

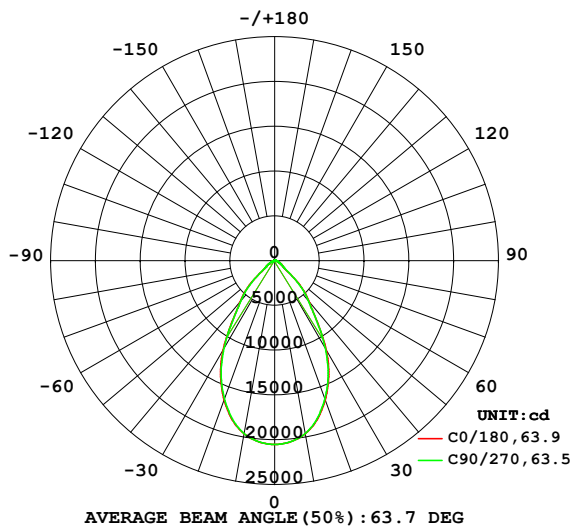
## EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## LUMINAIRE PHOTOMETRIC TEST REPORT

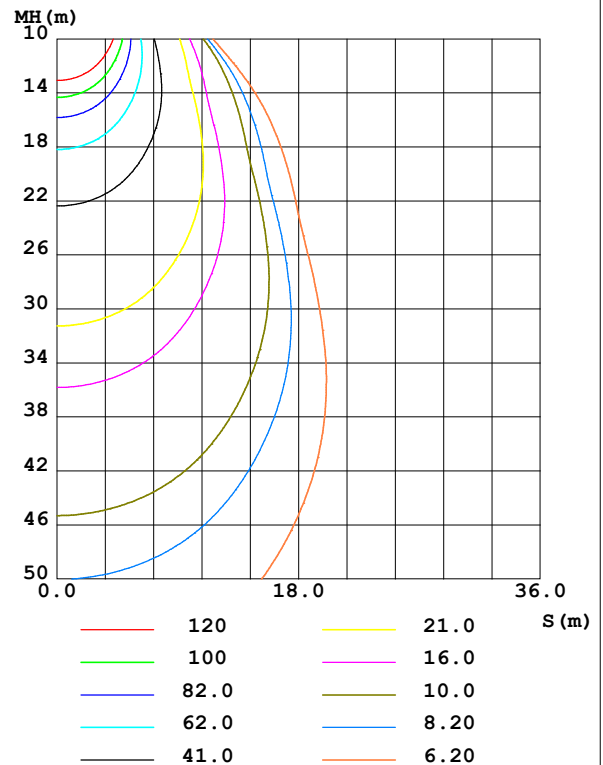
Test:U:230.0V I:0.541A P:121.4W PF:0.975 Freq:50.01Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:23868.6x1 lm		
NAME: HB68-120H-5070-H00196+H00C01A	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 196.67 lm/W			
MODEL	/	I <sub>max</sub> (cd)	20522	S/MH(C0/180)	0.95
NOMINAL POWER(W)	/	LOR(%)	100.0	S/MH(C90/270)	0.95
RATED VOLTAGE(V)	/	TOTAL FLUX(lm)	23869	η UP,DN(C0-180)	0.4,49.6
NOMINAL FLUX(lm)	23868.6	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.4,49.6
LAMPS INSIDE	1	η up (%)	0.7	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	/	η down (%)	99.3	CIBSE SHR MAX	0.95

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:ZZX  
Test Date:2023-07-03

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

## ZONAL FLUX DIAGRAM

### ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	1964	1964	1961	1964	1964	1964	1961	1964	0- 10	1917	1917	8.03,8.03
20	1654	1644	1641	1644	1654	1644	1641	1644	10- 20	5117	7034	29.5,29.5
30	1153	1138	1136	1138	1153	1138	1136	1138	20- 30	6459	13493	56.5,56.5
40	603.2	589.4	594.0	589.4	603.2	589.4	594.0	589.4	30- 40	5169	18661	78.2,78.2
50	189.7	185.4	186.6	185.4	189.7	185.4	186.6	185.4	40- 50	3088	21750	91.1,91.1
60	79.71	78.53	80.66	78.53	79.71	78.53	80.66	78.53	50- 60	1053	22803	95.5,95.5
70	35.65	35.23	35.43	35.23	35.65	35.23	35.43	35.23	60- 70	536.3	23339	97.8,97.8
80	15.43	15.30	15.53	15.30	15.43	15.30	15.53	15.30	70- 80	262.3	23602	98.9,98.9
90	3.731	3.673	3.537	3.673	3.731	3.673	3.537	3.673	80- 90	91.72	23693	99.3,99.3
100	1.590	1.583	1.464	1.583	1.590	1.583	1.464	1.583	90-100	23.00	23716	99.4,99.4
110	1.463	1.496	1.460	1.496	1.463	1.496	1.460	1.496	100-110	14.78	23731	99.4,99.4
120	2.121	2.227	2.171	2.227	2.121	2.227	2.171	2.227	110-120	17.25	23748	99.5,99.5
130	3.464	3.438	3.444	3.438	3.464	3.438	3.444	3.438	120-130	23.51	23772	99.6,99.6
140	3.366	3.355	3.386	3.355	3.366	3.355	3.386	3.355	130-140	28.24	23800	99.7,99.7
150	4.328	4.324	4.312	4.324	4.328	4.324	4.312	4.324	140-150	23.65	23824	99.8,99.8
160	5.063	5.050	5.046	5.050	5.063	5.050	5.046	5.050	150-160	21.91	23846	99.9,99.9
170	6.614	6.600	6.597	6.600	6.614	6.600	6.597	6.600	160-170	16.08	23862	100,100
180	7.571	7.551	7.547	7.551	7.571	7.551	7.547	7.551	170-180	6.829	23869	100,100
DEG	LUMINOUS INTENSITY:X10cd									UNIT:lm		

Conical surface Flux(90deg): 20523 lm

%lum = 86.0%

%lamp = 86.0%

Conical surface Flux(130deg): 23121 lm

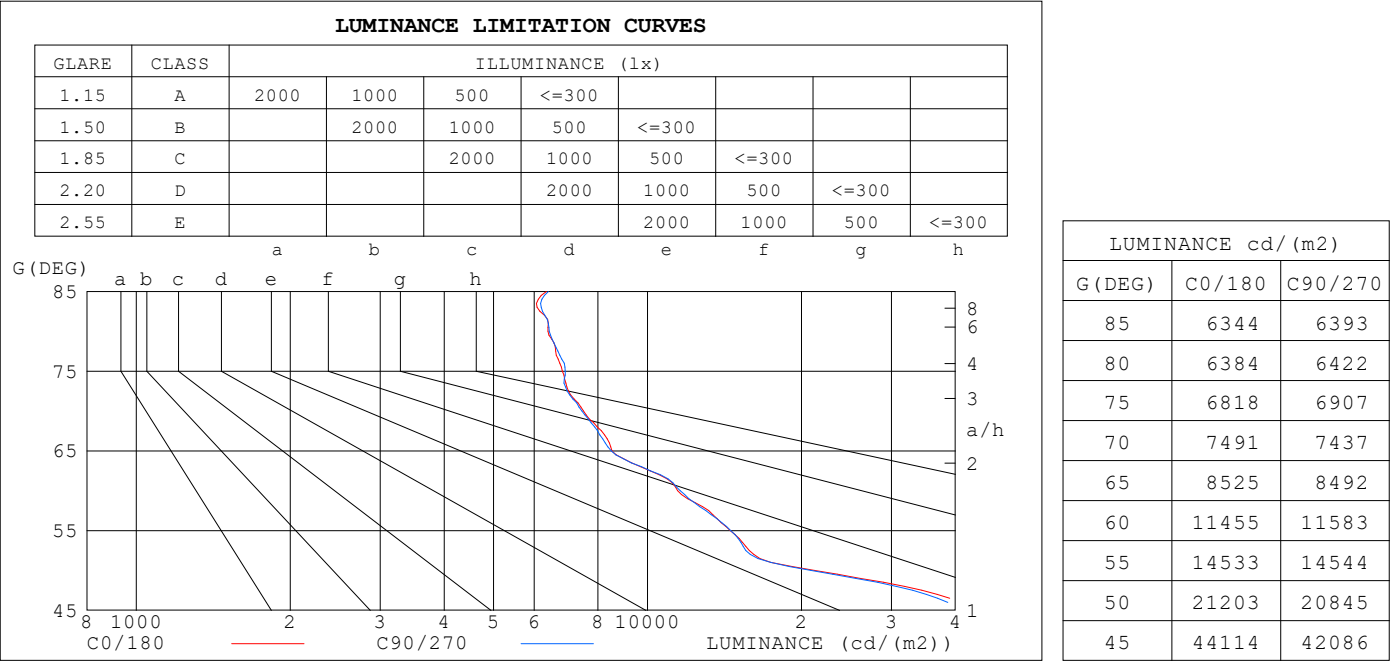
%lum = 96.9%

%lamp = 96.9%

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:ZZX  
Test Date:2023-07-03

$\gamma$  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



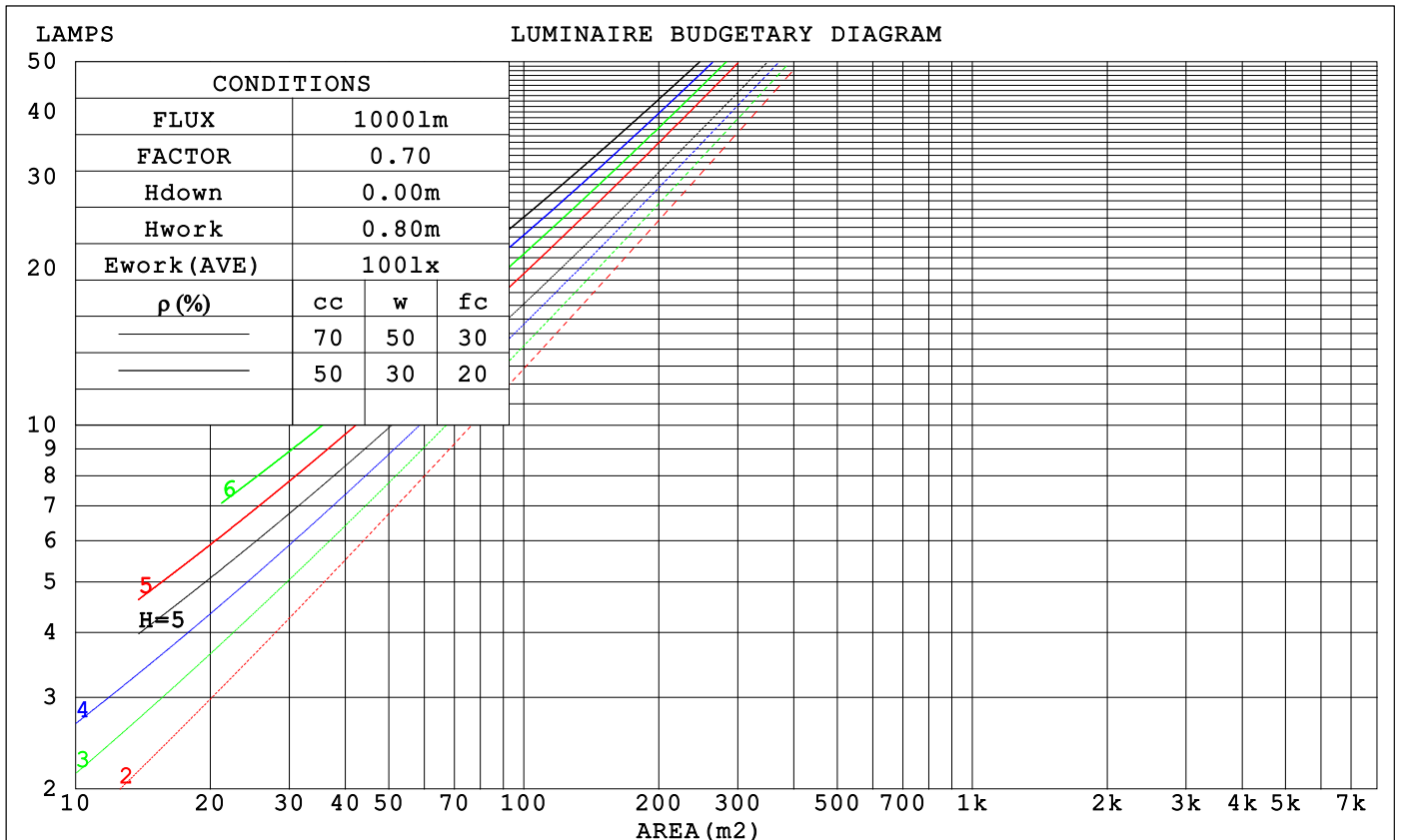
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:ZZX  
Test Date:2023-07-03

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	1.11	1.11	1.11	1.06	1.06	1.06	1.01	1.01	1.01	.99
1.0	1.09	1.06	1.04	1.07	1.04	1.02	1.03	1.00	.99	.99	.97	.95	.95	.94	.93	.91
2.0	.00	.95	.91	.98	.94	.90	.95	.91	.88	.91	.89	.86	.89	.86	.84	.82
3.0	.92	.86	.81	.90	.85	.81	.87	.83	.79	.85	.81	.78	.82	.79	.77	.75
4.0	.85	.78	.73	.83	.77	.73	.81	.76	.72	.79	.74	.71	.77	.73	.70	.68
5.0	.78	.72	.67	.77	.71	.66	.75	.70	.66	.73	.69	.65	.72	.68	.64	.63
6.0	.73	.66	.61	.72	.65	.61	.70	.64	.60	.68	.63	.60	.67	.63	.59	.58
7.0	.68	.61	.56	.67	.60	.56	.65	.60	.55	.64	.59	.55	.63	.58	.55	.53
8.0	.63	.56	.52	.62	.56	.52	.61	.55	.51	.60	.55	.51	.59	.54	.51	.49
9.0	.59	.52	.48	.58	.52	.48	.57	.52	.48	.56	.51	.47	.55	.51	.47	.46
10.0	.55	.49	.45	.55	.49	.45	.54	.48	.44	.53	.48	.44	.52	.48	.44	.43



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:ZZX  
Test Date:2023-07-03

$\gamma$  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	.208	.118	.037	.201	.114	.036	.187	.108	.034	.175	.101	.032	.164	.095	.031	
2.0	.199	.109	.033	.193	.106	.033	.182	.101	.031	.172	.096	.030	.162	.092	.029	
3.0	.189	.101	.030	.184	.099	.030	.174	.094	.029	.165	.091	.028	.157	.087	.027	
4.0	.179	.093	.027	.175	.091	.027	.166	.088	.026	.158	.085	.026	.151	.082	.025	
5.0	.170	.087	.025	.166	.085	.025	.158	.083	.024	.151	.080	.024	.145	.077	.023	
6.0	.161	.081	.023	.158	.080	.023	.151	.077	.023	.145	.075	.022	.139	.073	.022	
7.0	.153	.076	.021	.150	.075	.021	.144	.073	.021	.139	.071	.021	.133	.069	.020	
8.0	.146	.071	.020	.143	.070	.020	.138	.069	.020	.133	.067	.019	.128	.066	.019	
9.0	.139	.067	.019	.136	.066	.019	.132	.065	.018	.127	.064	.018	.123	.062	.018	
10.0	.132	.064	.018	.130	.063	.018	.126	.062	.017	.122	.060	.017	.118	.059	.017	

$\rho_{cc}$	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	.196	.196	.196	.168	.168	.168	.114	.114	.114	.066	.066	.066	.021	.021	.021	
1.0	.179	.163	.148	.153	.140	.127	.105	.096	.088	.060	.056	.051	.019	.018	.017	
2.0	.166	.138	.115	.142	.119	.099	.097	.082	.069	.056	.048	.041	.018	.015	.013	
3.0	.155	.119	.091	.133	.103	.079	.091	.072	.056	.053	.042	.033	.017	.014	.011	
4.0	.145	.105	.074	.125	.091	.065	.086	.063	.046	.050	.037	.027	.016	.012	.009	
5.0	.137	.094	.062	.118	.081	.054	.081	.057	.038	.047	.033	.023	.015	.011	.007	
6.0	.130	.085	.052	.112	.074	.046	.077	.052	.032	.045	.030	.019	.014	.010	.006	
7.0	.124	.078	.045	.107	.067	.039	.074	.047	.028	.043	.028	.017	.014	.009	.005	
8.0	.118	.072	.040	.102	.062	.035	.070	.044	.024	.041	.026	.015	.013	.008	.005	
9.0	.113	.067	.035	.097	.058	.031	.067	.041	.022	.039	.024	.013	.013	.008	.004	
10.0	.108	.062	.032	.093	.054	.028	.065	.038	.020	.038	.022	.012	.012	.007	.004	

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.3℃  
 Operators:ZZX  
 Test Date:2023-07-03

$\gamma$  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	16.8	18.0	17.2	18.3	18.6	16.8	18.0	17.2	18.3	18.7
3H	17.6	18.6	18.0	19.0	19.4	17.6	18.7	18.0	19.0	19.4
4H	17.9	18.9	18.3	19.2	19.6	17.9	18.9	18.4	19.3	19.7
6H	18.2	19.0	18.6	19.4	19.8	18.2	19.1	18.6	19.5	19.9
8H	18.3	19.1	18.7	19.5	19.9	18.3	19.1	18.7	19.5	19.9
12H	18.3	19.1	18.8	19.5	20.0	18.3	19.1	18.8	19.5	20.0
4H 2H	17.0	17.9	17.4	18.3	18.7	17.0	18.0	17.4	18.3	18.7
3H	18.0	18.8	18.4	19.2	19.6	18.0	18.8	18.5	19.2	19.6
4H	18.4	19.1	18.9	19.5	20.0	18.5	19.1	18.9	19.6	20.0
6H	18.8	19.4	19.3	19.8	20.3	18.8	19.4	19.3	19.9	20.4
8H	18.9	19.5	19.4	19.9	20.4	19.0	19.5	19.4	20.0	20.5
12H	19.0	19.5	19.5	20.0	20.5	19.1	19.6	19.6	20.1	20.5
8H 4H	18.5	19.1	19.0	19.5	20.0	18.6	19.1	19.0	19.6	20.1
6H	19.0	19.5	19.5	20.0	20.5	19.0	19.5	19.6	20.0	20.5
8H	19.2	19.6	19.8	20.1	20.7	19.3	19.7	19.8	20.2	20.7
12H	19.4	19.8	19.9	20.3	20.9	19.4	19.8	20.0	20.3	20.9
12H 4H	18.5	19.0	19.0	19.5	20.0	18.5	19.0	19.0	19.5	20.0
6H	19.0	19.4	19.6	19.9	20.5	19.1	19.5	19.6	20.0	20.5
8H	19.3	19.6	19.8	20.1	20.7	19.3	19.7	19.8	20.2	20.8
CIE190: 2010										

CIE190: 2010  
Area: 0.1392 m2

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:ZZX  
Test Date:2023-07-03

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

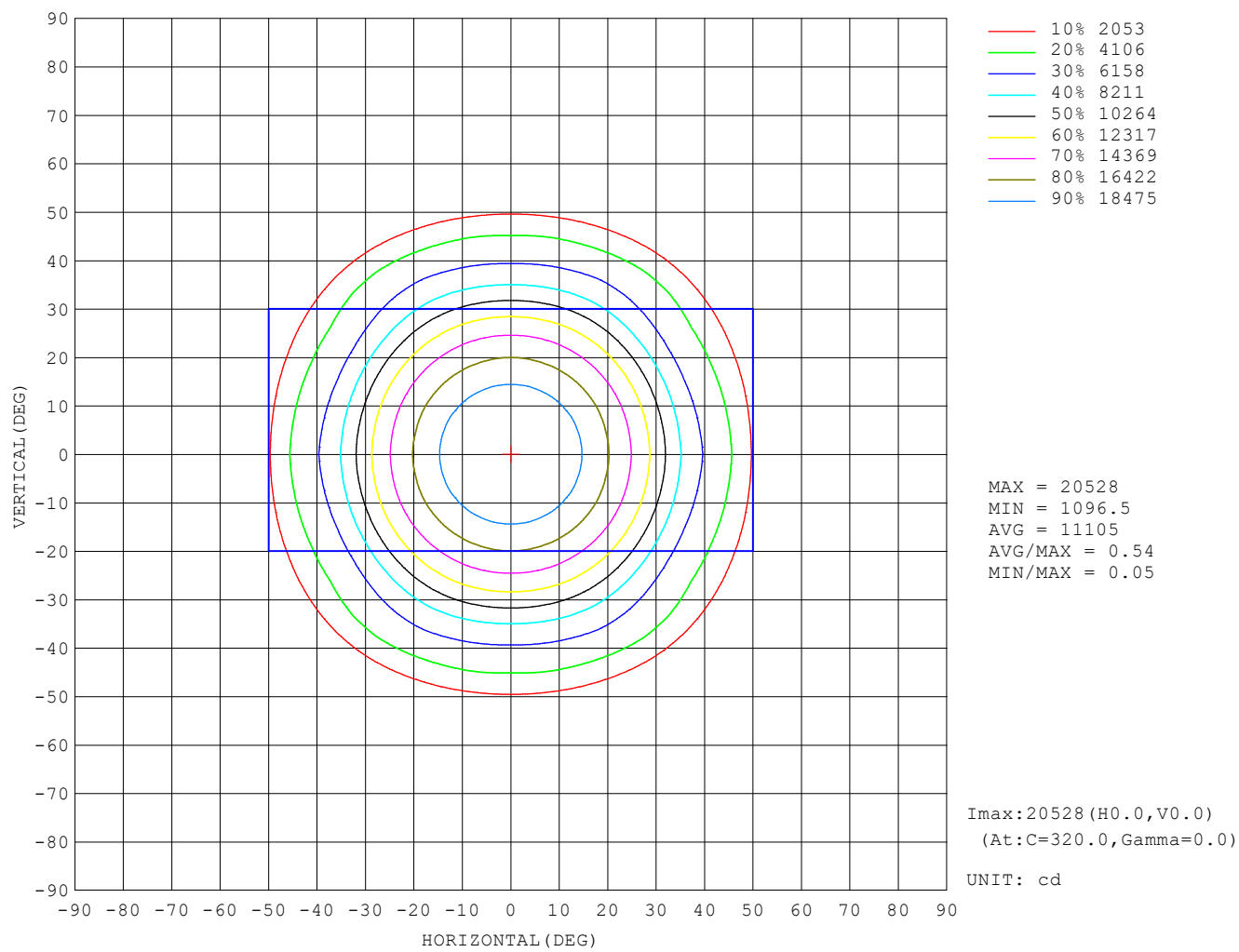
## UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	78	70	65	77	70	65	76	69	65	60
0.80	86	79	74	86	79	74	84	78	74	69
1.00	93	85	81	92	85	81	90	85	80	75
1.25	98	91	87	96	90	86	94	89	85	80
1.50	101	95	91	100	94	90	97	93	89	84
2.00	105	100	96	103	99	95	100	97	93	87
2.50	107	102	99	105	101	98	102	99	96	89
3.00	109	105	102	107	103	100	104	101	98	91
4.00	112	108	105	109	106	104	106	103	101	93
5.00	113	110	108	111	108	106	107	105	103	95
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: ZZX  
 Test Date: 2023-07-03

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:

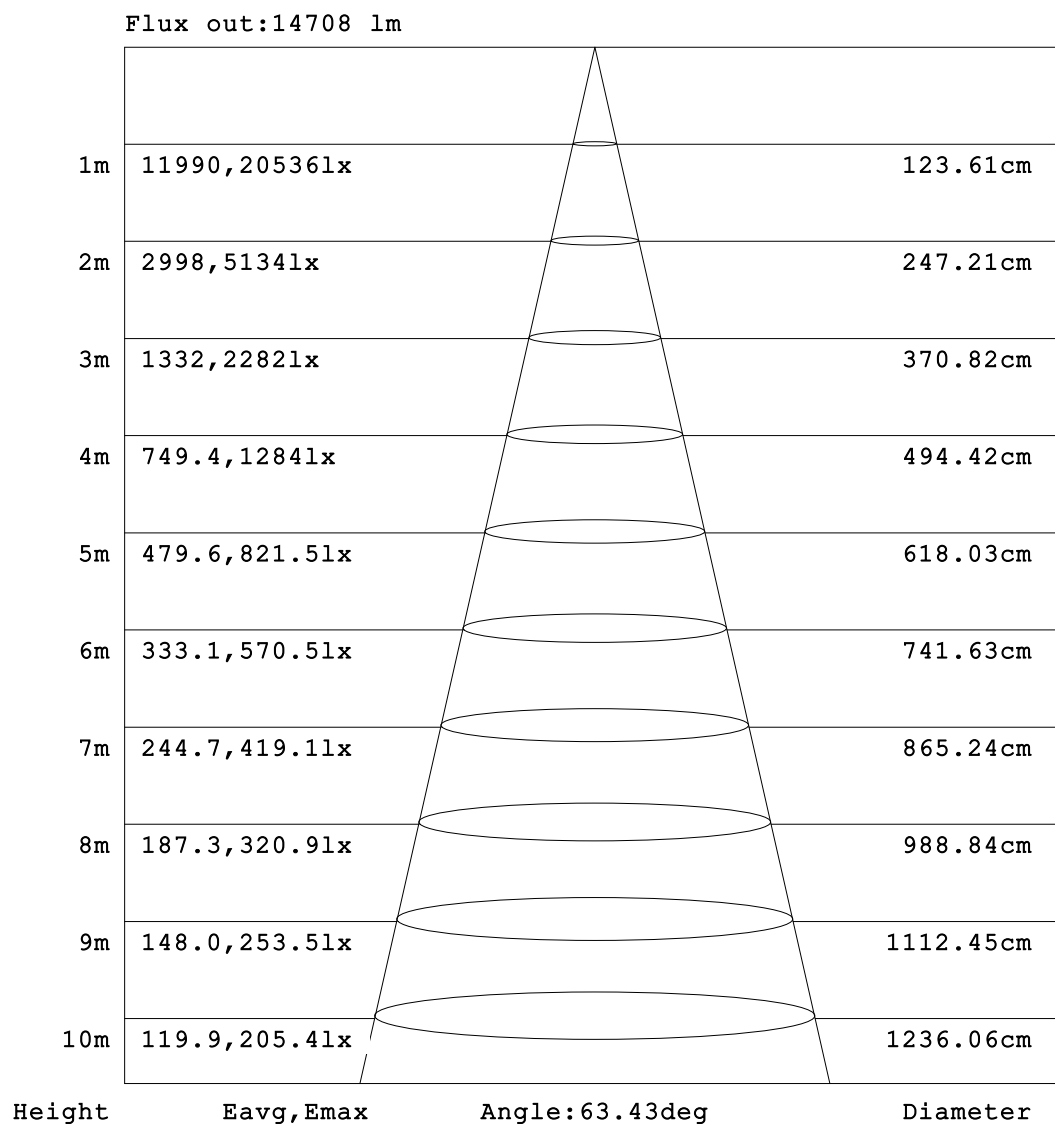
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG	$\gamma$ Range: 0 - 180DEG
C Interval: 10.0DEG	$\gamma$ Interval: 0.5DEG
Test Speed: HIGH	Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Temperature:25.3°C	Humidity:65.0%
Operators:ZZX	Test Distance:26.000m [K=0.4556]
Test Date:2023-07-03	Remarks:



## AAI Figure



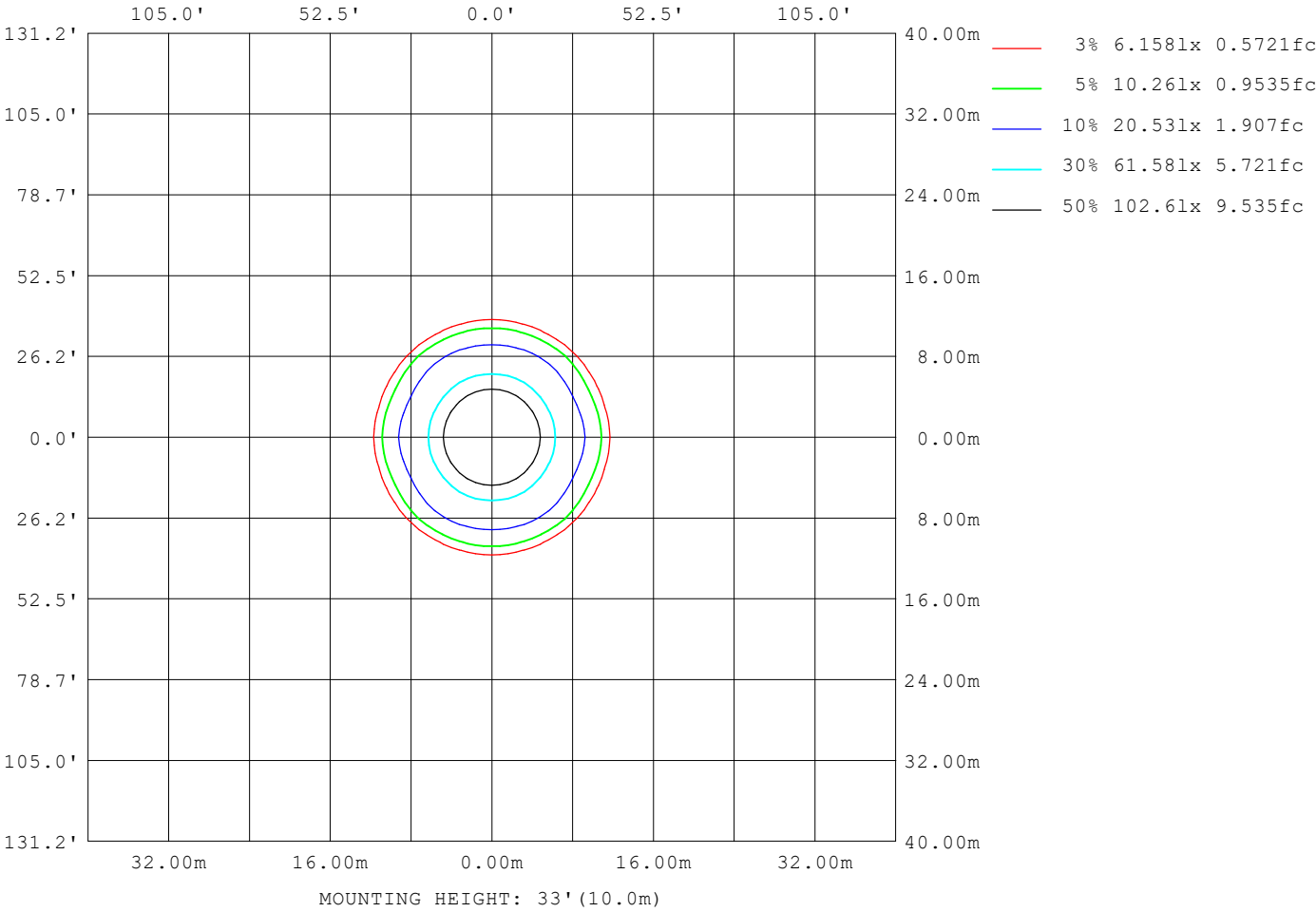
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:ZZX  
Test Date:2023-07-03

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: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: ZZX  
Test Date: 2023-07-03

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:230.0V I:0.541A P:121.4W PF:0.975 Freq:50.01Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:23868.6x1 lm		
NAME: HB68-120H-5070-H00196+H00C01A	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

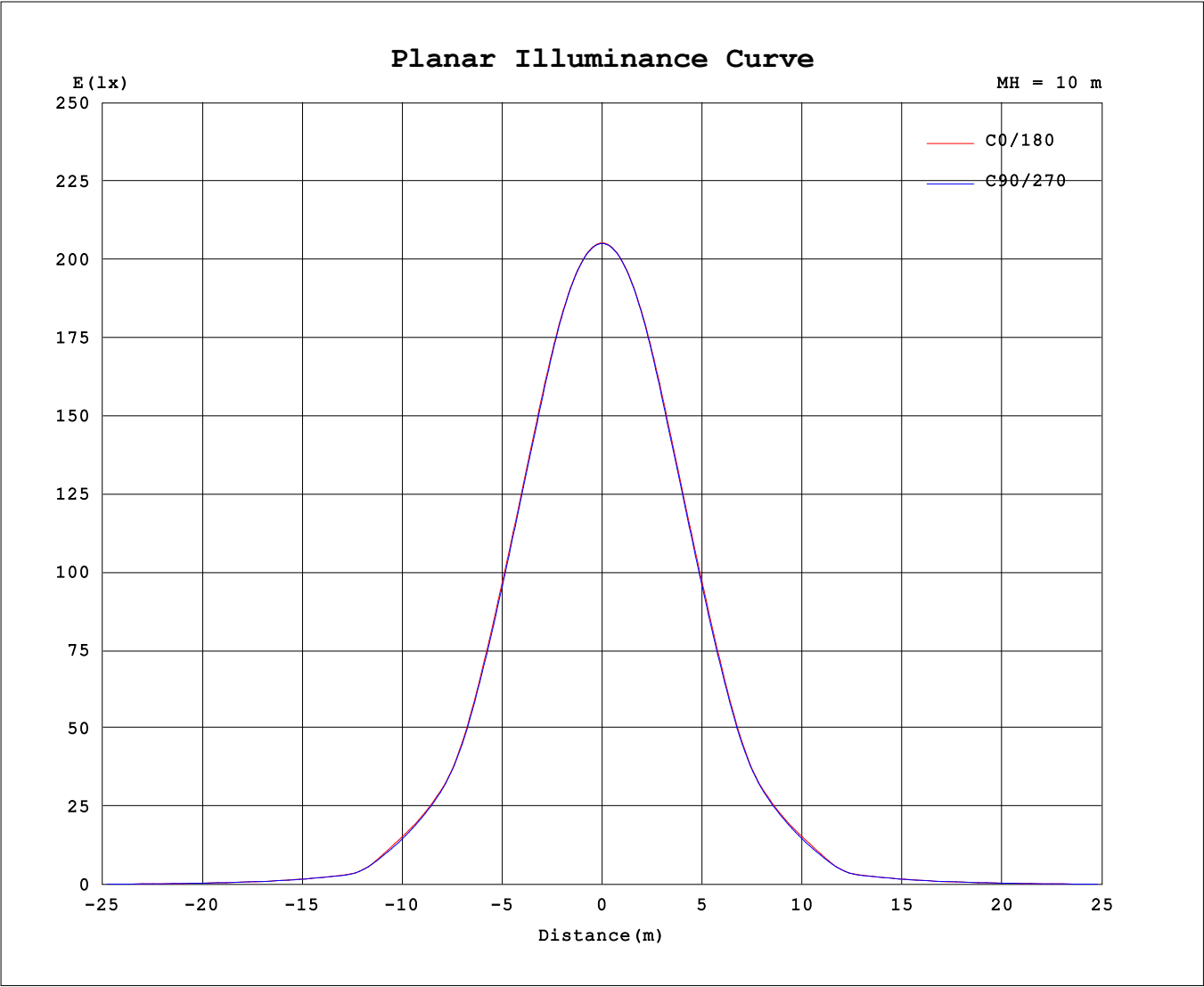
AvgL	cd/m2
L_0~180 (65) av	8523
L_0~180 (75) av	6816
L_0~180 (85) av	6342
L_90~270 (65) av	8497
L_90~270 (75) av	6910
L_90~270 (85) av	6397
L_45 (65) av	8512
L_45 (75) av	6731
L_45 (85) av	6361

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:ZZX  
Test Date:2023-07-03

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	γ Range: 0 - 180DEG
C Interval: 10.0DEG	γ Interval: 0.5DEG
Test Speed: HIGH	Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Temperature:25.3℃	Humidity:65.0%
Operators:ZZX	Test Distance:26.000m [K=0.4556]
Test Date:2023-07-03	Remarks: