

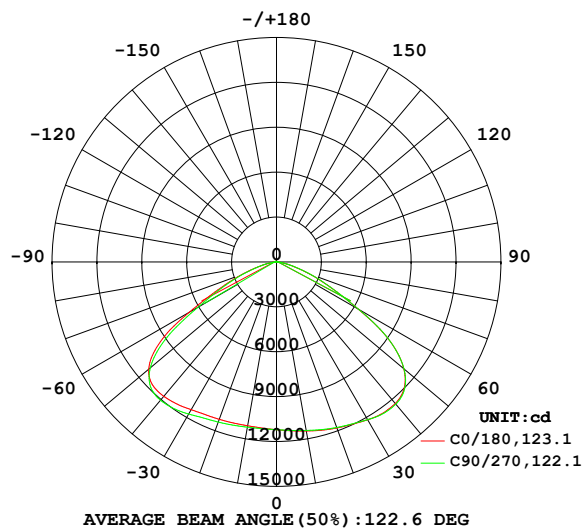
## EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## LUMINAIRE PHOTOMETRIC TEST REPORT

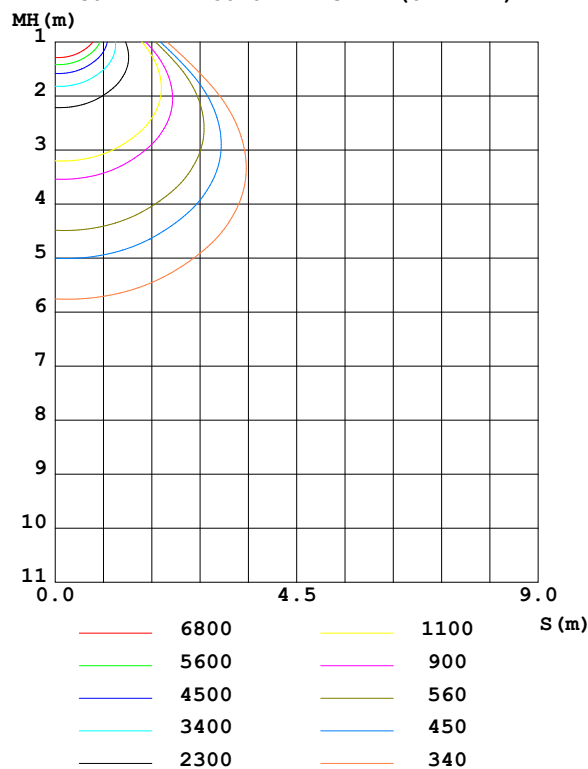
Test:U:219.6V I:0.920A P:198.4W PF:0.982 Freq:50.01Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:40103.4x1 lm		
NAME: HB68-200H-5070-H00191	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 202.12 lm/W			
MODEL	/	I <sub>max</sub> (cd)	12498	S/MH (C0/180)	1.59
NOMINAL POWER (W)	/	LOR (%)	100.0	S/MH (C90/270)	1.64
RATED VOLTAGE (V)	/	TOTAL FLUX (lm)	40103	η UP, DN (C0-180)	0.0, 50.4
NOMINAL FLUX (lm)	40103.4	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 49.6
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.75
TEST VOLTAGE (V)	/	η down (%)	100.0	CIBSE SHR MAX	1.75

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: ZZX  
Test Date: 2023-06-20

γ Range: 0 - 90DEG  
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	1147	1149	1143	1128	1112	1108	1121	1139	0- 10	1075	1075	2.68,2.68
20	1181	1182	1177	1153	1119	1111	1139	1172	10- 20	3242	4317	10.8,10.8
30	1218	1213	1217	1194	1140	1129	1174	1220	20- 30	5417	9734	24.3,24.3
40	1235	1227	1240	1223	1172	1161	1206	1240	30- 40	7578	17313	43.2,43.2
50	1111	1104	1112	1104	1115	1108	1101	1081	40- 50	9126	26439	65.9,65.9
60	632.7	616.5	634.3	640.1	676.0	644.5	607.8	582.9	50- 60	8091	34530	86.1,86.1
70	234.2	232.2	238.4	246.9	248.5	240.9	236.0	230.8	60- 70	3991	38521	96.1,96.1
80	53.95	55.99	55.88	59.63	58.09	56.79	55.89	55.37	70- 80	1360	39881	99.4,99.4
90	0.4966	0.5382	0.6023	0.6192	0.6144	0.5671	0.4907	0.4735	80- 90	222.6	40103	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): 21777 lm

%lum = 54.3%

%lamp = 54.3%

Conical surface Flux(120deg): 34530 lm

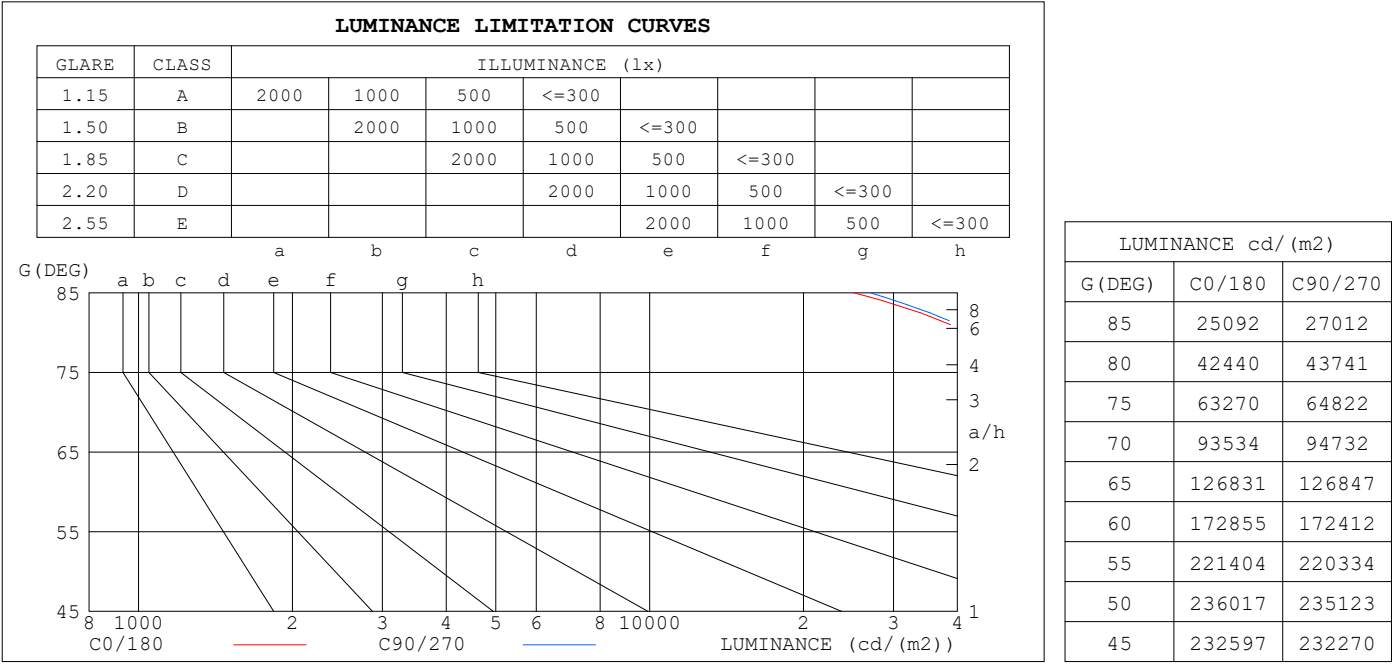
%lum = 86.1%

%lamp = 86.1%

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:ZZX  
Test Date:2023-06-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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



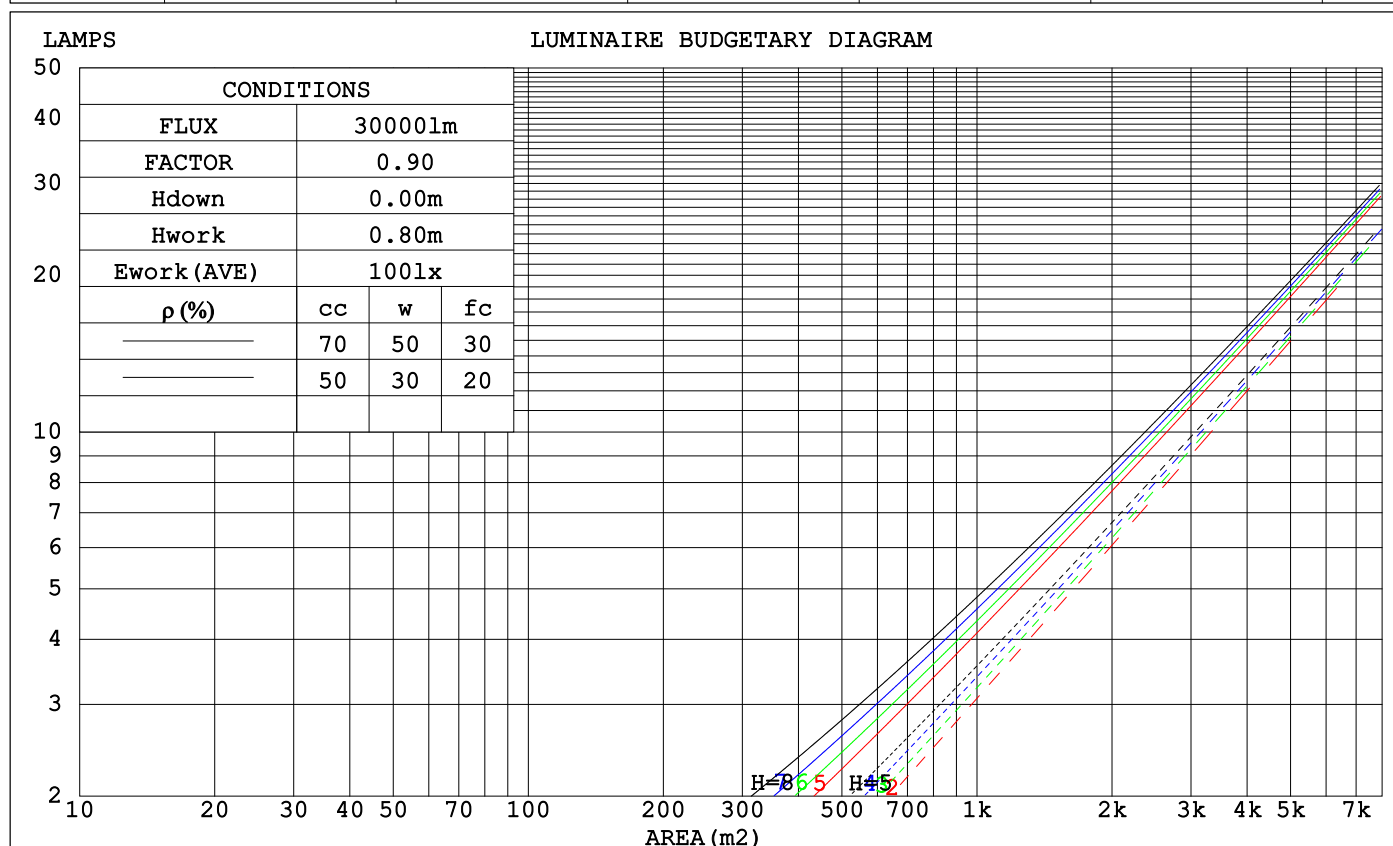
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:ZZX  
Test Date:2023-06-20

γ Range: 0 - 90DEG  
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	1.02	1.02	1.02	1.00
1.0	1.05	1.01	.98	1.03	.90	.96	.99	.96	.93	.95	.93	.91	.91	.90	.88	.86
2.0	.92	.86	.80	.90	.85	.80	.87	.82	.78	.84	.80	.76	.81	.77	.74	.72
3.0	.81	.73	.67	.79	.72	.66	.77	.70	.65	.74	.68	.64	.71	.67	.63	.61
4.0	.72	.63	.56	.70	.62	.56	.68	.61	.55	.65	.59	.54	.63	.58	.54	.52
5.0	.64	.55	.48	.62	.54	.48	.60	.53	.47	.58	.52	.47	.57	.51	.46	.44
6.0	.57	.48	.42	.56	.47	.41	.54	.47	.41	.52	.46	.41	.51	.45	.40	.38
7.0	.51	.42	.36	.50	.42	.36	.49	.41	.36	.47	.41	.36	.46	.40	.35	.33
8.0	.46	.38	.32	.46	.38	.32	.44	.37	.32	.43	.36	.31	.42	.36	.31	.29
9.0	.42	.34	.28	.42	.34	.28	.41	.33	.28	.39	.33	.28	.38	.32	.28	.26
10.0	.39	.31	.25	.38	.31	.25	.37	.30	.25	.36	.30	.25	.35	.29	.25	.23



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: ZZK  
 Test Date: 2023-06-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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	.281	.160	.051	.274	.156	.050	.261	.149	.048	.248	.143	.046	.237	.138	.044	
2.0	.274	.150	.046	.268	.147	.045	.256	.142	.044	.245	.138	.043	.236	.133	.042	
3.0	.259	.138	.041	.254	.136	.041	.243	.132	.040	.234	.128	.039	.225	.125	.039	
4.0	.243	.126	.037	.238	.125	.037	.229	.121	.036	.221	.118	.036	.213	.116	.035	
5.0	.227	.116	.034	.223	.114	.033	.215	.112	.033	.207	.109	.033	.200	.107	.032	
6.0	.212	.106	.030	.208	.105	.030	.201	.103	.030	.194	.101	.030	.188	.099	.029	
7.0	.199	.098	.028	.195	.097	.028	.189	.095	.027	.183	.094	.027	.177	.092	.027	
8.0	.186	.091	.026	.183	.090	.026	.177	.089	.025	.172	.087	.025	.167	.086	.025	
9.0	.175	.085	.024	.172	.084	.024	.167	.083	.023	.162	.081	.023	.158	.080	.023	
10.0	.165	.079	.022	.163	.079	.022	.158	.077	.022	.153	.076	.022	.149	.075	.022	

$\rho_{cc}$	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	.178	.156	.137	.153	.134	.118	.104	.092	.081	.060	.053	.047	.019	.017	.015	
2.0	.170	.132	.100	.145	.114	.087	.100	.079	.060	.057	.046	.035	.018	.015	.012	
3.0	.162	.114	.076	.139	.099	.066	.096	.068	.046	.055	.040	.027	.018	.013	.009	
4.0	.155	.101	.059	.133	.087	.051	.092	.061	.036	.053	.036	.021	.017	.012	.007	
5.0	.148	.090	.048	.127	.078	.041	.088	.055	.029	.051	.032	.017	.016	.010	.006	
6.0	.142	.082	.039	.122	.071	.034	.084	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.135	.075	.033	.116	.065	.029	.080	.046	.021	.047	.027	.012	.015	.009	.004	
8.0	.129	.070	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.003	
9.0	.123	.065	.025	.106	.056	.022	.074	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.118	.060	.022	.102	.052	.019	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:ZZX  
 Test Date:2023-06-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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	31.3	32.9	31.7	33.2	33.6	30.9	32.6	31.3	32.9	33.2
3H	31.9	33.3	32.3	33.7	34.0	31.6	33.0	31.9	33.4	33.7
4H	32.0	33.4	32.4	33.7	34.1	31.7	33.1	32.1	33.4	33.8
6H	32.0	33.3	32.4	33.7	34.1	31.8	33.0	32.2	33.4	33.8
8H	32.0	33.2	32.5	33.6	34.0	31.8	33.0	32.2	33.3	33.7
12H	32.0	33.2	32.4	33.5	34.0	31.7	32.9	32.2	33.3	33.7
4H 2H	31.5	32.9	31.9	33.2	33.6	31.2	32.6	31.6	33.0	33.3
3H	32.2	33.3	32.6	33.7	34.1	32.0	33.1	32.4	33.5	33.9
4H	32.4	33.4	32.8	33.8	34.2	32.2	33.2	32.6	33.6	34.1
6H	32.5	33.3	32.9	33.8	34.2	32.3	33.2	32.8	33.6	34.1
8H	32.5	33.3	32.9	33.7	34.2	32.3	33.1	32.8	33.6	34.0
12H	32.5	33.2	32.9	33.7	34.1	32.3	33.0	32.8	33.5	34.0
8H 4H	32.4	33.2	32.9	33.7	34.1	32.3	33.1	32.7	33.5	34.0
6H	32.5	33.2	33.0	33.7	34.2	32.4	33.1	32.9	33.5	34.0
8H	32.5	33.1	33.0	33.6	34.1	32.4	33.0	32.9	33.5	34.0
12H	32.5	33.1	33.0	33.6	34.1	32.4	32.9	32.9	33.4	34.0
12H 4H	32.4	33.1	32.9	33.6	34.1	32.2	33.0	32.7	33.4	33.9
6H	32.5	33.1	33.0	33.6	34.1	32.4	33.0	32.9	33.4	34.0
8H	32.5	33.1	33.0	33.5	34.1	32.4	32.9	32.9	33.4	34.0
CIE190: 2010										

CIE190: 2010  
Area: 0.07354 m2

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:ZZX  
Test Date:2023-06-20

γ Range: 0 - 90DEG  
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

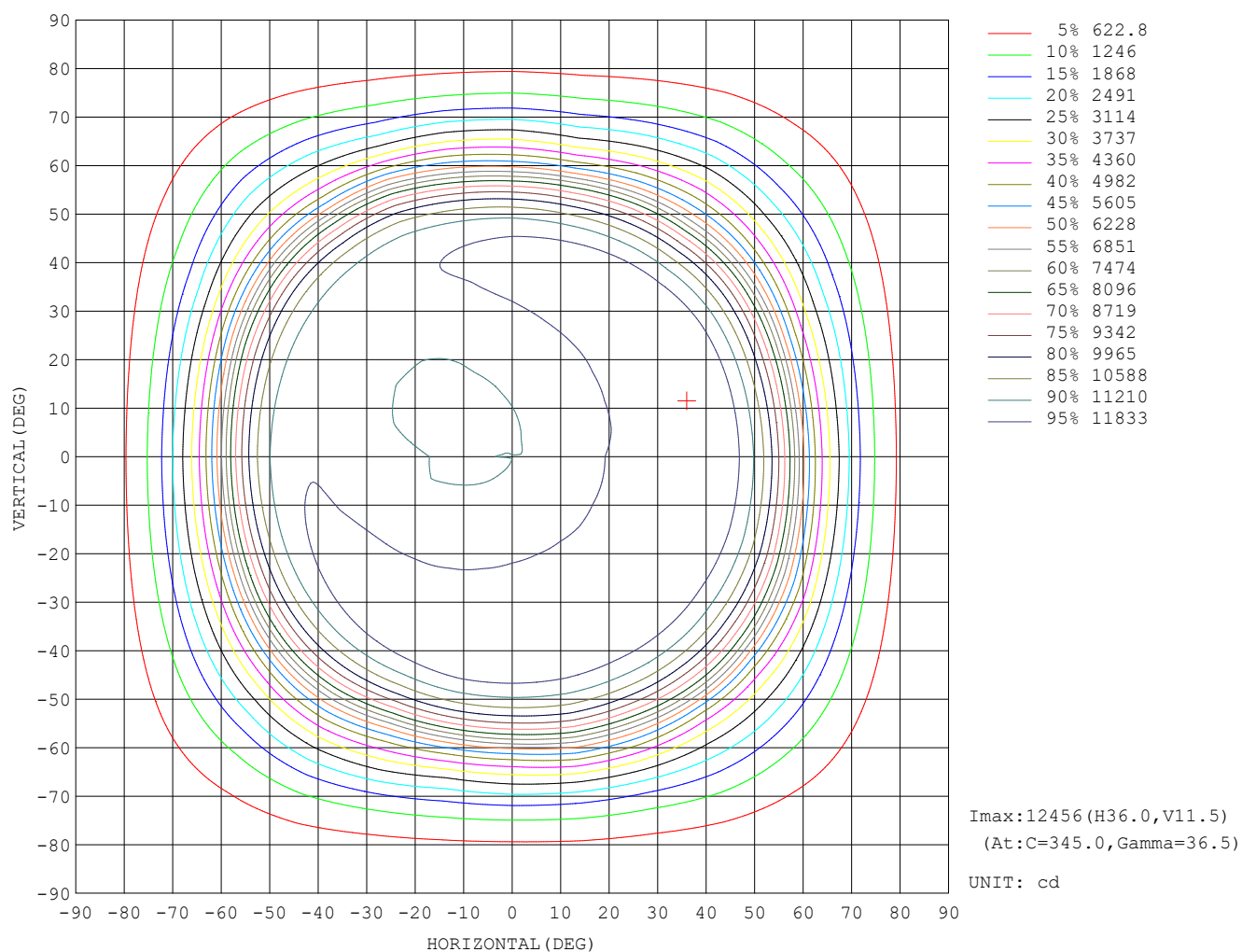
## UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	55	43	36	55	43	36	53	43	36	29
0.80	67	55	47	66	54	47	64	54	47	40
1.00	76	65	58	75	65	58	73	66	57	50
1.25	84	74	67	83	73	67	80	72	66	59
1.50	89	80	73	88	79	73	85	77	72	64
2.00	97	89	82	95	87	82	91	85	80	73
2.50	100	93	87	98	92	86	94	89	84	76
3.00	104	97	92	101	96	91	97	93	89	81
4.00	107	102	98	105	100	96	101	97	93	85
5.00	109	105	101	107	103	99	102	99	96	87
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: 25.3°C  
 Operators: ZZX  
 Test Date: 2023-06-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 26.000m [K=0.4556]  
 Remarks:

## ISOCANDELA DIAGRAM

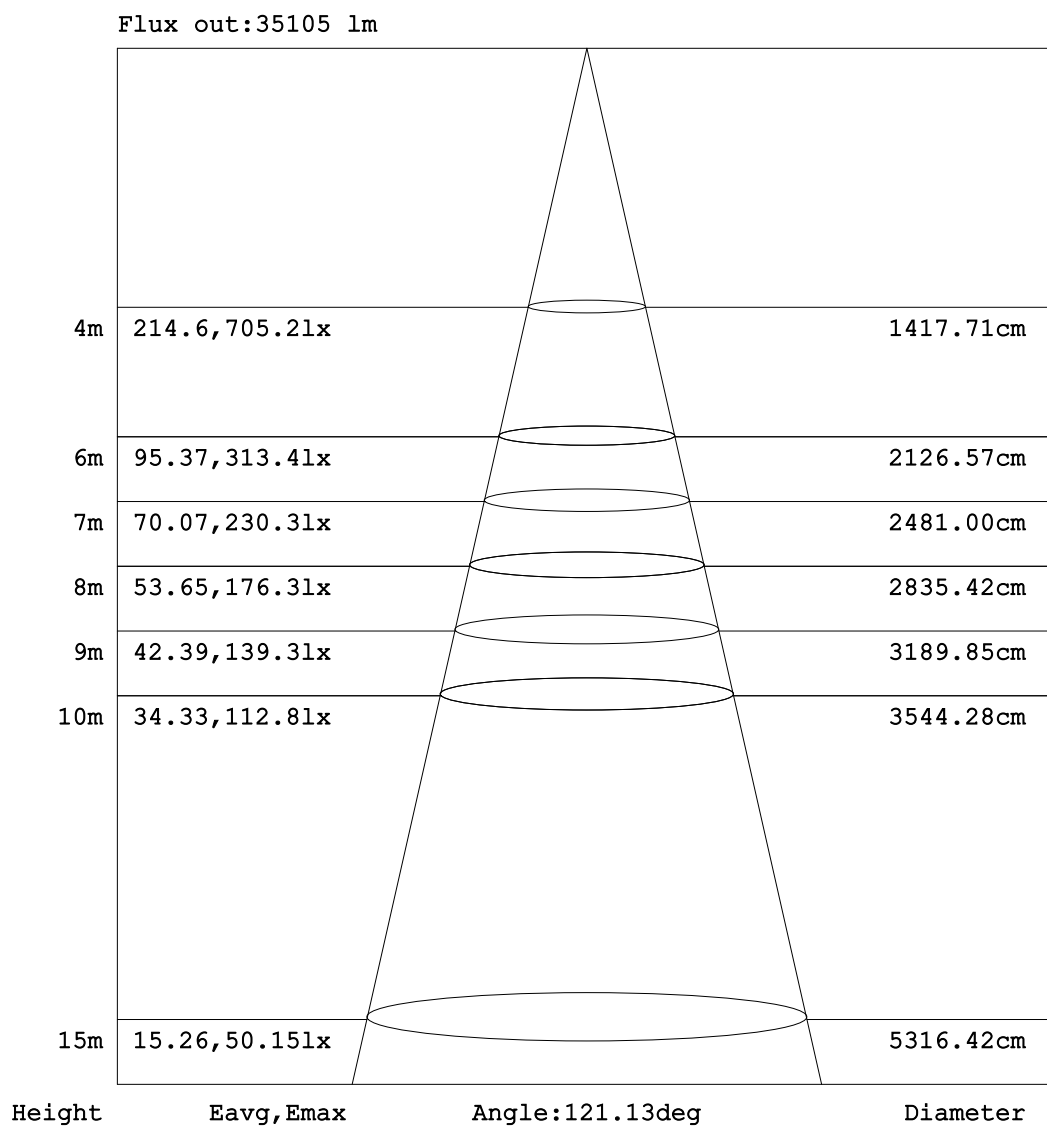


C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:ZZX  
Test Date:2023-06-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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

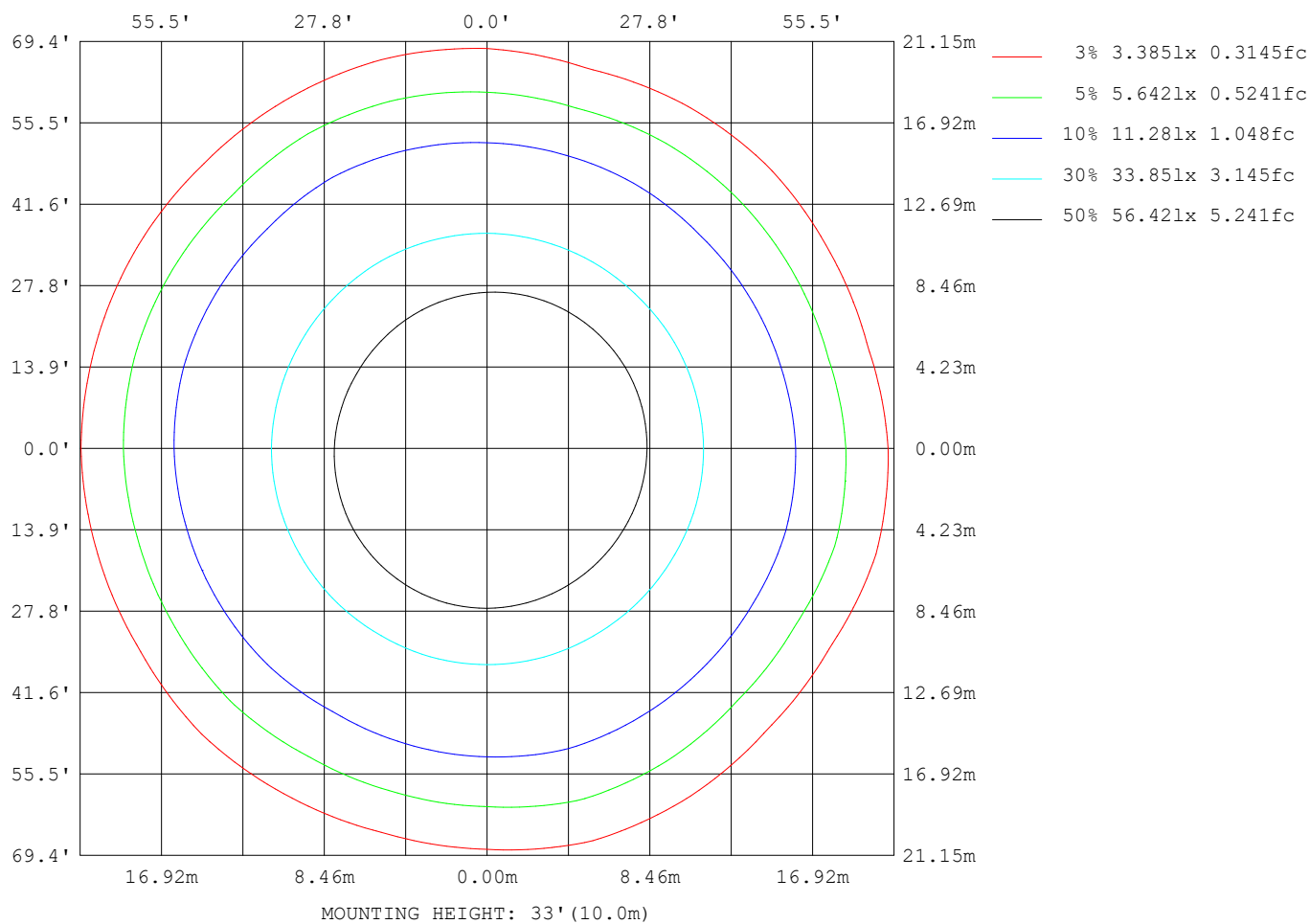


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:ZZX  
Test Date:2023-06-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity:65.0%  
Test Distance:26.000m [K=0.4556]  
Remarks:

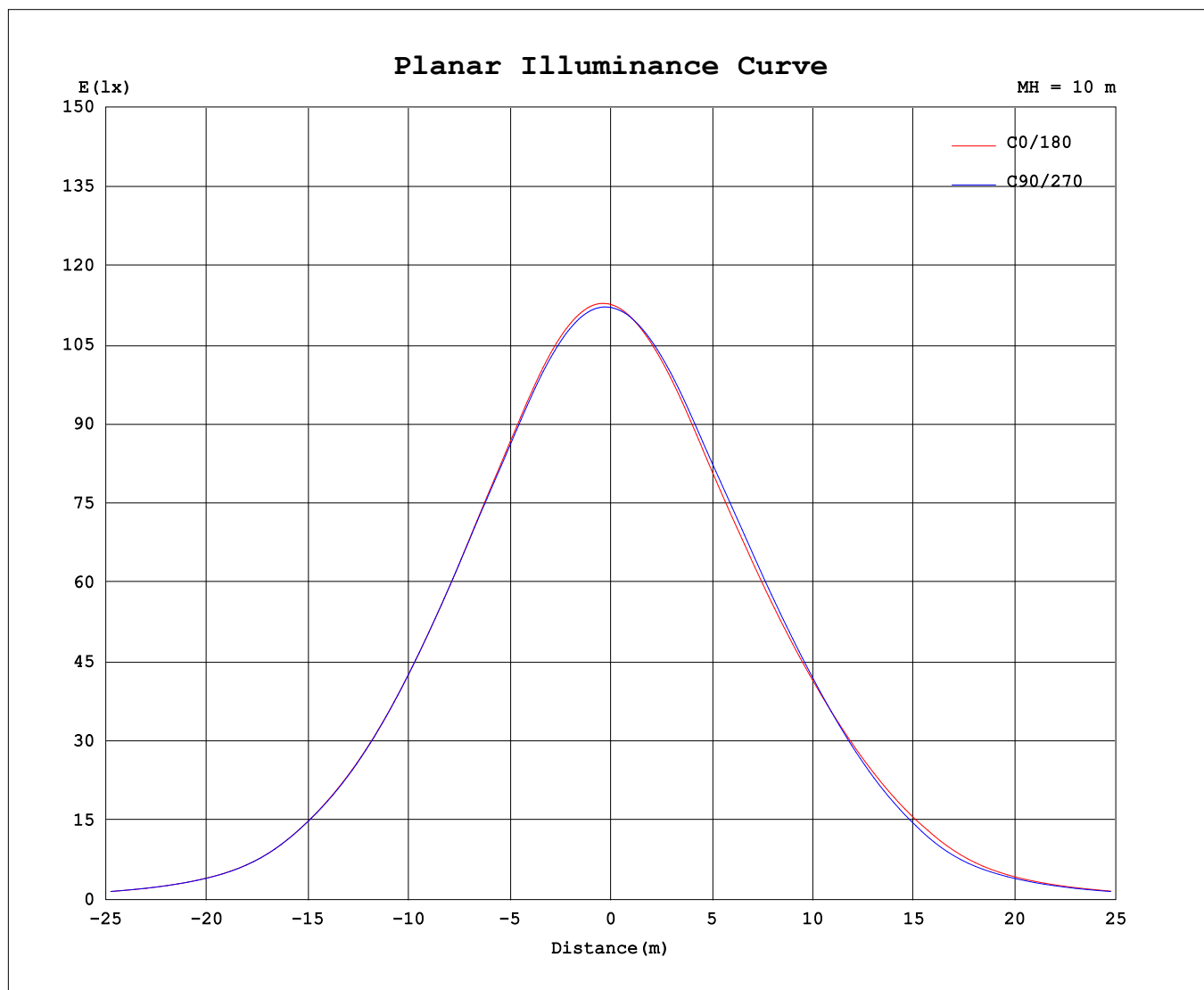
## ISOLUX DIAGRAM



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: ZZX  
Test Date: 2023-06-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 26.000m [K=0.4556]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: ZZX  
Test Date: 2023-06-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 26.000m [K=0.4556]  
Remarks: