

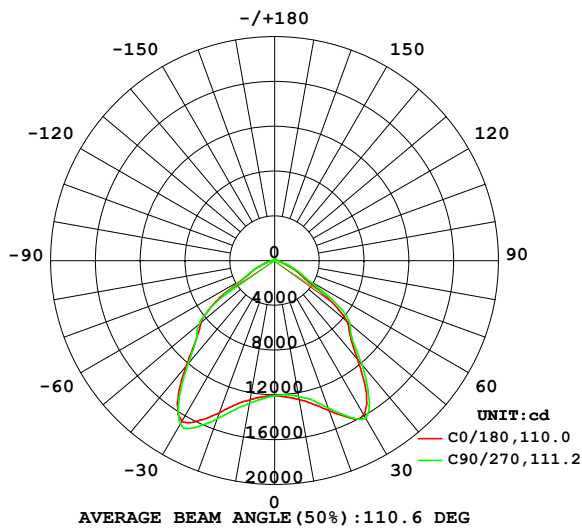
## EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## LUMINAIRE PHOTOMETRIC TEST REPORT

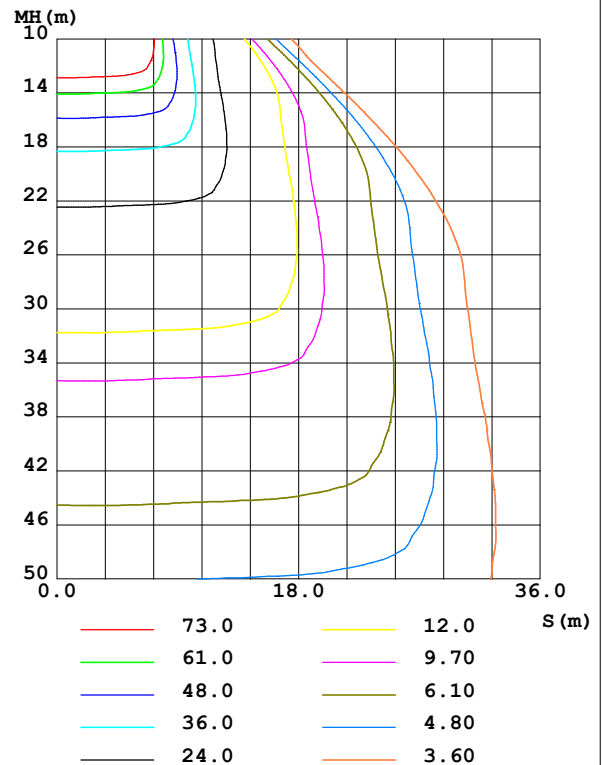
Test:U:229.4V I:0.880A P:197.8W PF:0.979 Freq:50.01Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:38289.3x1 lm		
NAME: HB68-200H-5070-H00191+H00C01A	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 193.61 lm/W			
MODEL	/	Imax (cd)	17080	S/MH(C0/180)	1.50
NOMINAL POWER(W)	/	LOR(%)	100.0	S/MH(C90/270)	1.52
RATED VOLTAGE(V)	/	TOTAL FLUX(lm)	38289	$\eta$ UP,DN(C0-180)	0.6,49.3
NOMINAL FLUX(lm)	38289.3	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.6,49.4
LAMPS INSIDE	1	$\eta$ up (%)	1.2	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	/	$\eta$ down (%)	98.8	CIBSE SHR MAX	1.50

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: ZZX  
Test Date: 2023-07-13

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 26.000m [K=0.4556]  
Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## ZONAL FLUX DIAGRAM

### ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	1260	1236	1231	1240	1262	1283	1294	1287	0- 10	1179	1179	3.08,3.08
20	1427	1385	1401	1412	1445	1473	1504	1489	10- 20	3821	5000	13.1,13.1
30	1589	1561	1627	1654	1659	1668	1681	1650	20- 30	7266	12265	32,32
40	1156	1155	1212	1266	1234	1219	1203	1199	30- 40	9081	21346	55.7,55.7
50	841.9	861.7	878.3	902.1	859.9	883.5	882.9	855.1	40- 50	7745	29091	76,76
60	298.6	322.5	345.3	348.2	316.9	309.7	317.1	284.4	50- 60	5434	34526	90.2,90.2
70	117.3	128.8	143.2	143.4	134.1	131.8	129.5	113.2	60- 70	2187	36713	95.9,95.9
80	37.13	38.46	44.43	46.18	46.22	44.10	39.16	33.59	70- 80	856.8	37570	98.1,98.1
90	8.714	9.729	11.14	11.89	11.54	11.27	9.956	8.761	80- 90	245.4	37815	98.8,98.8
100	5.167	5.989	5.777	5.886	6.008	5.885	5.989	5.965	90-100	77.08	37892	99,99
110	5.300	5.429	5.220	5.380	5.238	5.464	5.401	5.739	100-110	55.78	37948	99.1,99.1
120	6.929	7.787	6.754	8.321	7.168	8.391	7.255	8.308	110-120	64.23	38012	99.3,99.3
130	7.807	7.862	7.834	7.821	7.436	7.705	8.007	8.355	120-130	71.12	38083	99.5,99.5
140	9.455	9.541	9.297	9.072	8.763	8.880	9.468	10.16	130-140	65.64	38149	99.6,99.6
150	9.415	9.562	9.679	9.567	9.451	9.292	9.475	9.893	140-150	59.91	38209	99.8,99.8
160	9.037	8.939	9.048	8.946	8.910	8.920	9.018	9.205	150-160	42.81	38252	99.9,99.9
170	10.26	10.29	10.41	10.36	10.48	10.33	10.27	10.28	160-170	27.30	38279	100,100
180	11.24	11.25	11.34	11.34	11.25	11.26	11.34	11.34	170-180	10.41	38289	100,100
DEG	LUMINOUS INTENSITY:X10cd									UNIT:lm		

Conical surface Flux(90deg): 25356 lm

%lum = 66.2%

%lamp = 66.2%

Conical surface Flux(130deg): 35827 lm

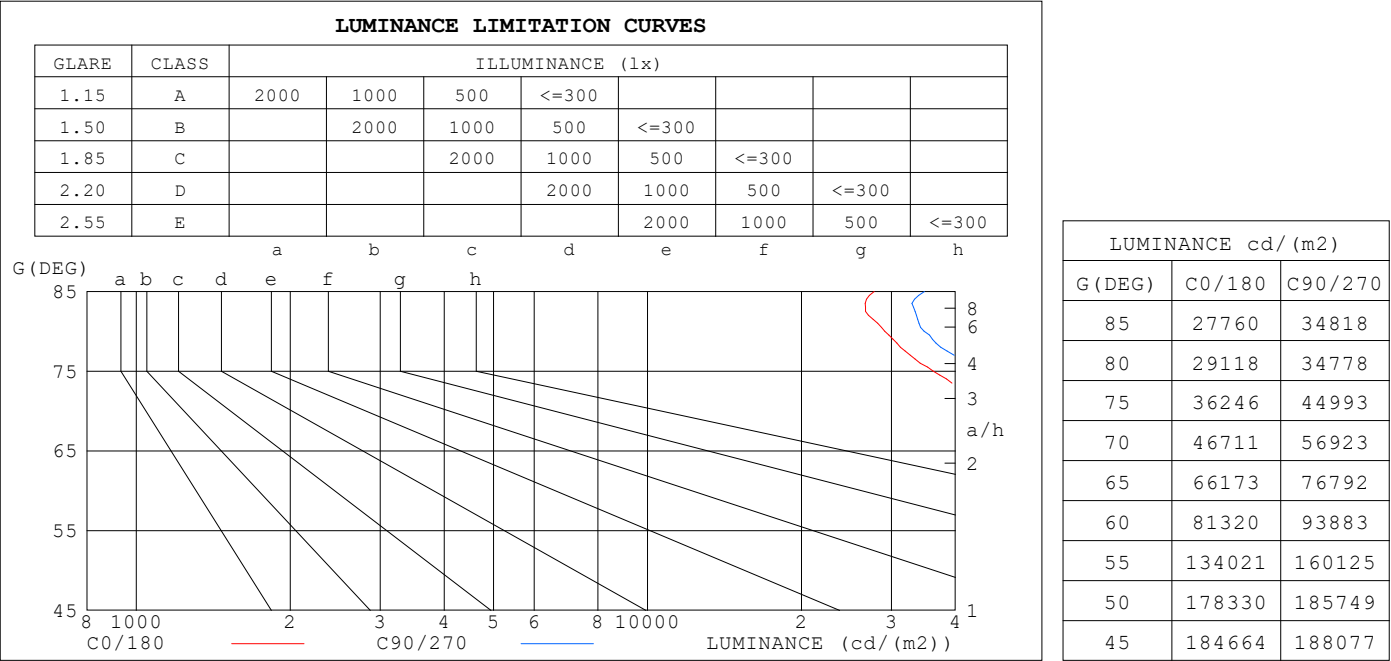
%lum = 93.6%

%lamp = 93.6%

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:ZZX  
Test Date:2023-07-13

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity:65.0%  
Test Distance:26.000m [K=0.4556]  
Remarks:

LUMINANCE LIMITATION CURVES



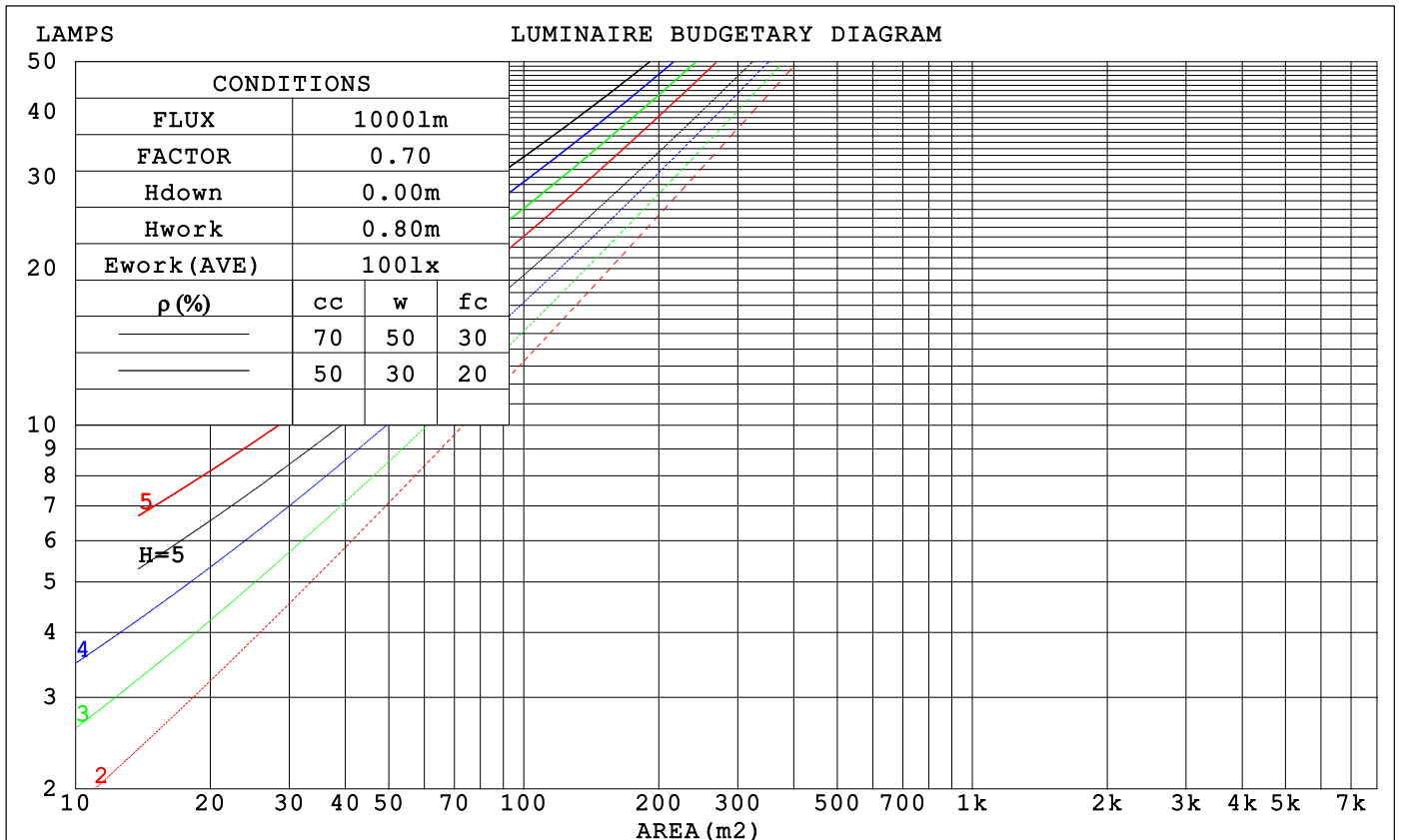
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:ZZX  
Test Date:2023-07-13

γ Range: 0 - 180DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity:65.0%  
Test Distance:26.000m [K=0.4556]  
Remarks:

## EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	.99
1.0	1.06	1.03	.00	1.04	1.01	.98	.00	.97	.95	.96	.94	.92	.92	.90	.89	.87
2.0	.95	.89	.84	.93	.87	.83	.89	.85	.81	.86	.82	.79	.83	.80	.77	.75
3.0	.85	.77	.72	.83	.76	.71	.80	.74	.70	.77	.72	.68	.74	.70	.67	.65
4.0	.76	.68	.62	.74	.67	.61	.72	.65	.60	.69	.64	.59	.67	.62	.59	.57
5.0	.68	.60	.54	.67	.59	.54	.65	.58	.53	.63	.57	.52	.61	.56	.52	.50
6.0	.62	.53	.47	.61	.53	.47	.59	.52	.47	.57	.51	.46	.55	.50	.46	.44
7.0	.56	.48	.42	.55	.47	.42	.53	.46	.41	.52	.46	.41	.51	.45	.41	.39
8.0	.51	.43	.37	.50	.43	.37	.49	.42	.37	.48	.41	.37	.46	.41	.36	.35
9.0	.47	.39	.34	.46	.39	.34	.45	.38	.33	.44	.38	.33	.43	.37	.33	.31
10.0	.43	.36	.30	.43	.35	.30	.41	.35	.30	.41	.34	.30	.40	.34	.30	.28



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:ZZX  
Test Date:2023-07-13

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity:65.0%  
Test Distance:26.000m [K=0.4556]  
Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## WEC AND CCEC

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.255	.145	.046	.248	.141	.045	.234	.134	.043	.222	.128	.041	.210	.122	.039	
2.0	.247	.136	.042	.241	.133	.041	.229	.127	.040	.218	.122	.038	.208	.118	.037	
3.0	.235	.125	.037	.229	.123	.037	.219	.119	.036	.209	.115	.035	.200	.111	.034	
4.0	.222	.115	.034	.217	.113	.034	.207	.110	.033	.199	.107	.032	.191	.104	.032	
5.0	.209	.106	.031	.204	.105	.031	.196	.102	.030	.188	.099	.030	.181	.097	.029	
6.0	.196	.098	.028	.192	.097	.028	.185	.095	.028	.178	.092	.027	.171	.090	.027	
7.0	.185	.091	.026	.181	.090	.026	.175	.088	.025	.168	.086	.025	.163	.084	.025	
8.0	.174	.085	.024	.171	.084	.024	.165	.083	.024	.160	.081	.023	.154	.079	.023	
9.0	.165	.080	.022	.162	.079	.022	.157	.077	.022	.151	.076	.022	.147	.074	.022	
10.0	.156	.075	.021	.153	.074	.021	.149	.073	.020	.144	.071	.020	.139	.070	.020	

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.200	.200	.200	.171	.171	.171	.117	.117	.117	.067	.067	.067	.021	.021	.021	
1.0	.186	.166	.148	.159	.143	.128	.109	.098	.088	.063	.057	.051	.020	.018	.017	
2.0	.176	.142	.113	.151	.122	.098	.103	.084	.068	.060	.049	.040	.019	.016	.013	
3.0	.167	.124	.089	.143	.107	.077	.099	.074	.054	.057	.043	.032	.018	.014	.010	
4.0	.160	.110	.072	.137	.095	.063	.094	.066	.044	.055	.039	.026	.018	.013	.009	
5.0	.153	.099	.060	.131	.086	.052	.090	.060	.037	.052	.035	.022	.017	.012	.007	
6.0	.146	.091	.051	.126	.079	.045	.087	.055	.032	.050	.032	.019	.016	.011	.006	
7.0	.140	.084	.045	.120	.073	.039	.083	.051	.028	.048	.030	.016	.016	.010	.005	
8.0	.134	.078	.040	.115	.068	.035	.080	.048	.025	.046	.028	.015	.015	.009	.005	
9.0	.129	.073	.036	.111	.064	.031	.077	.045	.022	.045	.026	.013	.014	.009	.004	
10.0	.123	.069	.033	.106	.060	.029	.074	.042	.020	.043	.025	.012	.014	.008	.004	

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3℃  
 Operators:ZZX  
 Test Date:2023-07-13

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
 Humidity:65.0%  
 Test Distance:26.000m [K=0.4556]  
 Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## UGR(Unified Glare Rating) Table

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	27.1	28.5	27.5	28.9	29.2	28.5	30.0	28.9	30.3	30.7
3H	27.8	29.1	28.2	29.4	29.8	29.0	30.3	29.4	30.7	31.1
4H	27.9	29.1	28.4	29.5	29.9	29.2	30.4	29.6	30.8	31.2
6H	28.0	29.1	28.5	29.5	29.9	29.3	30.4	29.7	30.8	31.2
8H	28.0	29.1	28.5	29.5	29.9	29.3	30.3	29.7	30.7	31.2
12H	28.0	29.0	28.5	29.4	29.9	29.3	30.3	29.7	30.7	31.1
4H 2H	27.4	28.6	27.8	28.9	29.3	28.7	29.9	29.1	30.2	30.7
3H	28.2	29.2	28.6	29.6	30.0	29.3	30.3	29.8	30.7	31.2
4H	28.4	29.3	28.9	29.8	30.2	29.5	30.4	30.0	30.9	31.3
6H	28.6	29.3	29.1	29.8	30.3	29.7	30.4	30.2	30.9	31.4
8H	28.6	29.3	29.1	29.8	30.3	29.7	30.4	30.2	30.9	31.4
12H	28.6	29.3	29.1	29.8	30.3	29.7	30.4	30.2	30.9	31.4
8H 4H	28.5	29.2	29.0	29.7	30.2	29.6	30.3	30.1	30.7	31.2
6H	28.7	29.3	29.2	29.8	30.3	29.7	30.3	30.3	30.8	31.4
8H	28.7	29.2	29.3	29.8	30.3	29.8	30.3	30.3	30.9	31.4
12H	28.8	29.2	29.3	29.8	30.4	29.9	30.3	30.4	30.9	31.5
12H 4H	28.5	29.1	29.0	29.6	30.1	29.5	30.2	30.1	30.7	31.2
6H	28.7	29.2	29.2	29.7	30.2	29.7	30.3	30.3	30.7	31.3
8H	28.7	29.2	29.3	29.7	30.3	29.8	30.3	30.4	30.8	31.4
CIE190: 2010										

CIE190: 2010  
Area: 0.07354 m2

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:ZZX  
Test Date:2023-07-13

γ Range: 0 - 180DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity:65.0%  
Test Distance:26.000m [K=0.4556]  
Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

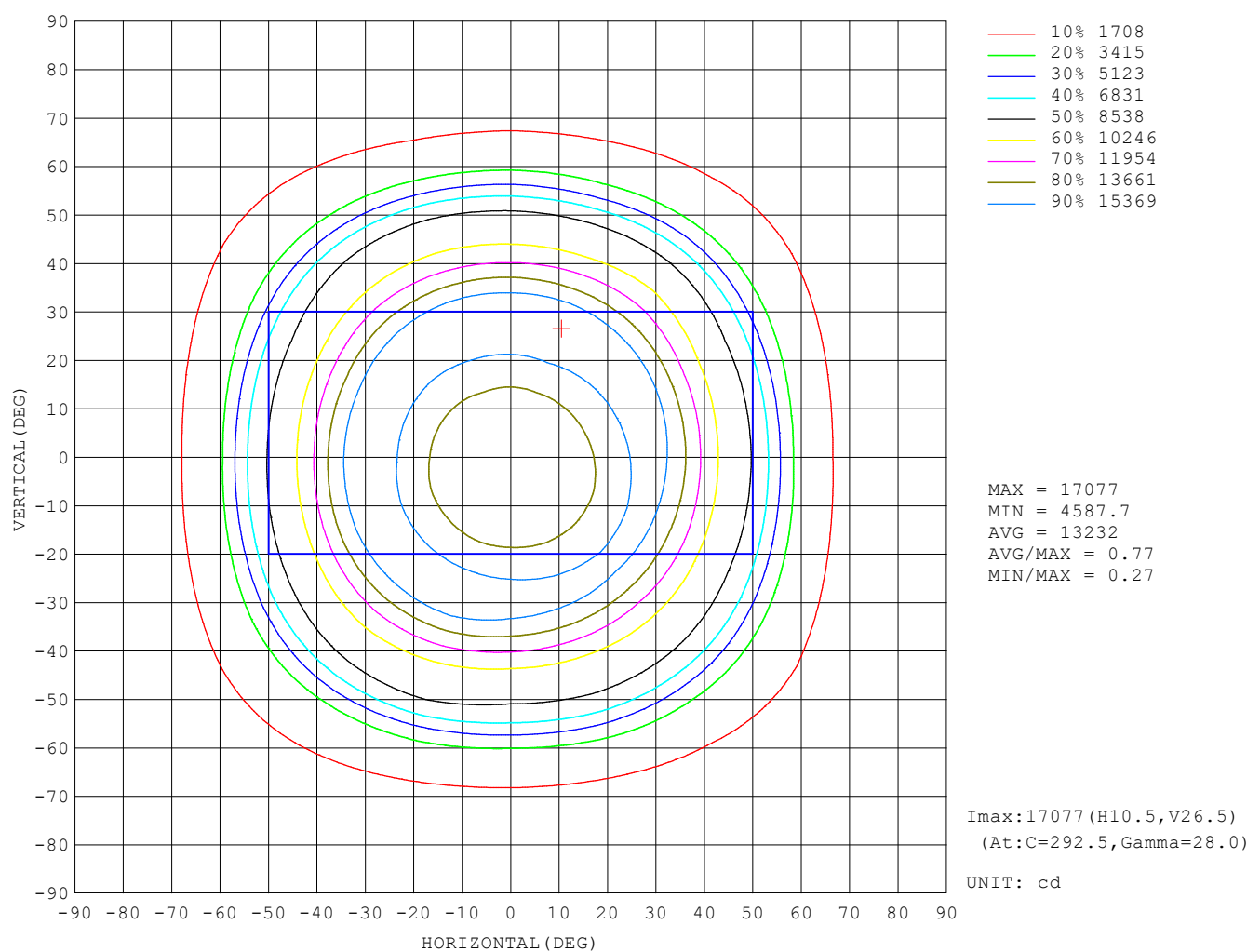
## UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	63	53	46	63	53	46	61	52	46	40
0.80	74	64	57	73	63	57	71	62	56	50
1.00	82	73	67	81	72	66	79	73	66	59
1.25	89	80	74	88	80	74	85	78	73	67
1.50	94	86	80	92	85	79	89	83	78	71
2.00	100	93	87	98	91	87	94	89	85	78
2.50	103	96	91	101	95	90	97	92	88	81
3.00	105	100	95	103	98	94	99	95	92	84
4.00	109	104	100	106	102	99	102	99	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					SHRNOM = 1.25		

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: ZZX  
 Test Date: 2023-07-13

γ Range: 0 - 180DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 26.000m [K=0.4556]  
 Remarks:

## ISOCANDELA DIAGRAM

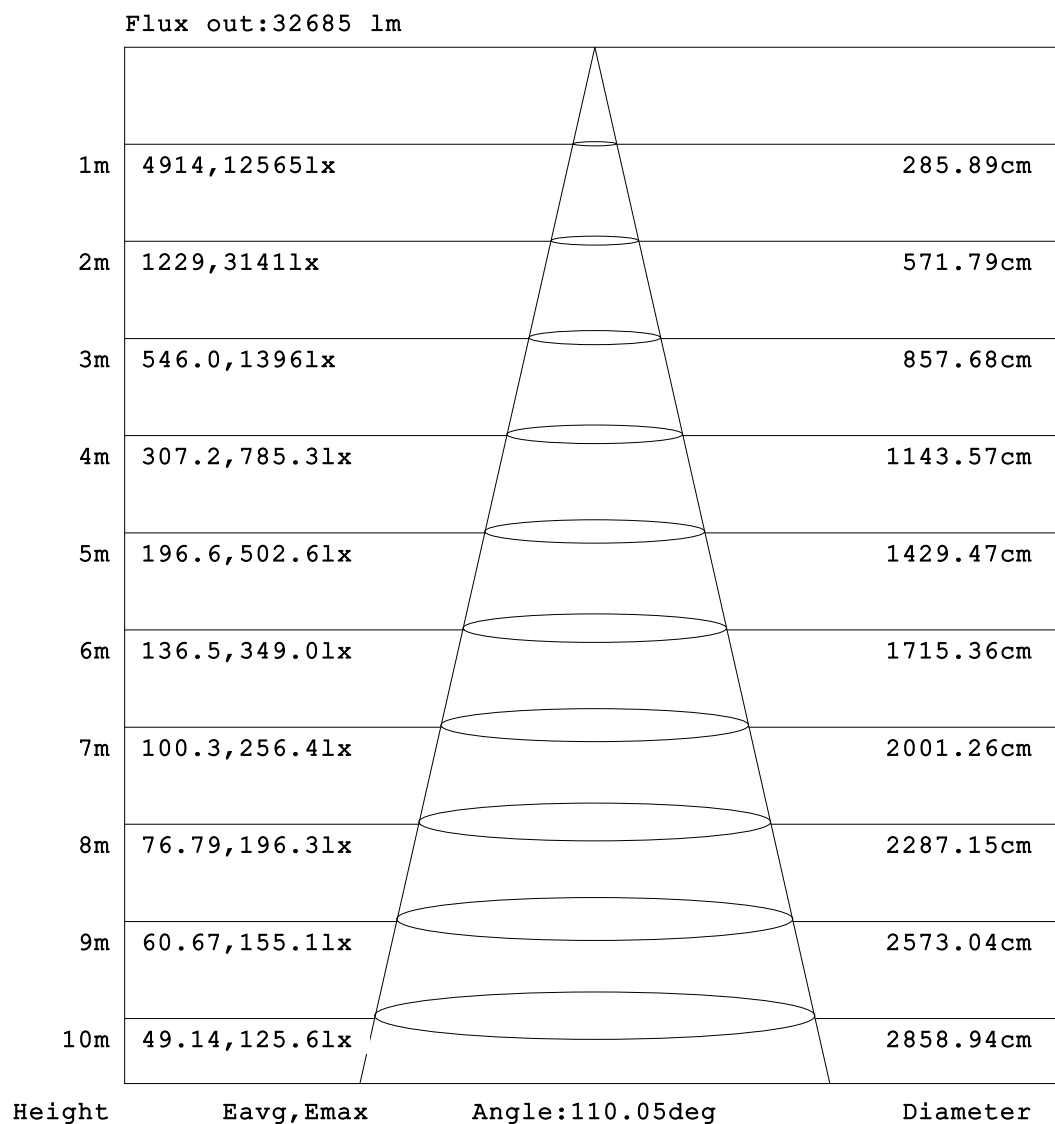


C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: ZZK  
Test Date: 2023-07-13

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 26.000m [K=0.4556]  
Remarks:



## AAI Figure



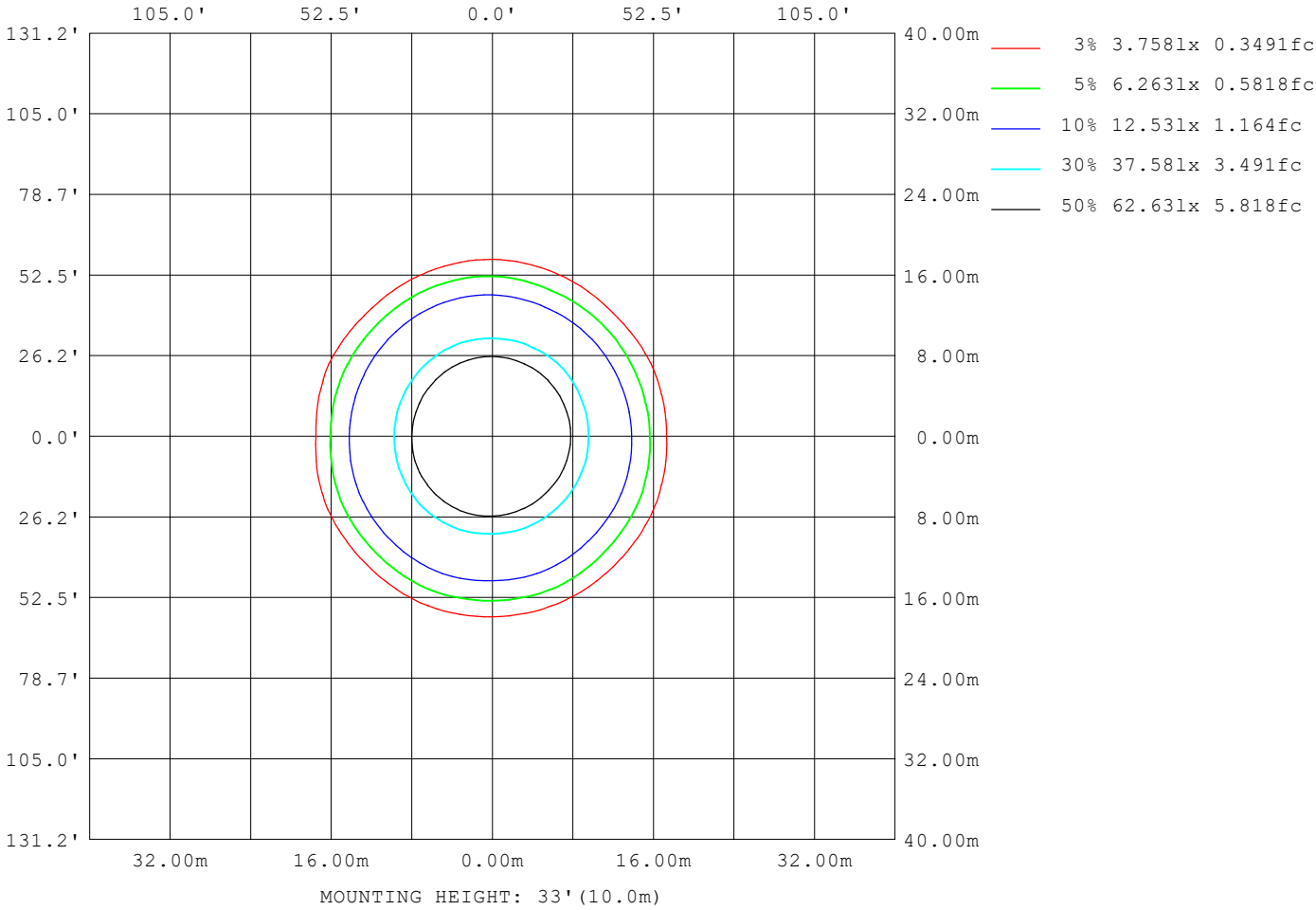
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:ZZX  
Test Date:2023-07-13

γ Range: 0 - 180DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity:65.0%  
Test Distance:26.000m [K=0.4556]  
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: ZZX  
Test Date: 2023-07-13

γ Range: 0 - 180DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 26.000m [K=0.4556]  
Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## LED Avg.L Report

Test:U:229.4V I:0.880A P:197.8W PF:0.979 Freq:50.01Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:38289.3x1 lm		
NAME: HB68-200H-5070-H00191+H00C01A	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

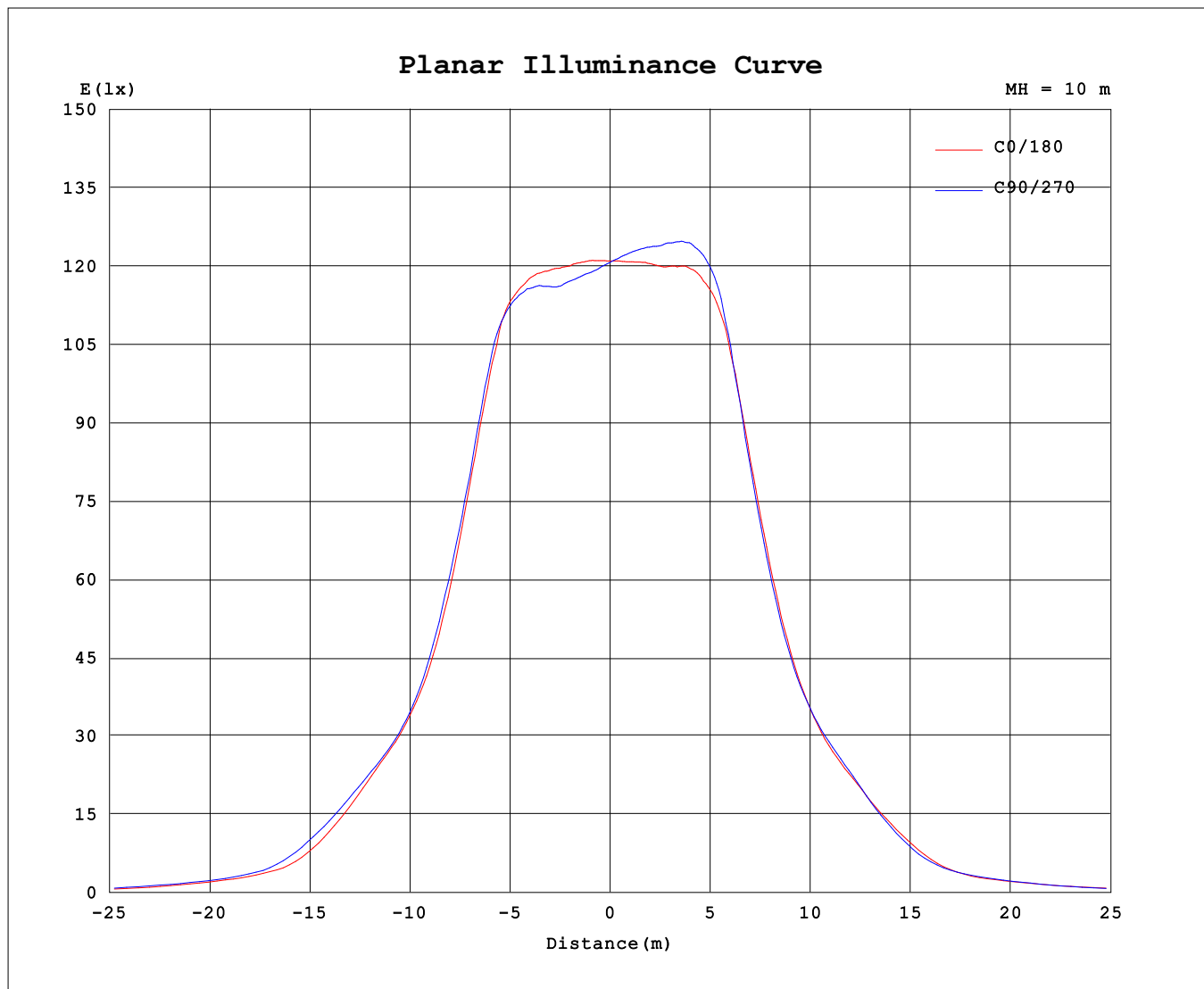
AvgL	cd/m2
L_0~180 (65) av	68369
L_0~180 (75) av	40102
L_0~180 (85) av	32179
L_90~270 (65) av	74375
L_90~270 (75) av	42356
L_90~270 (85) av	32490
L_45 (65) av	70094
L_45 (75) av	40479
L_45 (85) av	31839

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:ZZX  
Test Date:2023-07-13

γ Range: 0 - 180DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity:65.0%  
Test Distance:26.000m [K=0.4556]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: ZZK  
Test Date: 2023-07-13

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 26.000m [K=0.4556]  
Remarks: