

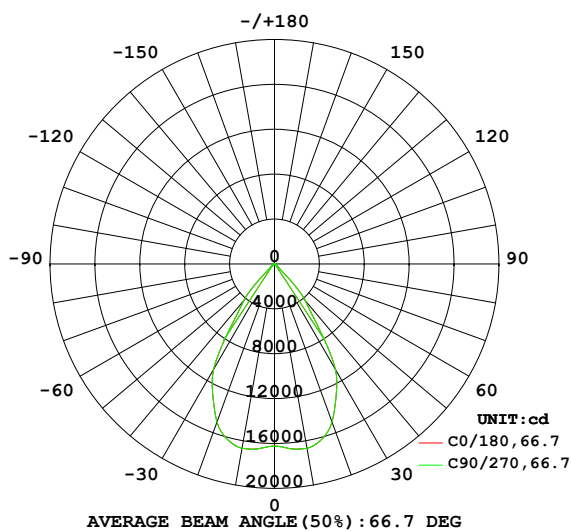
## EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.1V I:0.5449A P:120.83W PF:0.9636 Freq:50.00Hz Lamp Flux:18014.1x1 lm		
NAME: HB01-120-5070-H00C10+H00B20	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

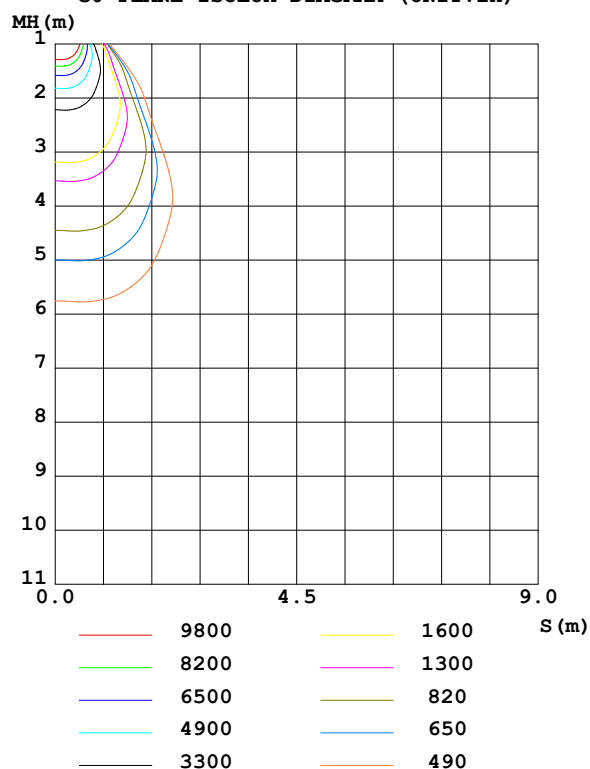
DATA OF LAMP		PHOTOMETRIC DATA				Eff: 149.09 lm/W
MODEL	3030	I <sub>max</sub> (cd)	16673	S/MH (C0/180)	0.97	
NOMINAL POWER (W)	120	LOR (%)	100.0	S/MH (C90/270)	0.97	
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	18014	η UP,DN (C0-180)	0.0,50.0	
NOMINAL FLUX (lm)	18014.1	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,50.0	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.00	
TEST VOLTAGE (V)	230	η down (%)	100.0	CIBSE SHR MAX	1.00	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE (50%) : 66.7 DEG

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 2.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 2019-06-29

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity: 65.0%  
Test Distance: 9.500m [K=1.0000]  
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	1667	1667	1667	1667	1667	1667	1667	1667	0- 10	1582	1582	8.78,8.78
20	1499	1499	1499	1499	1499	1499	1499	1499	10- 20	4533	6116	33.9,33.9
30	1086	1086	1086	1086	1086	1086	1086	1086	20- 30	5958	12073	67,67
40	423.8	423.8	423.8	423.8	423.8	423.8	423.8	423.8	30- 40	4339	16412	91.1,91.1
50	39.79	39.79	39.79	39.79	39.79	39.79	39.79	39.79	40- 50	1406	17818	98.9,98.9
60	5.136	5.136	5.136	5.136	5.136	5.136	5.136	5.136	50- 60	156.4	17975	99.8,99.8
70	1.778	1.778	1.778	1.778	1.778	1.778	1.778	1.778	60- 70	28.74	18003	99.9,99.9
80	0.3289	0.3289	0.3289	0.3289	0.3289	0.3289	0.3289	0.3289	70- 80	9.655	18013	100,100
90	0	0	0	0	0	0	0	0	80- 90	1.046	18014	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:X10cd									UNIT:lm		

Conical surface Flux(90deg): 17527 lm

%lum = 97.3%

%lamp = 97.3%

Conical surface Flux(120deg): 17975 lm

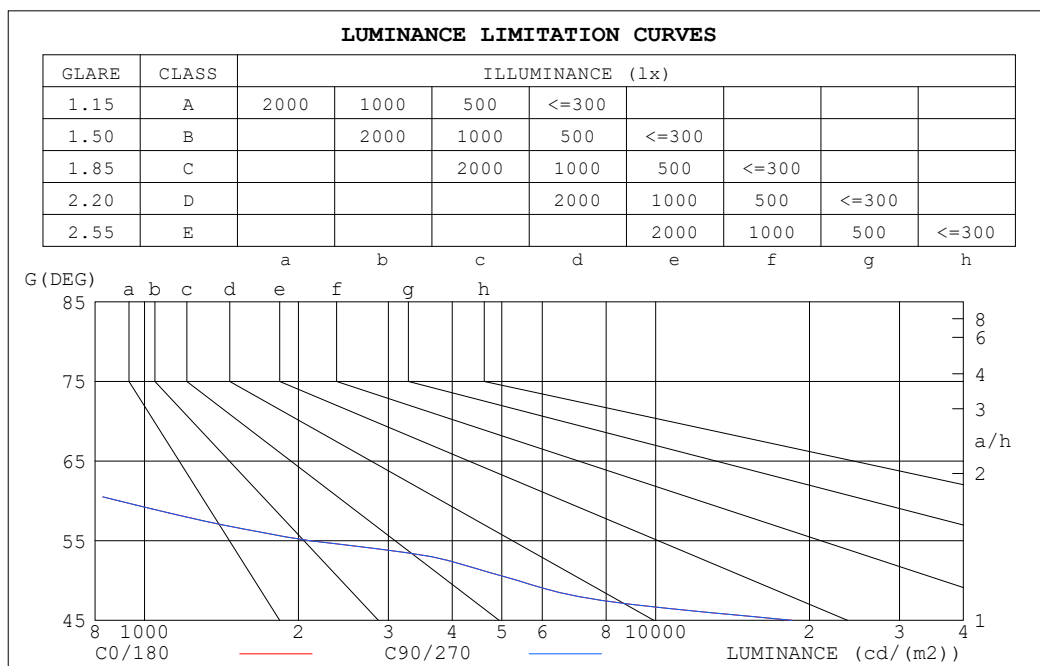
%lum = 99.8%

%lamp = 99.8%

C Range: 0 - 360DEG  
C Interval: 2.5DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:2019-06-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:9.500m [K=1.0000]  
Remarks:

## LUMINANCE LIMITATION CURVES



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	59	59
80	164	164
75	277	277
70	451	451
65	539	539
60	892	892
55	2108	2108
50	5374	5374
45	18504	18504

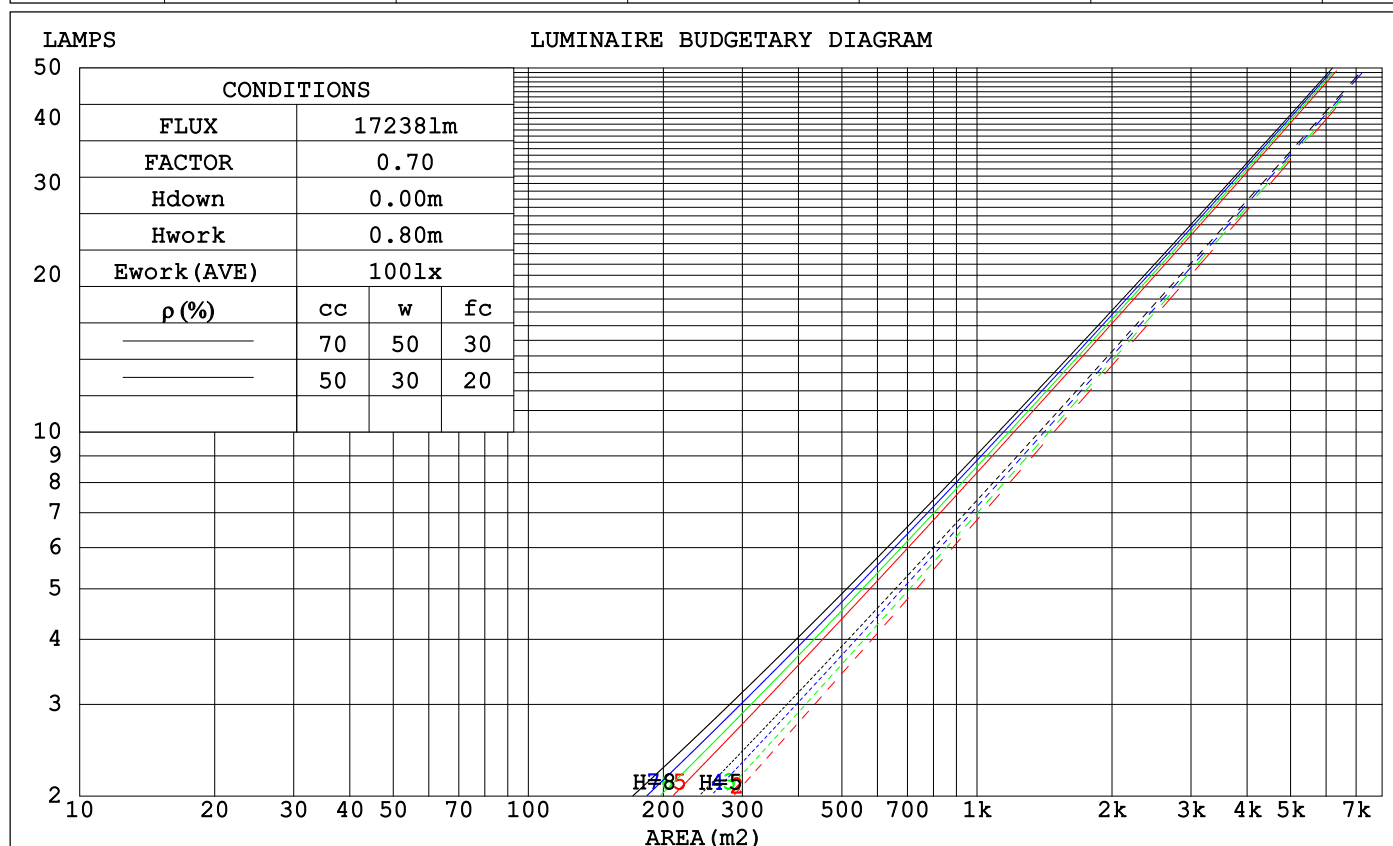
C Range: 0 - 360DEG  
C Interval: 2.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 2019-06-29

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity: 65.0%  
Test Distance: 9.500m [K=1.0000]  
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	1.02	1.02	1.02	1.00
1.0	1.11	1.08	1.06	1.08	1.06	1.04	1.04	1.03	1.01	1.01	.99	.98	.97	.96	.95	.93
2.0	1.03	.98	.95	1.01	.97	.94	.98	.95	.92	.95	.92	.90	.92	.90	.88	.86
3.0	.95	.90	.86	.94	.89	.86	.91	.87	.84	.89	.86	.83	.87	.84	.82	.80
4.0	.89	.83	.79	.88	.82	.78	.85	.81	.77	.83	.80	.76	.82	.78	.76	.74
5.0	.83	.77	.72	.82	.76	.72	.80	.75	.71	.78	.74	.71	.77	.73	.70	.69
6.0	.77	.71	.67	.77	.71	.67	.75	.70	.66	.74	.69	.66	.72	.68	.65	.64
7.0	.73	.66	.62	.72	.66	.62	.71	.65	.61	.69	.65	.61	.68	.64	.61	.59
8.0	.68	.62	.58	.67	.62	.57	.66	.61	.57	.65	.60	.57	.64	.60	.57	.55
9.0	.64	.58	.54	.63	.58	.54	.62	.57	.53	.62	.57	.53	.61	.56	.53	.52
10.0	.60	.54	.50	.60	.54	.50	.59	.54	.50	.58	.53	.50	.57	.53	.50	.48



C Range: 0 - 360DEG  
 C Interval: 2.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:2019-06-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:9.500m [K=1.0000]  
 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	.182	.103	.033	.175	.100	.032	.162	.093	.030	.151	.087	.028	.140	.081	.026			
2.0	.175	.096	.029	.169	.093	.029	.159	.088	.027	.149	.083	.026	.140	.079	.025			
3.0	.167	.089	.027	.163	.087	.026	.153	.083	.025	.145	.079	.024	.137	.076	.023			
4.0	.160	.083	.024	.156	.081	.024	.148	.078	.023	.141	.075	.023	.134	.073	.022			
5.0	.153	.078	.023	.149	.077	.022	.142	.074	.022	.136	.072	.021	.130	.069	.021			
6.0	.146	.073	.021	.143	.072	.021	.137	.070	.020	.131	.068	.020	.126	.066	.020			
7.0	.140	.069	.020	.137	.068	.019	.132	.067	.019	.127	.065	.019	.122	.063	.019			
8.0	.134	.065	.018	.131	.065	.018	.127	.063	.018	.122	.062	.018	.118	.060	.018			
9.0	.128	.062	.017	.126	.062	.017	.122	.060	.017	.118	.059	.017	.114	.058	.017			
10.0	.123	.059	.016	.121	.059	.016	.117	.057	.016	.114	.056	.016	.110	.055	.016			

$\rho_{cc}$	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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.171	.157	.145	.147	.135	.124	.100	.093	.086	.058	.054	.050	.018	.017	.016	
2.0	.157	.132	.112	.134	.114	.097	.092	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.145	.114	.089	.124	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010	
4.0	.135	.099	.072	.116	.086	.062	.080	.060	.044	.046	.035	.026	.015	.011	.009	
5.0	.127	.088	.059	.109	.076	.051	.075	.053	.036	.043	.031	.021	.014	.010	.007	
6.0	.119	.078	.049	.103	.068	.043	.071	.047	.030	.041	.028	.018	.013	.009	.006	
7.0	.113	.071	.041	.097	.061	.036	.067	.043	.025	.039	.025	.015	.013	.008	.005	
8.0	.108	.065	.035	.093	.056	.031	.064	.039	.022	.037	.023	.013	.012	.008	.004	
9.0	.103	.060	.031	.088	.052	.027	.061	.036	.019	.036	.021	.011	.012	.007	.004	
10.0	.098	.055	.027	.085	.048	.023	.059	.034	.017	.034	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 2.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:2019-06-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:9.500m [K=1.0000]  
 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	2H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	3H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	4H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	6H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	8H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	12H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
4H	2H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	3H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	4H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	6H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	8H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	12H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
8H	4H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	6H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	8H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	12H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
12H	4H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	6H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	8H	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
CIE190: 2010											

CIE190: 2010  
Area: 0.1152 m2

C Range: 0 - 360DEG  
C Interval: 2.5DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:2019-06-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:9.500m [K=1.0000]  
Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

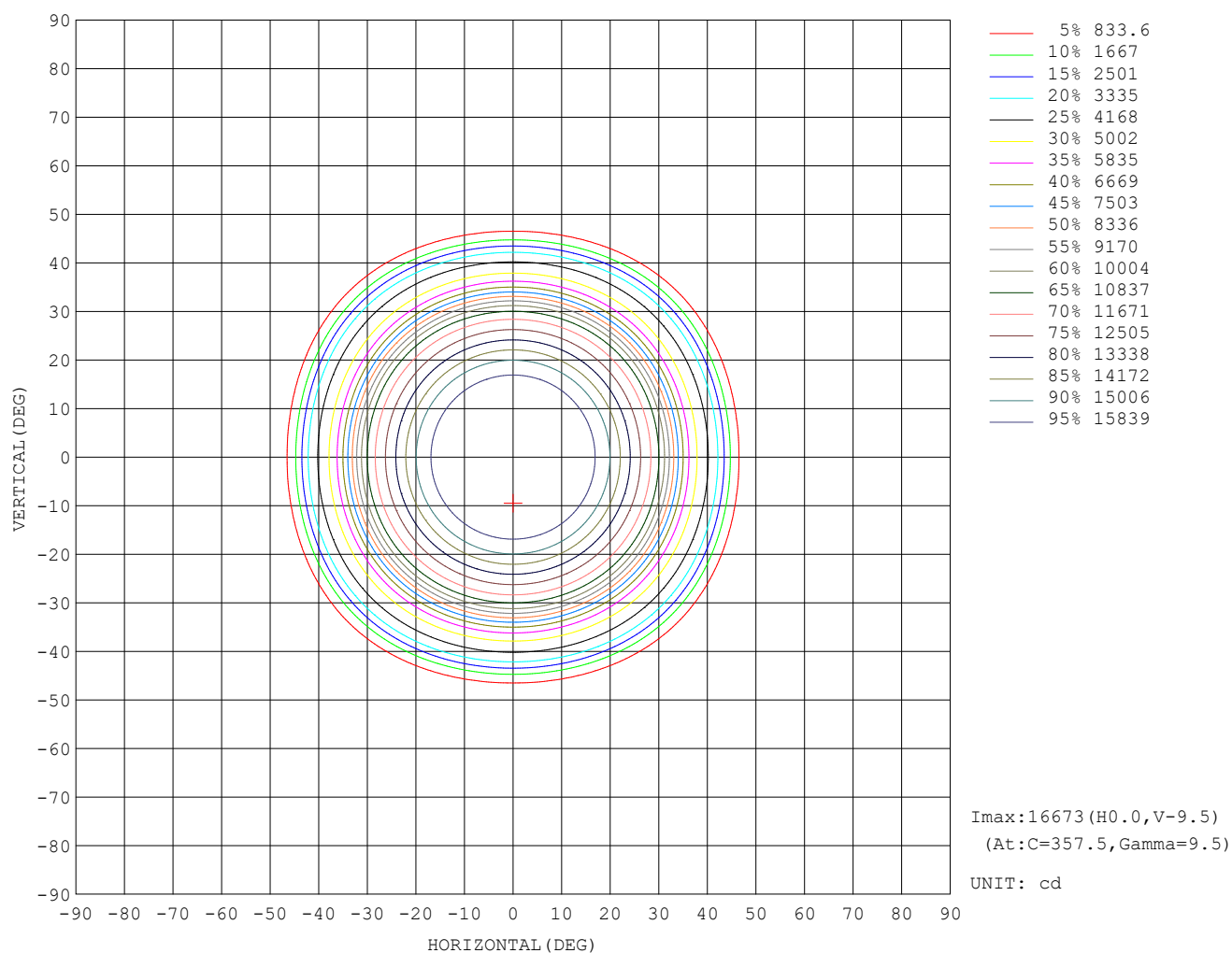
## UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	86	79	75	85	79	75	85	79	75	71
0.80	94	88	84	93	87	84	92	87	83	79
1.00	99	93	89	98	92	89	96	92	88	84
1.25	103	97	94	102	97	94	100	96	93	89
1.50	106	101	97	104	100	97	102	99	96	91
2.00	108	104	101	107	103	100	104	101	99	93
2.50	110	106	103	108	105	102	105	103	100	94
3.00	112	108	105	110	107	104	106	104	102	96
4.00	114	111	109	112	109	107	108	106	105	97
5.00	115	113	111	113	111	109	109	107	106	98
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004						Suspended			SHRNOM = 1.25	

C Range: 0 - 360DEG  
 C Interval: 2.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 2019-06-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity: 65.0%  
 Test Distance: 9.500m [K=1.0000]  
 Remarks:

## ISOCANDELA DIAGRAM

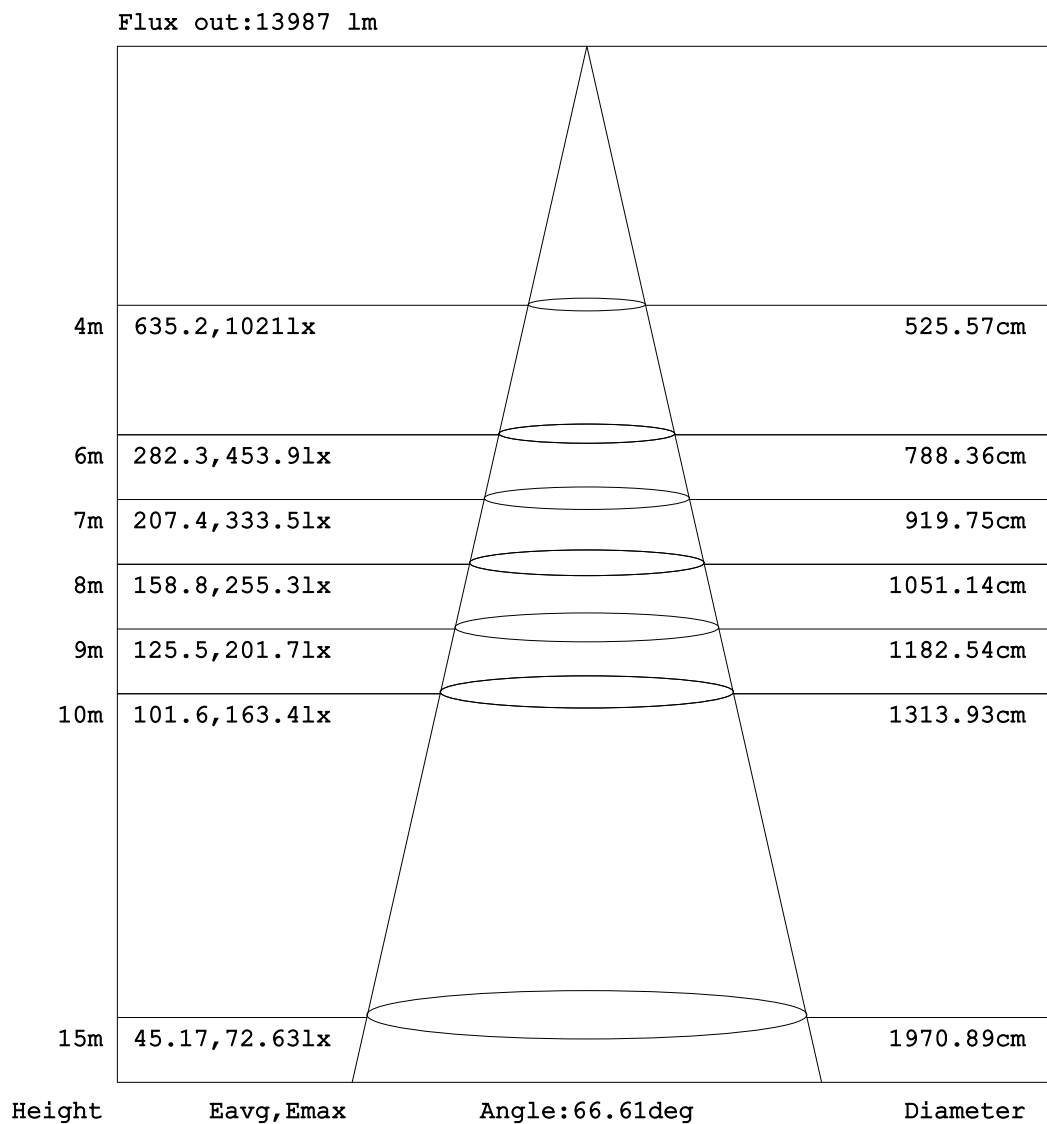


C Range: 0 - 360DEG  
C Interval: 2.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 2019-06-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity: 65.0%  
Test Distance: 9.500m [K=1.0000]  
Remarks:



## AAI Figure



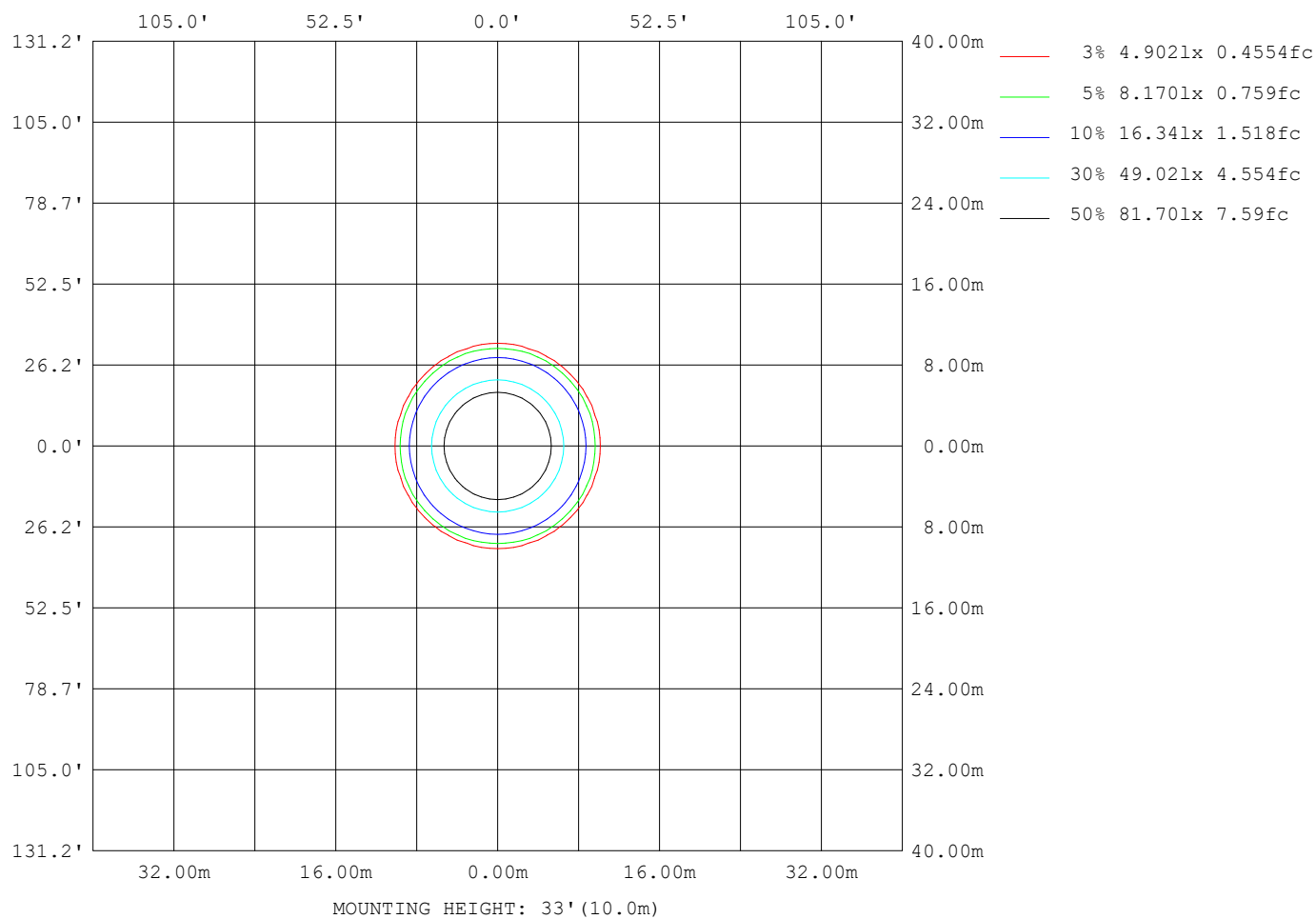
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 2.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 2019-06-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity: 65.0%  
Test Distance: 9.500m [K=1.0000]  
Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

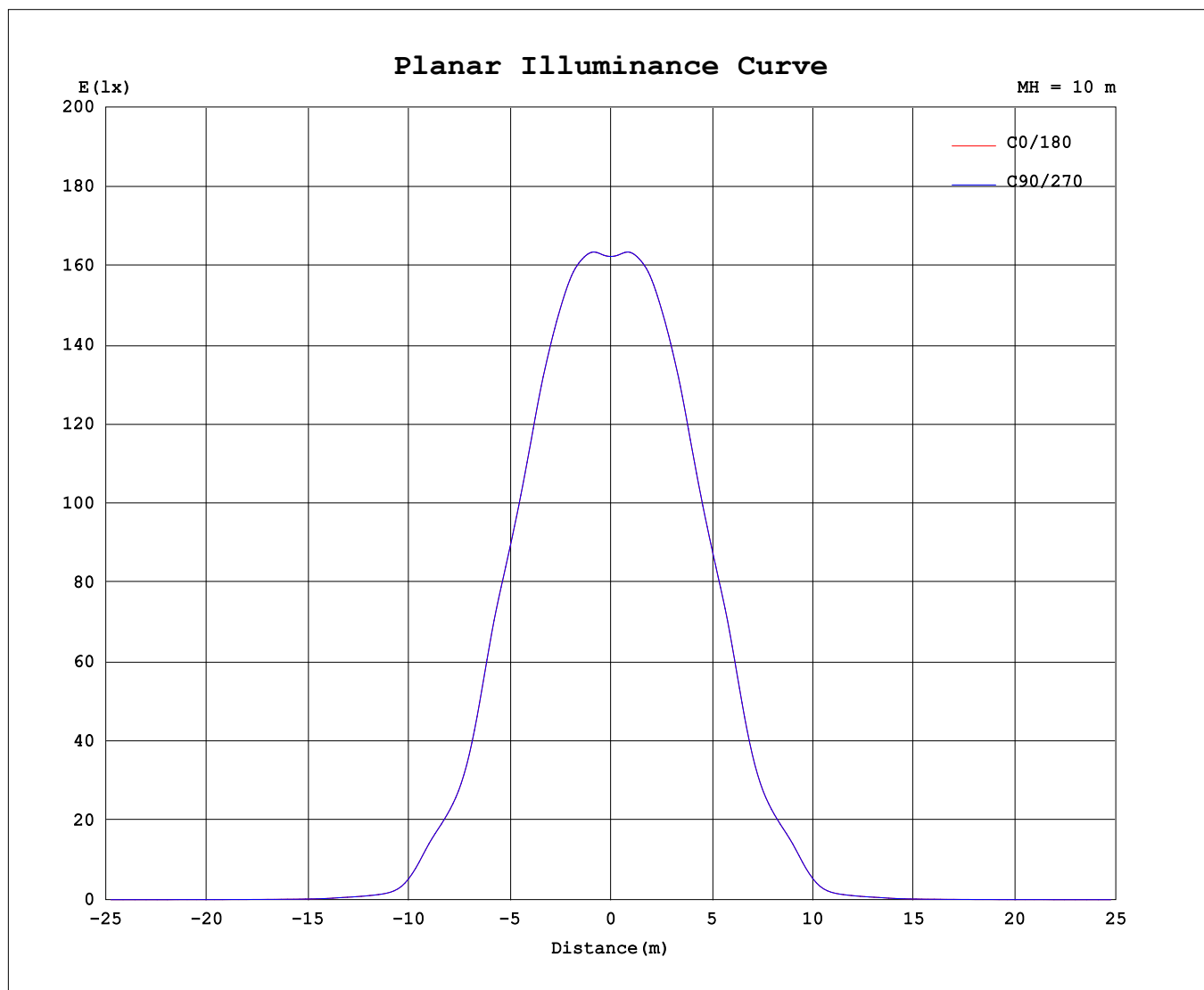
## ISOLUX DIAGRAM



C Range: 0 - 360DEG  
C Interval: 2.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 2019-06-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity: 65.0%  
Test Distance: 9.500m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 2.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 2019-06-29

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity: 65.0%  
Test Distance: 9.500m [K=1.0000]  
Remarks: