	1913	1930	1994
60.0	1344	1336	1365	1382	1431	1493	1568	1606	1628	1693
63.0	1117	1101	1123	1142	1184	1233	1292	1333	1355	1407
66.0	898.0	885.8	905.9	929.7	968.5	1004	1062	1106	1122	1170
69.0	687.6	670.5	687.6	711.1	748.5	782.0	829.7	863.2	875.7	921.4
72.0	487.4	474.8	491.2	508.1	538.8	565.6	606.8	631.1	640.3	678.8
75.0	331.4	322.1	333.3	343.8	367.6	389.2	423.2	439.8	443.7	474.3
78.0	232.1	226.9	232.4	237.7	252.8	264.0	288.7	297.6	298.6	318.4
81.0	161.3	156.0	158.8	164.3	174.7	181.9	197.0	207.0	208.2	222.3
84.0	105.4	101.7	99.66	105.8	114.1	112.6	122.2	132.0	136.1	148.2
87.0	66.09	63.98	59.55	65.35	70.50	65.28	70.74	75.51	85.35	93.52
90.0	48.11	47.53	44.28	45.89	47.28	45.44	47.10	49.91	52.92	56.20
93.0	26.36	29.41	26.98	27.93	25.88	23.04	27.57	35.15	37.15	35.05
96.0	21.12	22.14	17.12	16.69	15.86	14.85	17.33	21.25	20.39	18.01
99.0	23.03	23.52	17.40	17.09	16.45	16.11	15.87	15.92	15.80	15.37
102.0	25.23	25.46	19.06	18.68	18.20	17.92	17.58	17.40	17.35	16.87
105.0	27.74	28.05	21.32	20.99	20.32	19.92	19.50	19.38	19.35	18.73
108.0	30.91	30.78	23.80	23.42	23.27	22.21	21.64	21.54	21.73	21.24
111.0	33.55	33.45	26.25	25.92	25.66	24.71	24.04	23.99	24.46	24.02
114.0	36.23	36.19	28.99	28.55	28.11	27.81	26.92	26.92	27.23	26.60
117.0	38.80	39.07	31.99	31.35	30.58	30.77	30.16	30.01	30.22	29.52
120.0	41.59	42.07	35.09	34.48	33.33	33.59	33.73	33.59	33.49	32.75
123.0	44.51	45.07	38.25	37.59	36.37	36.52	36.83	37.32	37.01	35.96
126.0	47.50	47.99	41.39	40.76	39.49	39.49	40.60	40.70	40.32	39.30
129.0	50.52	50.97	44.61	43.91	42.56	42.57	43.42	43.55	43.08	42.12
132.0	53.42	53.85	47.88	47.15	45.86	45.19	45.69	46.07	45.56	44.44
135.0	56.21	56.59	51.08	50.31	49.15	48.23	47.87	48.28	47.82	46.66
138.0	58.90	59.06	54.04	53.26	52.20	51.21	50.30	50.36	50.18	48.55
141.0	61.54	61.46	56.51	55.99	55.31	53.99	53.07	52.72	52.31	51.20
144.0	63.38	63.46	58.91	58.61	57.99	56.65	55.86	55.45	55.03	53.97
147.0	64.94	65.23	61.49	60.91	60.27	59.55	58.66	57.93	57.58	56.77
150.0	66.37	66.65	63.39	62.87	62.11	62.05	61.18	60.58	60.35	59.57
153.0	67.55	67.79	64.84	64.49	63.79	63.87	63.19	62.89	62.69	62.12
156.0	68.33	68.49	65.93	65.55	65.19	65.16	65.18	64.83	64.60	64.34
159.0	69.13	69.24	66.88	66.68	66.38	66.32	66.41	66.44	66.38	66.07
162.0	69.88	69.92	67.98	67.83	67.62	67.52	67.37	67.61	67.61	67.25
165.0	70.66	70.66	69.09	68.98	68.82	68.56	68.34	68.55	68.59	68.47
168.0	71.35	71.39	70.04	70.01	69.86	69.57	69.24	69.30	69.37	69.57
171.0	71.80	71.84	70.77	70.81	70.76	70.51	70.22	70.13	70.12	70.29
174.0	72.33	72.16	71.50	71.61	71.69	71.56	71.23	71.00	70.98	71.13
177.0	72.83	72.65	72.61	72.57	72.71	72.63	72.14	71.88	71.90	71.90
180.0	72.63	72.49	72.89	72.91	72.99	73.22	72.87	72.61	72.49	72.53
G/C	300.0	315.0	330.0	345.0						
0.0	9935	9944	9943	9947						
3.0	10031	10075	10111	10127						
6.0	10032	10117	10169	10200						
9.0	9942	10067	10156	10192						
12.0	9731	9914	10040	10096						
15.0	9381	9619	9794	9869						
18.0	8842	9139	9366	9461						
21.0	8162	8482	8744	8849						
24.0	7407	7711	7983	8090						
27.0	6638	6915	7161	7258						
30.0	5866	6127	6361	6438						
33.0	5100	5322	5523	5599						
36.0	4400	4573	4758	4818						
39.0	3870	3977	4102	4139						
42.0	3467	3545	3627	3642						
45.0	3155	3200	3252	3264						
48.0	2875	2913	2952	2959						
51.0	2619	2653	2687	2704						
54.0	2354	2400	2441	2460						
57.0	2076	2130	2179	2205						
60.0	1776	1834	1894	1923						
63.0	1484	1539	1600	1626						
66.0	1229	1276	1325	1343						

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LUC
Test Date: 03 January 2018

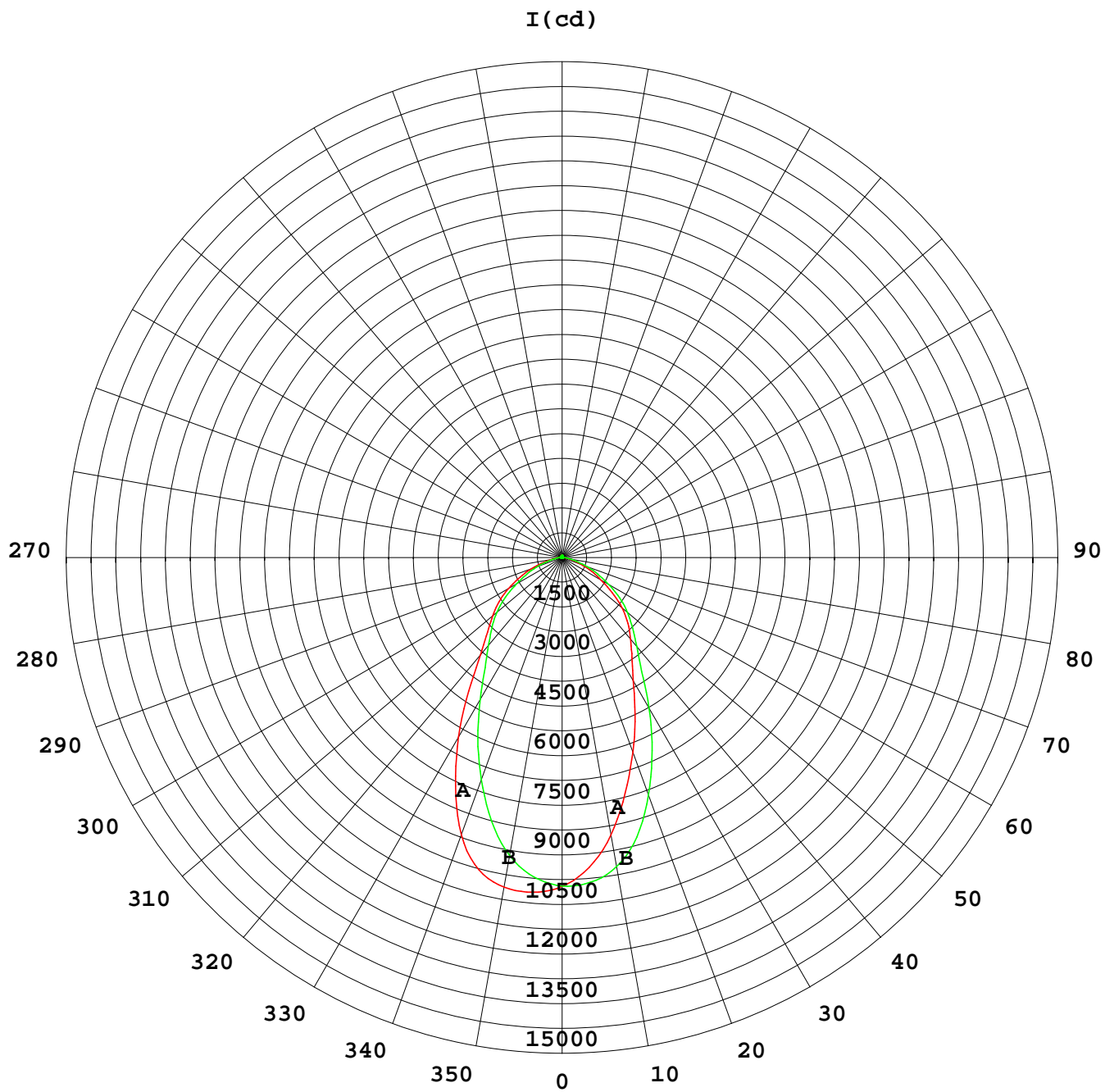
γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity: 65.0%
Test Distance: 8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914

Photometric Data Table [cd]

69.0	970.4	1021	1078	1104
72.0	734.1	776.0	826.6	843.4
75.0	517.0	549.2	588.3	602.9
78.0	349.4	371.0	399.2	407.4
81.0	239.6	252.2	271.9	274.1
84.0	161.6	171.3	182.9	185.4
87.0	97.93	103.2	111.8	113.6
90.0	53.41	52.98	60.13	60.12
93.0	24.95	14.80	12.62	13.26
96.0	15.13	14.20	13.98	14.79
99.0	14.99	14.96	15.00	15.71
102.0	16.45	16.31	16.14	16.16
105.0	18.17	18.49	18.05	17.96
108.0	20.17	20.09	20.05	19.52
111.0	22.83	22.27	21.65	21.12
114.0	25.60	24.74	23.41	23.24
117.0	28.45	27.15	25.66	25.42
120.0	31.43	29.73	27.91	27.88
123.0	34.16	32.28	30.56	30.50
126.0	37.23	34.86	33.30	33.15
129.0	39.92	37.45	35.90	36.04
132.0	42.12	40.13	39.04	39.02
135.0	44.38	43.17	42.63	42.16
138.0	47.04	46.25	45.87	45.35
141.0	49.99	49.26	49.02	48.68
144.0	52.91	52.26	52.17	51.84
147.0	55.90	55.37	54.86	54.72
150.0	58.81	58.24	57.35	57.51
153.0	61.38	60.81	59.92	60.15
156.0	63.64	62.79	62.30	62.50
159.0	65.39	64.72	64.33	64.32
162.0	66.82	66.49	66.24	66.23
165.0	68.17	67.95	67.85	67.94
168.0	69.31	69.10	69.05	69.19
171.0	70.34	70.10	69.94	70.13
174.0	71.27	71.07	70.86	70.97
177.0	72.10	72.11	71.85	71.89
180.0	72.68	72.79	72.64	72.51

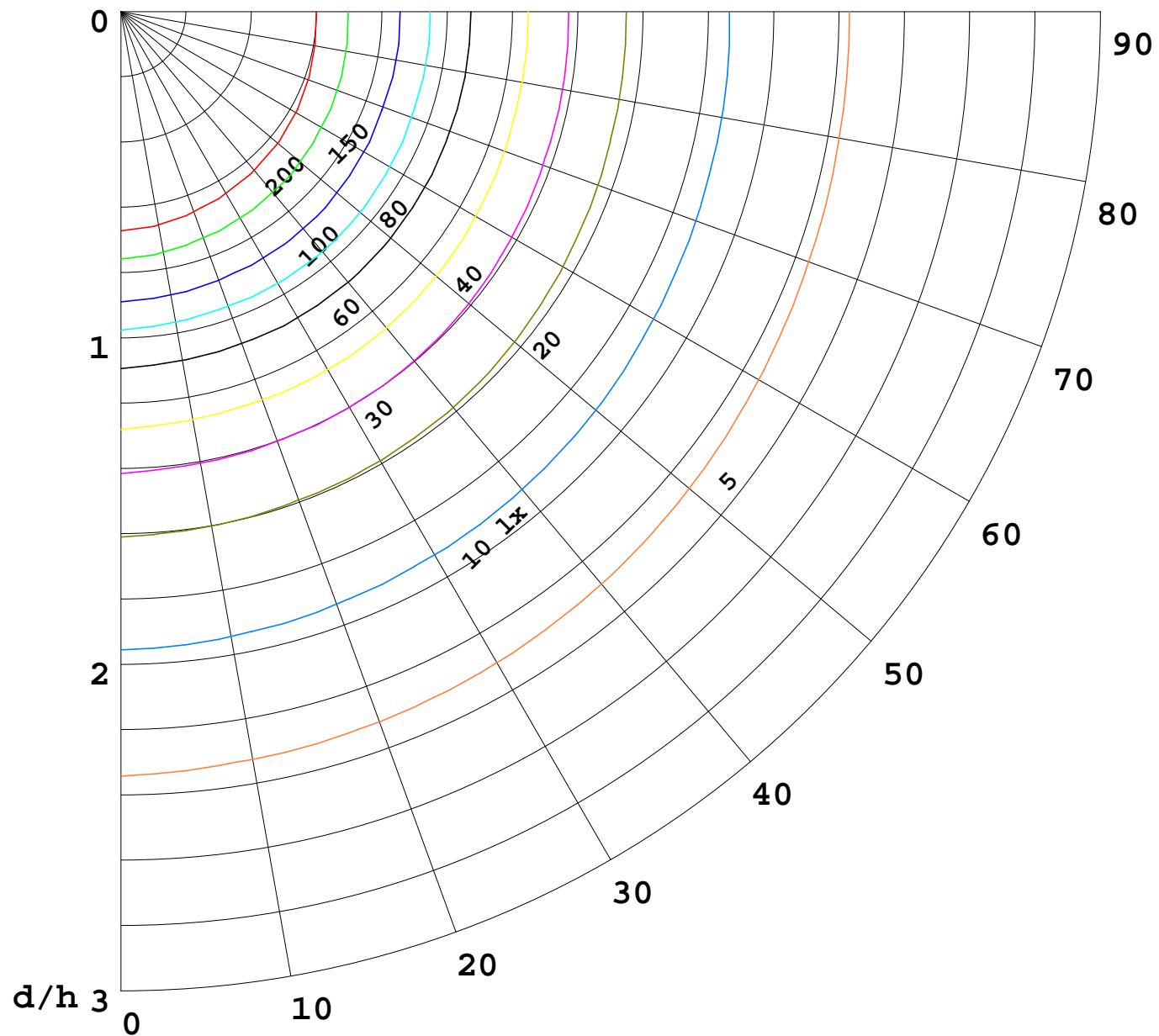
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LUC
Test Date: 03 January 2018

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.351
Humidity: 65.0%
Test Distance: 8.000m [K=1.0000]
Remarks: HB2000-100G-C1-G5 288EA-60D_180914



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

