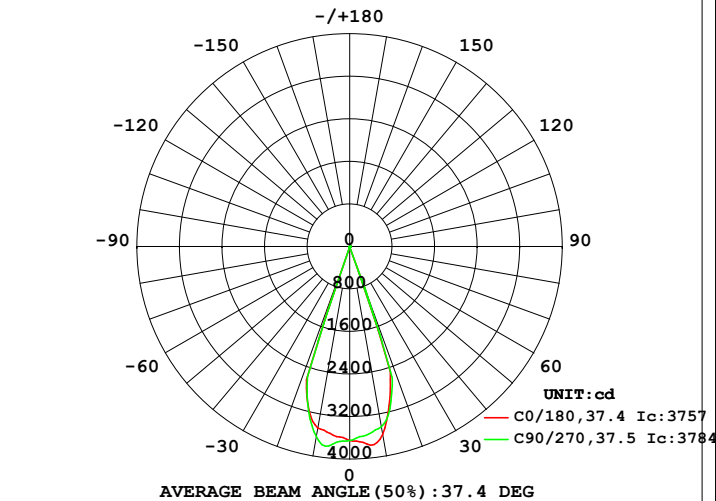


## LUMINAIRE PHOTOMETRIC TEST REPORT

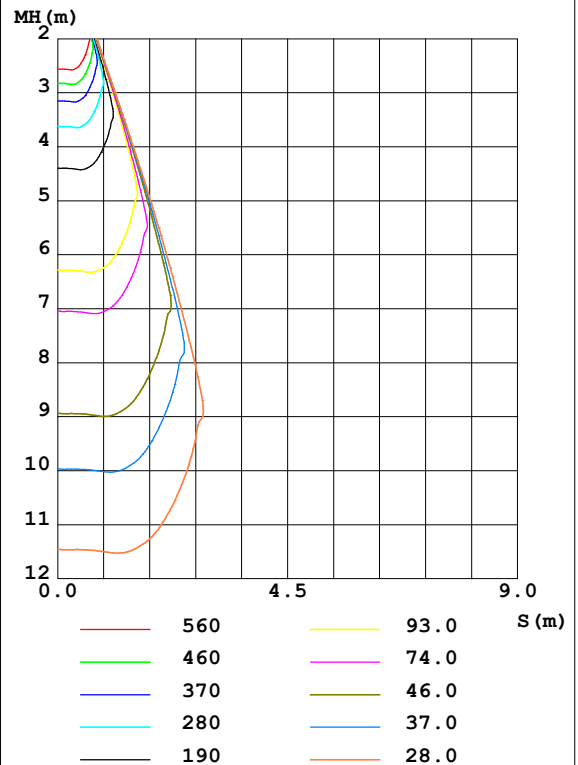
Test:U:224.8V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1111.91x1 lm					
NAME: ALT85F-28G30-Z2-Max			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:70		Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 40.29 lm/W
MODEL	3000K CRI90	I <sub>max</sub> (cd)	3817	S/MH(C0/180)	0.49	
NOMINAL POWER(W)	28	LOR(%)	100.0	S/MH(C90/270)	0.49	
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	1111.9	η UP,DN(C0-180)	0.0,48.8	
NOMINAL FLUX(lm)	1111.91	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,51.2	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE(V)	225.1	η down(%)	100.0	CIBSE SHR MAX	1.00	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:ZR  
 Test Date:2021-05-20

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity:65.0%  
 Test Distance:8.402m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	3587	3540	3445	3388	3467	3589	3631	3655	0- 10	345.4	345.4	31.1, 31.1
20	837.3	865.2	880.1	6.506	17.31	17.15	16.79	16.80	10- 20	734.2	1080	97.1, 97.1
30	1.097	1.365	1.533	1.187	16.52	16.49	16.47	16.43	20- 30	9.602	1089	98, 98
40	0.4297	0.5370	0.5654	0.4605	16.14	16.16	16.20	16.25	30- 40	5.489	1095	98.4, 98.4
50	0.4530	0.4913	0.5242	0.4595	9.619	9.560	9.596	9.686	40- 50	5.152	1100	98.9, 98.9
60	0.7170	0.7361	0.7228	0.7402	6.993	6.963	6.991	7.048	50- 60	3.839	1104	99.3, 99.3
70	1.141	1.142	1.150	1.148	4.612	4.602	4.607	4.637	60- 70	3.300	1107	99.6, 99.6
80	1.312	1.342	1.351	1.358	3.230	3.224	3.235	3.247	70- 80	2.732	1110	99.8, 99.8
90	1.383	1.368	1.362	1.375	2.357	2.368	2.365	2.370	80- 90	2.259	1112	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:cd									UNIT:lm		

Conical surface Flux(90deg): 1097.4 lm

%lum = 98.7%

%lamp = 98.7%

Conical surface Flux(120deg): 1103.6 lm

%lum = 99.3%

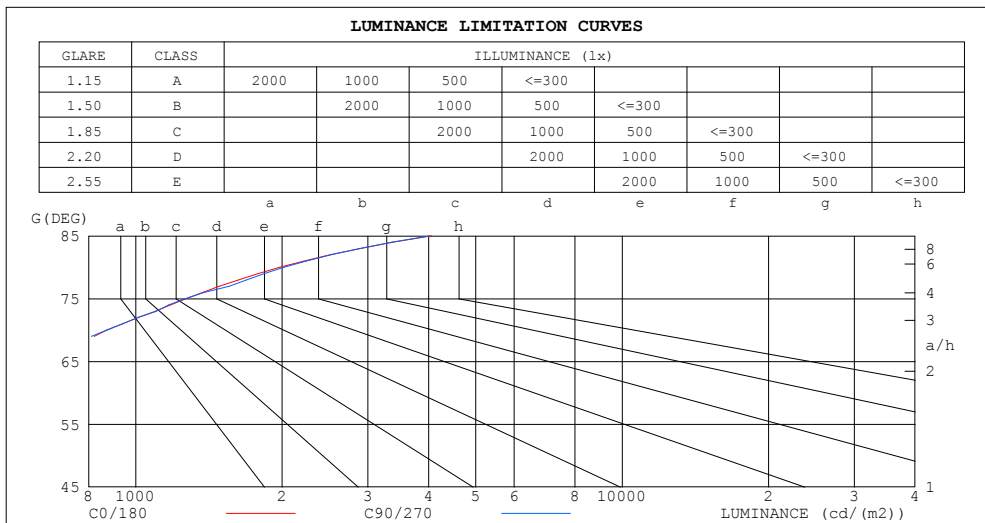
%lamp = 99.3%

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:ZR  
 Test Date:2021-05-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity:65.0%  
 Test Distance:8.402m [K=1.0000]  
 Remarks:

## LUMINANCE LIMITATION CURVES

Test:U:224.8V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1111.91x1 lm		
NAME: ALT85F-28G30-Z2-Max	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:70	Shielding Angle:



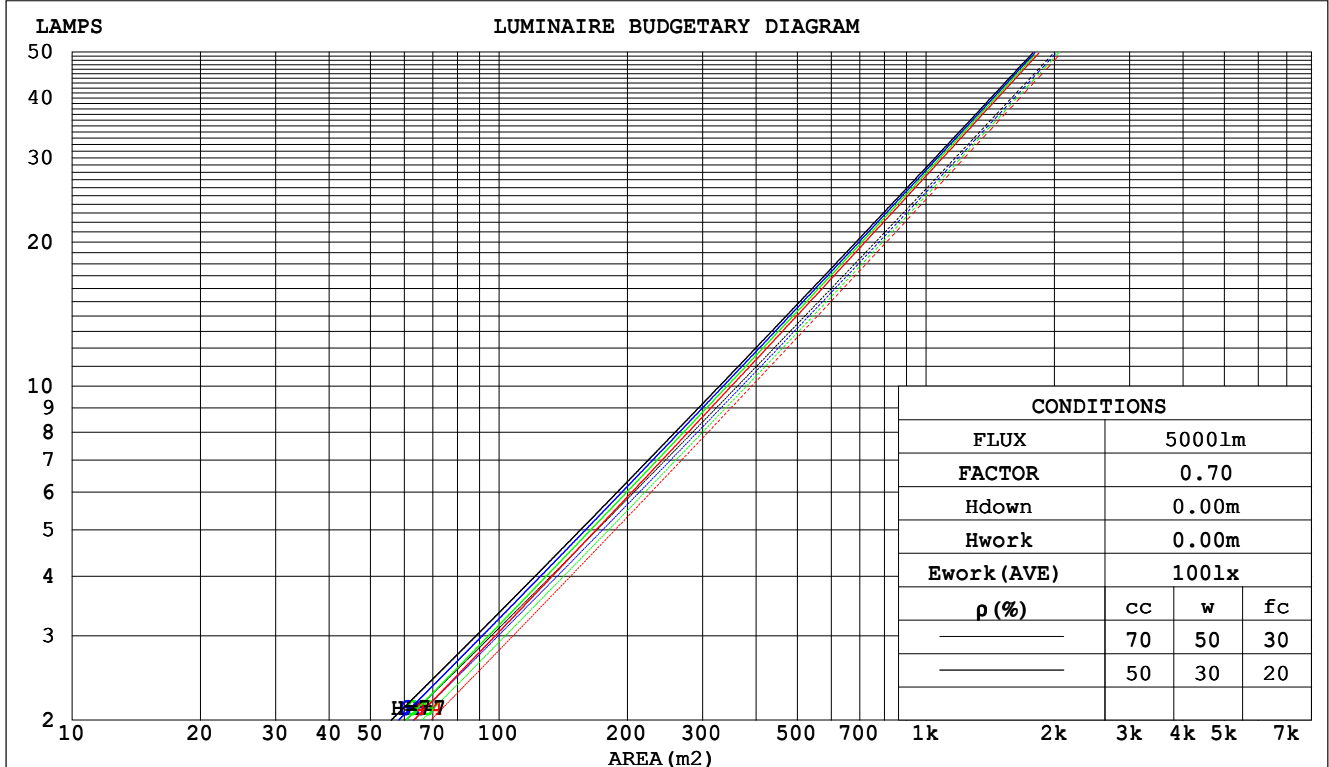
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-05-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:224.8V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1111.91x1 lm		
NAME: ALT85F-28G30-Z2-Max	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:70	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	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	1.13	1.11	1.09	1.11	1.09	1.08	1.07	1.06	1.04	1.03	1.02	1.01	.00	.99	.98	.97
2.0	1.08	1.05	1.03	1.06	1.04	1.02	1.03	1.01	.99	1.00	.99	.97	.98	.96	.95	.94
3.0	1.04	1.00	.98	1.02	.99	.97	1.00	.97	.95	.98	.96	.94	.96	.94	.92	.91
4.0	1.00	.96	.93	.99	.96	.93	.97	.94	.92	.95	.93	.91	.94	.92	.90	.89
5.0	.97	.93	.90	.96	.92	.90	.94	.91	.89	.93	.90	.88	.91	.89	.87	.86
6.0	.94	.90	.87	.93	.89	.87	.92	.89	.86	.91	.88	.86	.89	.87	.85	.84
7.0	.91	.87	.84	.90	.87	.84	.89	.86	.84	.88	.86	.83	.87	.85	.83	.82
8.0	.89	.85	.82	.88	.84	.82	.87	.84	.82	.86	.83	.81	.86	.83	.81	.80
9.0	.86	.82	.80	.86	.82	.80	.85	.82	.79	.84	.81	.79	.84	.81	.79	.78
10.0	.84	.80	.78	.84	.80	.78	.83	.80	.77	.82	.79	.77	.82	.79	.77	.76



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:ZR  
 Test Date:2021-05-20

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity:65.0%  
 Test Distance:8.402m [K=1.0000]  
 Remarks:

### WEC AND CCEC

Test:U:224.8V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1111.91x1 lm					
NAME: ALT85F-28G30-Z2-Max			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:70		Shielding Angle:

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coeffcients(WEC)										
0.0																	
1.0	.135	.077	.024	.128	.073	.023	.116	.067	.021	.105	.060	.019	.094	.055	.018		
2.0	.123	.067	.021	.118	.065	.020	.108	.060	.019	.098	.055	.017	.089	.051	.016		
3.0	.114	.060	.018	.109	.058	.018	.101	.055	.017	.093	.051	.016	.086	.047	.015		
4.0	.106	.055	.016	.102	.053	.016	.095	.050	.015	.088	.047	.014	.082	.045	.014		
5.0	.099	.051	.015	.096	.049	.014	.090	.047	.014	.084	.044	.013	.079	.042	.013		
6.0	.093	.047	.013	.091	.046	.013	.086	.044	.013	.081	.042	.012	.076	.040	.012		
7.0	.089	.044	.012	.086	.043	.012	.082	.041	.012	.078	.040	.012	.074	.038	.011		
8.0	.084	.041	.012	.082	.041	.011	.078	.039	.011	.075	.038	.011	.071	.037	.011		
9.0	.081	.039	.011	.079	.038	.011	.075	.037	.011	.072	.036	.010	.069	.035	.010		
10.0	.077	.037	.010	.076	.037	.010	.073	.036	.010	.070	.035	.010	.067	.034	.010		

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	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	.168	.158	.148	.144	.135	.128	.098	.093	.088	.057	.054	.051	.018	.017	.017		
2.0	.150	.133	.118	.128	.114	.102	.088	.079	.071	.051	.046	.042	.016	.015	.014		
3.0	.134	.113	.096	.115	.098	.084	.079	.068	.059	.046	.040	.035	.015	.013	.011		
4.0	.121	.098	.080	.104	.084	.069	.072	.059	.049	.041	.034	.029	.013	.011	.009		
5.0	.111	.085	.067	.095	.074	.058	.065	.052	.041	.038	.030	.024	.012	.010	.008		
6.0	.102	.075	.056	.087	.065	.049	.060	.046	.035	.035	.027	.021	.011	.009	.007		
7.0	.094	.067	.048	.081	.058	.042	.056	.041	.030	.032	.024	.018	.010	.008	.006		
8.0	.087	.060	.042	.075	.052	.036	.052	.037	.026	.030	.022	.015	.010	.007	.005		
9.0	.081	.054	.036	.070	.047	.032	.049	.033	.022	.028	.020	.013	.009	.006	.004		
10.0	.076	.050	.032	.066	.043	.028	.046	.030	.020	.027	.018	.012	.009	.006	.004		

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-05-20

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:

UGR(Unified Glare Rating) Table

Test:U:224.8V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1111.91x1 lm											
NAME: ALT85F-28G30-Z2-Max					TYPE:			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:			
MFR.:					SUR.:70			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		-10.3	-9.7	-10.1	-9.5	-9.4	-10.2	-9.6	-10.0	-9.5	-9.3
	3H	-4.7	-4.1	-4.5	-4.0	-3.8	-4.7	-4.1	-4.5	-3.9	-3.8
	4H	-2.0	-1.5	-1.8	-1.3	-1.0	-2.0	-1.5	-1.8	-1.3	-1.1
	6H	0.7	1.2	1.0	1.4	1.7	0.8	1.3	1.0	1.5	1.7
	8H	2.1	2.6	2.4	2.8	3.1	2.1	2.6	2.4	2.9	3.1
	12H	3.6	4.1	3.9	4.4	4.6	3.6	4.1	3.9	4.4	4.6
4H	2H	-8.2	-7.7	-8.0	-7.5	-7.3	-8.2	-7.6	-7.9	-7.4	-7.2
	3H	-3.0	-2.5	-2.7	-2.2	-2.0	-3.0	-2.5	-2.6	-2.2	-1.9
	4H	-0.2	0.2	0.1	0.5	0.8	-0.3	0.2	0.1	0.5	0.8
	6H	2.5	2.9	2.9	3.2	3.6	2.6	3.0	2.9	3.3	3.6
	8H	4.0	4.3	4.3	4.7	5.0	4.0	4.4	4.4	4.7	5.1
	12H	5.5	5.9	5.9	6.2	6.6	5.5	5.9	5.9	6.2	6.6
8H	4H	0.8	1.2	1.2	1.5	1.9	0.8	1.2	1.2	1.5	1.9
	6H	3.7	4.1	4.2	4.4	4.9	3.8	4.1	4.2	4.5	4.9
	8H	5.3	5.6	5.8	6.0	6.5	5.3	5.6	5.8	6.0	6.5
	12H	7.1	7.3	7.6	7.8	8.2	7.1	7.3	7.6	7.8	8.2
12H	4H	1.1	1.5	1.5	1.8	2.2	1.1	1.5	1.5	1.8	2.2
	6H	4.1	4.4	4.6	4.8	5.3	4.2	4.4	4.6	4.9	5.3
	8H	5.8	6.1	6.3	6.5	7.0	5.8	6.1	6.3	6.5	7.0
Variations with the observer position at spacings:											
S = 1.0H		+ 0.1 / - 0.1				+ 0.1 / - 0.1					
1.5H		+ 0.2 / - 0.3				+ 0.2 / - 0.3					
2.0H		+ 0.3 / - 0.4				+ 0.3 / - 0.4					

CIE Pub.117, 1112 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.4)

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-05-20

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

Test:U:224.8V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1111.91x1 lm		
NAME: ALT85F-28G30-Z2-Max	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:70	Shielding Angle:

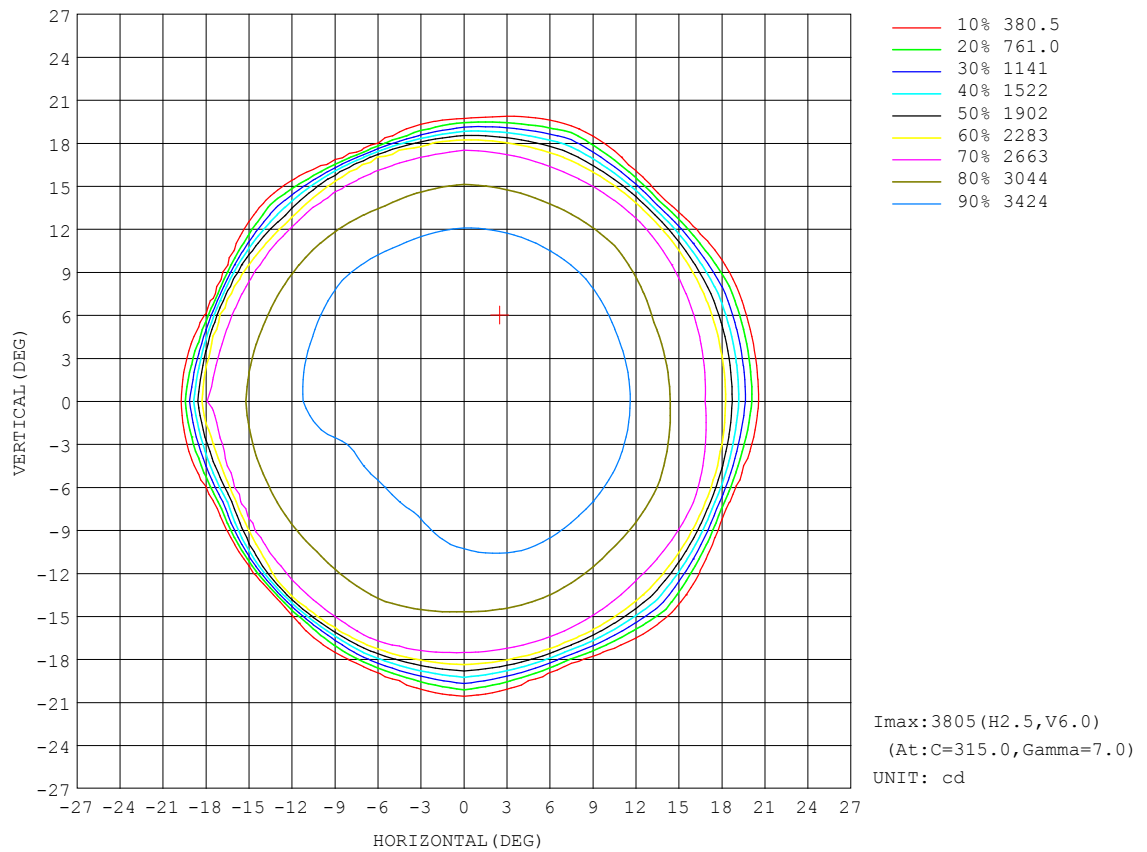
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	85	81	90	85	81	89	84	81	78
0.80	98	92	89	97	92	89	96	91	88	85
1.00	101	96	93	101	96	93	99	96	92	89
1.25	105	100	97	104	100	97	102	98	96	92
1.50	107	103	100	106	102	99	104	101	98	94
2.00	110	106	103	108	105	102	105	103	100	95
2.50	111	108	105	109	106	104	106	104	102	96
3.00	112	109	107	111	108	106	107	105	103	97
4.00	114	112	110	112	110	108	109	107	106	99
5.00	116	113	112	113	112	110	110	108	107	100
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:25.3DEG  
Operators:ZR  
Test Date:2021-05-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:

## ISOCANDELA DIAGRAM

Test:U:224.8V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1111.91x1 lm		
NAME: ALT85F-28G30-Z2-Max	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:70	Shielding Angle:



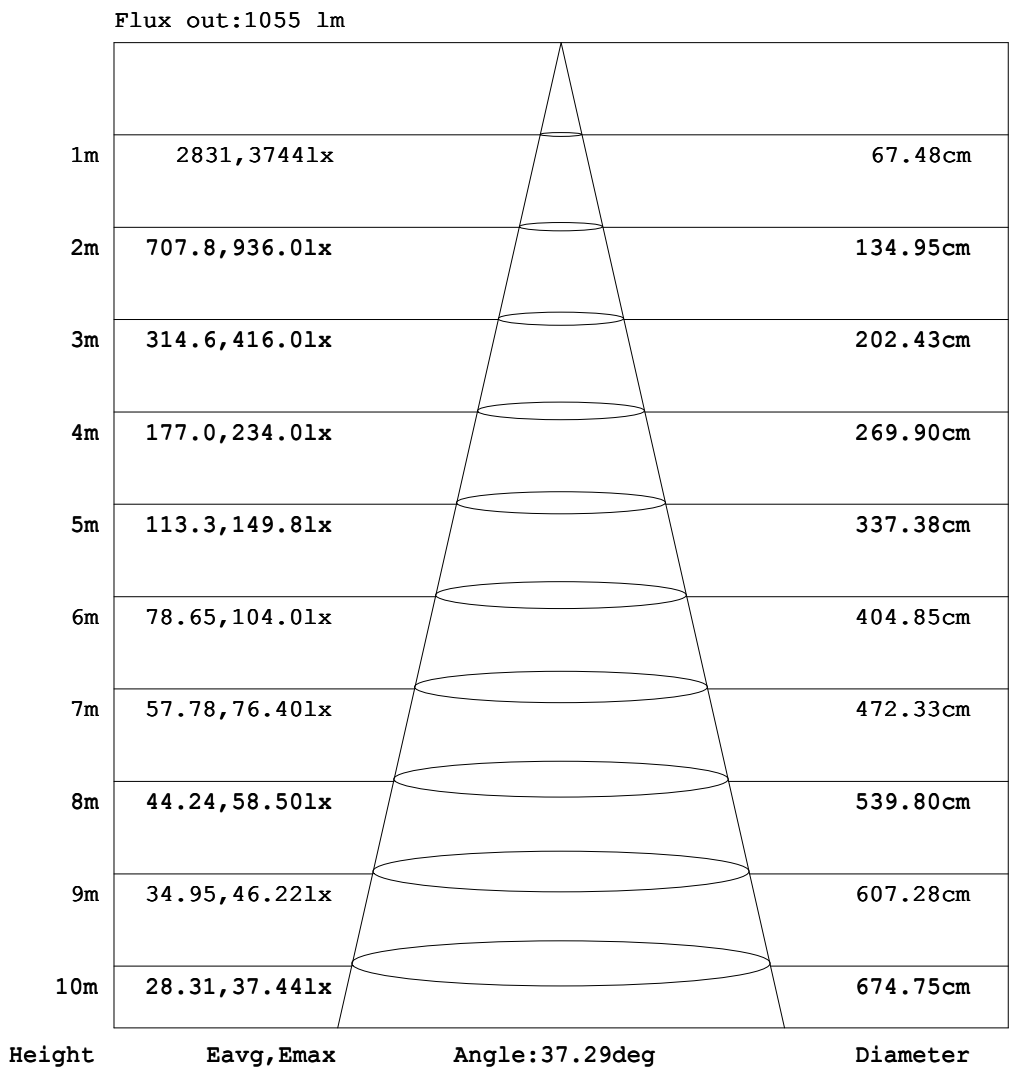
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-05-20

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:



### AAI Figure

Test:U:224.8V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1111.91x1 lm		
NAME: ALT85F-28G30-Z2-Max	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:70	Shielding Angle:



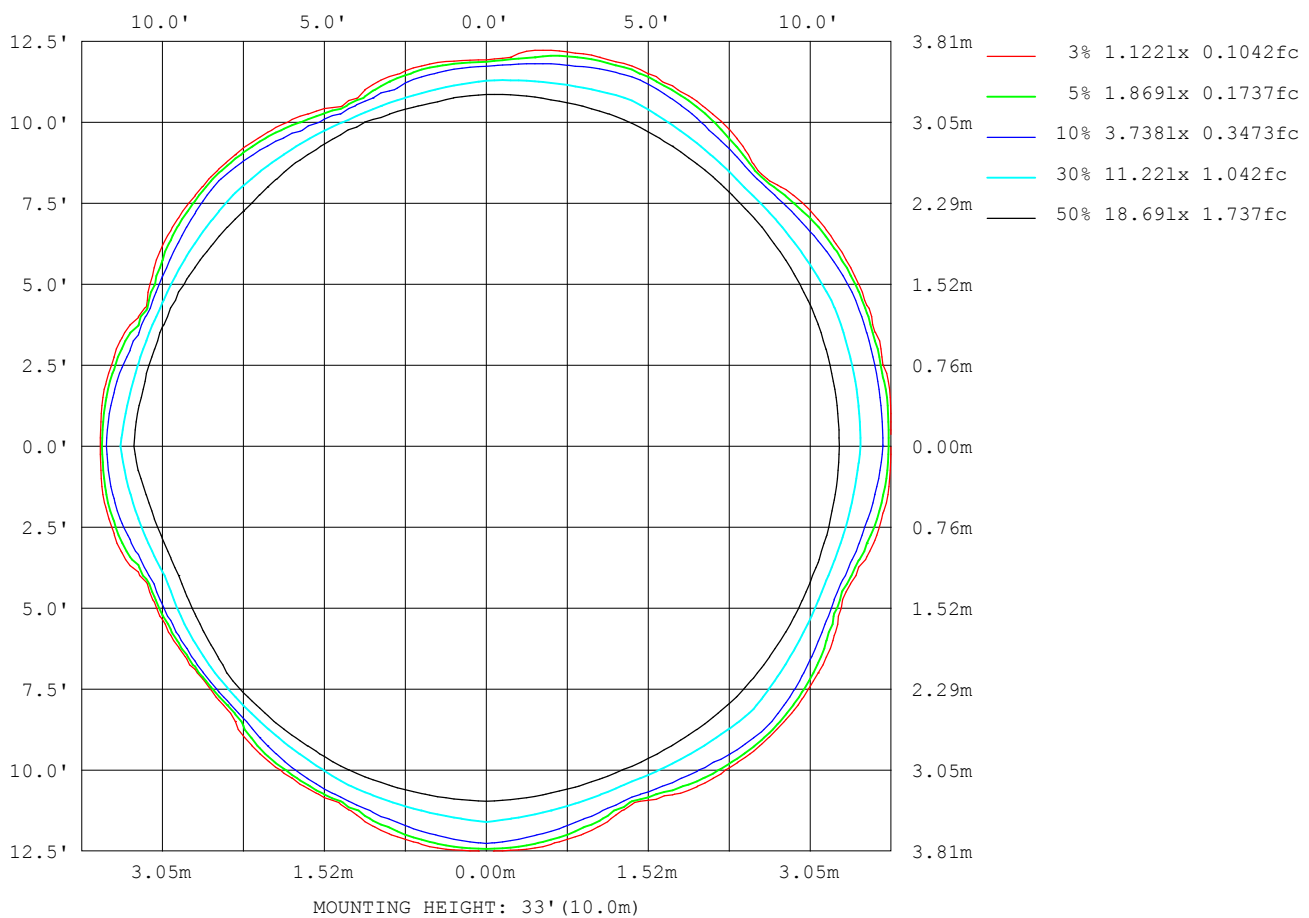
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: ZR  
Test Date: 2021-05-20

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity: 65.0%  
Test Distance: 8.402m [K=1.0000]  
Remarks:

## ISOLUX DIAGRAM

Test:U:224.8V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1111.91x1 lm		
NAME: ALT85F-28G30-Z2-Max	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:70	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-05-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:

## LED Avg.L Report

Test:U:224.8V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1111.91x1 lm		
NAME: ALT85F-28G30-Z2-Max	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:70	Shielding Angle:

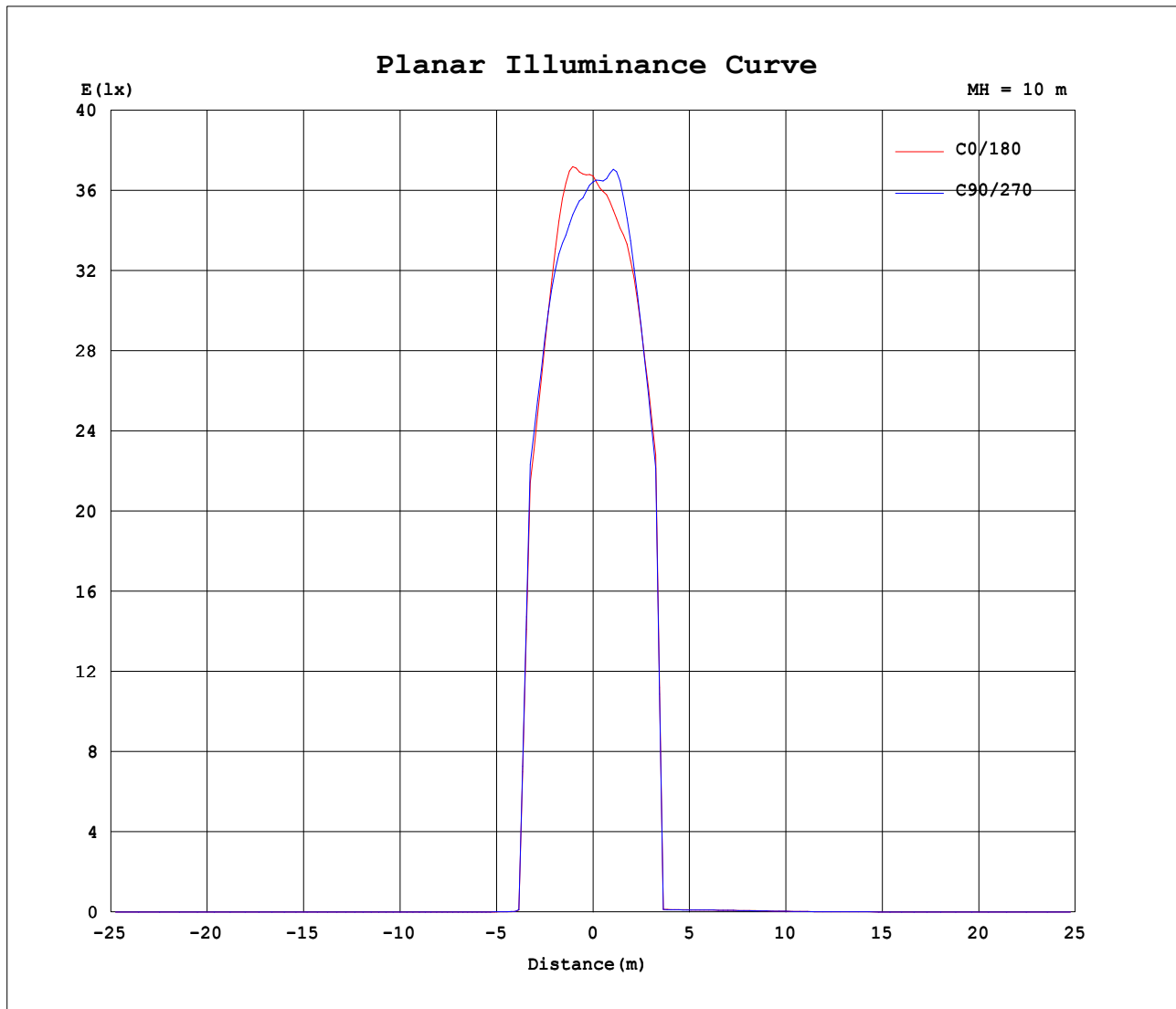
AvgL	cd/m2
L_0~180 (65) av	2032
L_0~180 (75) av	2561
L_0~180 (85) av	6098
L_90~270 (65) av	2035
L_90~270 (75) av	2563
L_90~270 (85) av	6092
L_45 (65) av	2038
L_45 (75) av	2560
L_45 (85) av	6105

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-05-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: ZR  
Test Date: 2021-05-20

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity: 65.0%  
Test Distance: 8.402m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
Humidity:65.0%
Test Distance:8.402m [K=1.0000]
Remarks:

```