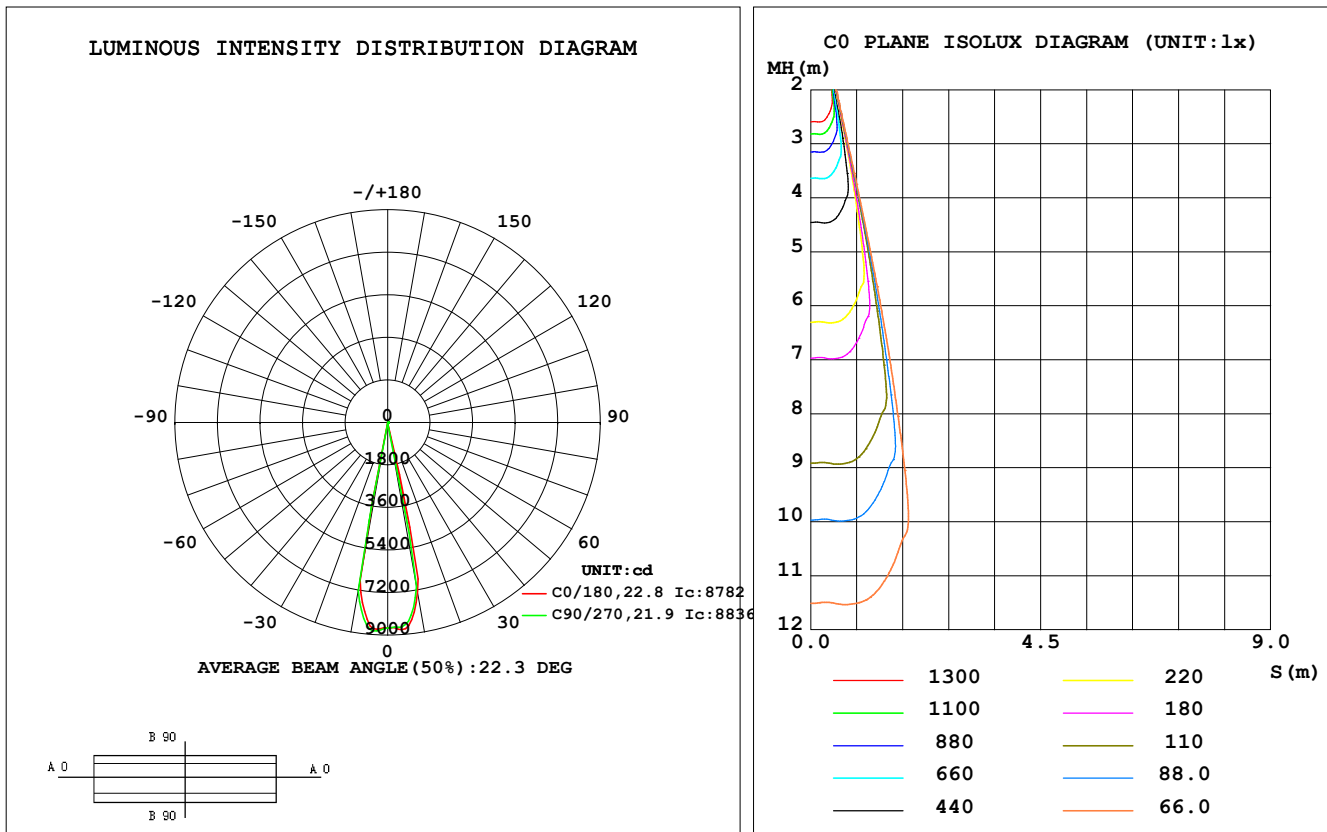


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:224.9V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1035.27x1 lm					
NAME: ALT85F-28G40-Z2-Min		TYPE:		WEIGHT:	
SPEC.:		DIM.:		SERIAL No.:	
MFR.:		SUR.:70		Shielding Angle:	

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 37.51 lm/W
MODEL	4000K CRI90	I <sub>max</sub> (cd)	8839	S/MH(C0/180)	0.28	
NOMINAL POWER(W)	28	LOR(%)	100.0	S/MH(C90/270)	0.29	
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	1035.3	η UP,DN(C0-180)	0.0,47.7	
NOMINAL FLUX(lm)	1035.27	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,52.3	
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	



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	7278	7150	7040	6804	6777	6830	7220	7442	0- 10	776.3	776.3	75,75
20	3.053	3.018	2.431	2.055	15.30	15.30	15.08	15.08	10- 20	229.2	1006	97.1,97.1
30	2.060	2.026	1.684	1.391	24.15	24.30	24.55	24.77	20- 30	5.503	1011	97.7,97.7
40	1.505	1.532	1.262	1.074	15.00	15.24	15.71	16.11	30- 40	7.042	1018	98.3,98.3
50	1.169	1.231	1.070	0.8934	9.664	9.649	9.750	9.835	40- 50	4.842	1023	98.8,98.8
60	1.394	1.410	1.341	1.269	6.417	6.468	6.590	6.722	50- 60	4.268	1027	99.2,99.2
70	1.448	1.463	1.407	1.397	4.186	4.213	4.263	4.297	60- 70	3.323	1031	99.5,99.5
80	1.363	1.363	1.357	1.364	2.992	3.008	3.018	3.029	70- 80	2.633	1033	99.8,99.8
90	1.321	1.294	1.299	1.306	2.039	2.047	2.064	2.094	80- 90	2.121	1035	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): 1020.7 lm

%lum = 98.6%

%lamp = 98.6%

Conical surface Flux(120deg): 1027.2 lm

%lum = 99.2%

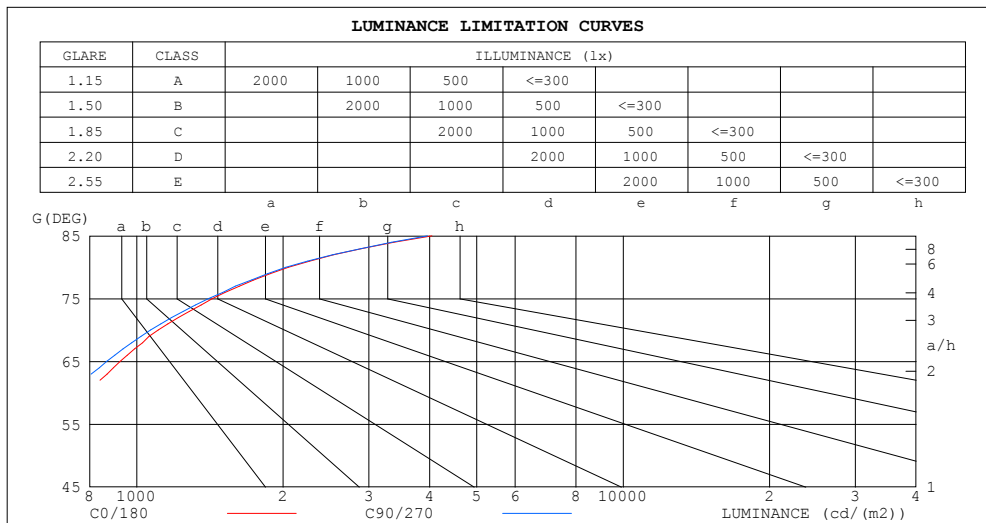
%lamp = 99.2%

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:224.9V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1035.27x1 lm		
NAME: ALT85F-28G40-Z2-Min	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:70	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	4046	3962
80	2051	2028
75	1429	1404
70	1106	1067
65	925	868
60	729	696
55	566	540
50	475	432
45	446	391

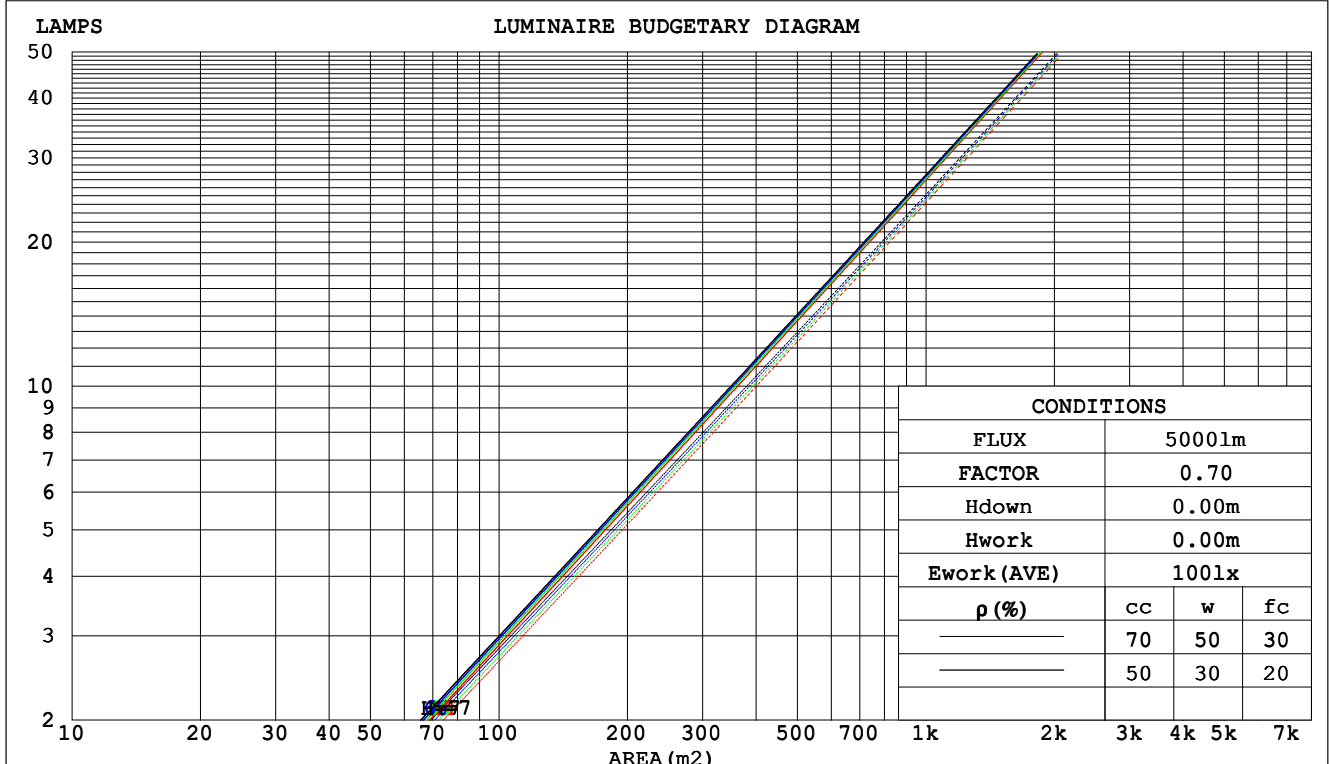
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-05-20

$\gamma$  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:224.9V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1035.27x1 lm		
NAME: ALT85F-28G40-Z2-Min	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	1.14	1.13	1.11	1.12	1.11	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.01	1.01	1.00	.98
2.0	1.10	1.08	1.06	1.09	1.07	1.05	1.06	1.04	1.03	1.03	1.02	1.01	1.00	.99	.99	.97
3.0	1.07	1.05	1.02	1.06	1.04	1.02	1.04	1.02	1.00	1.02	1.00	.99	.00	.98	.97	.96
4.0	1.05	1.02	.00	1.04	1.01	.99	1.02	.00	.98	1.00	.99	.97	.99	.97	.96	.95
5.0	1.03	.00	.98	1.02	.99	.97	1.01	.98	.97	.99	.97	.96	.98	.96	.95	.94
6.0	1.01	.98	.96	1.01	.98	.96	.99	.97	.95	.98	.96	.95	.97	.95	.94	.93
7.0	.00	.97	.95	.99	.96	.95	.98	.96	.94	.97	.95	.94	.96	.95	.93	.93
8.0	.98	.96	.94	.98	.95	.93	.97	.95	.93	.96	.94	.93	.96	.94	.93	.92
9.0	.97	.94	.93	.97	.94	.92	.96	.94	.92	.96	.93	.92	.95	.93	.92	.91
10.0	.96	.93	.92	.96	.93	.92	.95	.93	.91	.95	.93	.91	.94	.92	.91	.90



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:224.9V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1035.27x1 lm					
NAME: ALT85F-28G40-Z2-Min			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 Coefficients(WEC)									
0.0																
1.0	.112	.064	.020	.105	.060	.019	.093	.053	.017	.082	.047	.015	.071	.041	.013	
2.0	.100	.055	.017	.094	.052	.016	.084	.047	.015	.075	.042	.013	.067	.038	.012	
3.0	.090	.048	.014	.086	.046	.014	.078	.042	.013	.070	.038	.012	.063	.035	.011	
4.0	.082	.043	.013	.078	.041	.012	.072	.038	.011	.065	.035	.011	.060	.032	.010	
5.0	.075	.038	.011	.072	.037	.011	.067	.035	.010	.061	.032	.010	.057	.030	.009	
6.0	.070	.035	.010	.067	.034	.010	.062	.032	.009	.058	.030	.009	.054	.028	.008	
7.0	.065	.032	.009	.063	.031	.009	.059	.030	.009	.055	.028	.008	.051	.027	.008	
8.0	.061	.030	.008	.059	.029	.008	.055	.028	.008	.052	.026	.008	.049	.025	.007	
9.0	.057	.028	.008	.055	.027	.008	.052	.026	.007	.050	.025	.007	.047	.024	.007	
10.0	.054	.026	.007	.052	.025	.007	.050	.024	.007	.047	.023	.007	.045	.023	.006	

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	.167	.158	.150	.143	.136	.129	.098	.093	.089	.056	.054	.052	.018	.017	.017	
2.0	.147	.133	.121	.126	.114	.105	.086	.079	.073	.050	.046	.043	.016	.015	.014	
3.0	.130	.113	.100	.111	.098	.086	.076	.068	.061	.044	.040	.036	.014	.013	.012	
4.0	.116	.097	.083	.099	.084	.072	.068	.059	.051	.039	.034	.030	.013	.011	.010	
5.0	.104	.084	.070	.089	.073	.061	.061	.051	.043	.036	.030	.026	.011	.010	.008	
6.0	.094	.074	.060	.080	.064	.052	.055	.045	.037	.032	.026	.022	.010	.009	.007	
7.0	.085	.065	.051	.073	.057	.045	.050	.040	.032	.029	.023	.019	.009	.008	.006	
8.0	.077	.058	.045	.067	.050	.039	.046	.035	.028	.027	.021	.016	.009	.007	.005	
9.0	.071	.052	.039	.061	.045	.034	.042	.032	.024	.025	.019	.014	.008	.006	.005	
10.0	.065	.047	.034	.056	.041	.030	.039	.029	.021	.023	.017	.013	.007	.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:224.9V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1035.27x1 lm											
NAME: ALT85F-28G40-Z2-Min					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		-5.1	-4.7	-5.0	-4.6	-4.4	-5.4	-5.0	-5.3	-4.9	-4.7
	3H	-1.6	-1.2	-1.4	-1.0	-0.8	-1.9	-1.4	-1.6	-1.3	-1.1
	4H	0.2	0.6	0.5	0.8	1.0	0.0	0.4	0.3	0.6	0.8
	6H	2.2	2.6	2.5	2.8	3.1	2.1	2.5	2.3	2.7	2.9
	8H	3.3	3.7	3.6	3.9	4.2	3.2	3.6	3.5	3.8	4.1
	12H	4.6	5.0	4.9	5.2	5.5	4.5	4.9	4.8	5.1	5.4
4H	2H	-3.7	-3.3	-3.5	-3.1	-2.9	-3.9	-3.5	-3.7	-3.3	-3.1
	3H	-0.2	0.2	0.1	0.4	0.7	-0.4	-0.0	-0.1	0.2	0.5
	4H	1.7	2.0	2.0	2.3	2.6	1.6	1.9	1.9	2.2	2.5
	6H	3.8	4.1	4.2	4.5	4.8	3.7	4.0	4.1	4.4	4.7
	8H	5.0	5.3	5.4	5.6	6.0	4.9	5.2	5.3	5.6	5.9
	12H	6.4	6.7	6.8	7.0	7.4	6.3	6.6	6.7	6.9	7.3
8H	4H	2.5	2.8	2.9	3.1	3.5	2.4	2.7	2.8	3.0	3.4
	6H	4.8	5.1	5.3	5.5	5.9	4.8	5.0	5.2	5.4	5.8
	8H	6.2	6.4	6.6	6.8	7.3	6.2	6.4	6.6	6.8	7.2
	12H	7.8	8.0	8.3	8.4	8.9	7.7	7.9	8.2	8.4	8.8
12H	4H	2.7	3.0	3.1	3.3	3.7	2.6	2.9	3.0	3.2	3.6
	6H	5.2	5.4	5.6	5.8	6.2	5.1	5.3	5.6	5.8	6.2
	8H	6.6	6.8	7.1	7.3	7.7	6.6	6.8	7.1	7.2	7.7
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1					
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3					
2.0H	+ 0.3 / - 0.4					+ 0.3 / - 0.4					

CIE Pub.117, 1035 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.1)

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:224.9V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1035.27x1 lm		
NAME: ALT85F-28G40-Z2-Min	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:70	Shielding Angle:

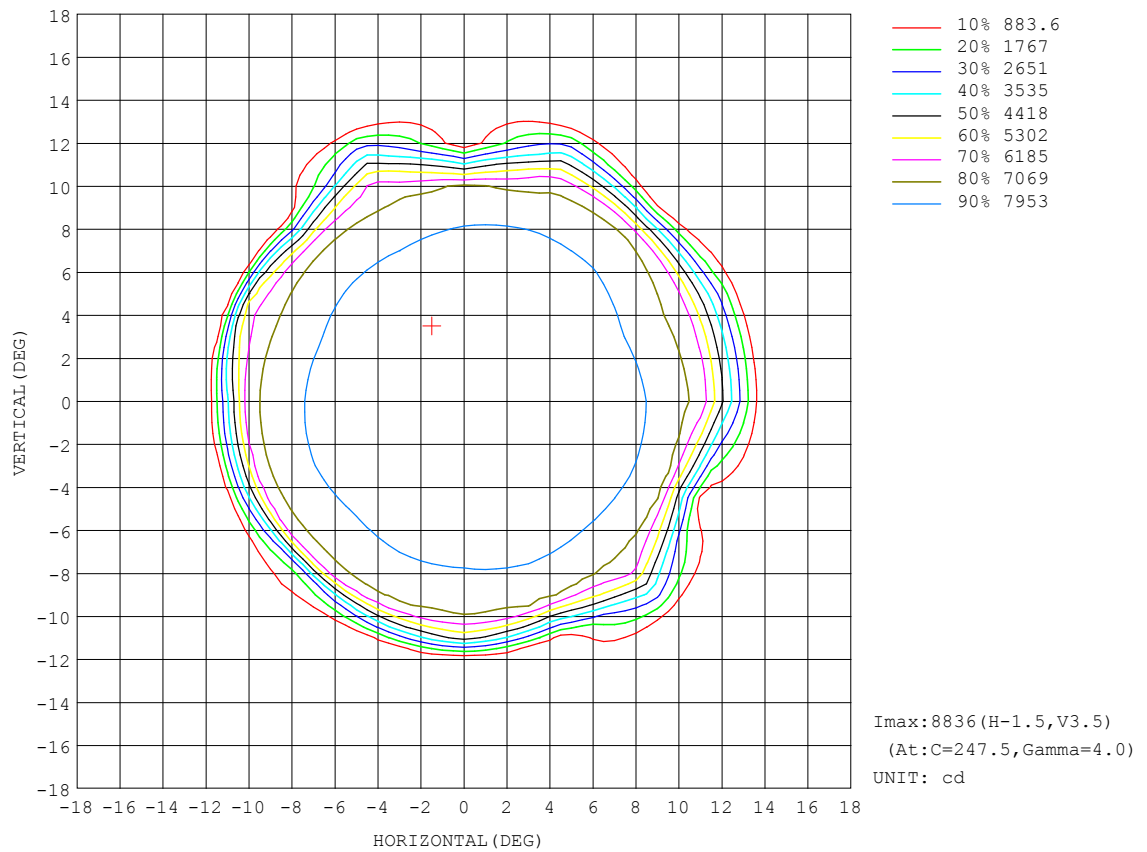
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	85	81	90	85	81	89	84	81	78
0.80	98	92	89	97	92	89	96	91	88	85
1.00	101	96	93	100	96	93	99	95	92	88
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	109	106	103	108	105	102	105	103	100	95
2.50	111	107	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:224.9V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1035.27x1 lm		
NAME: ALT85F-28G40-Z2-Min	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:70	Shielding Angle:



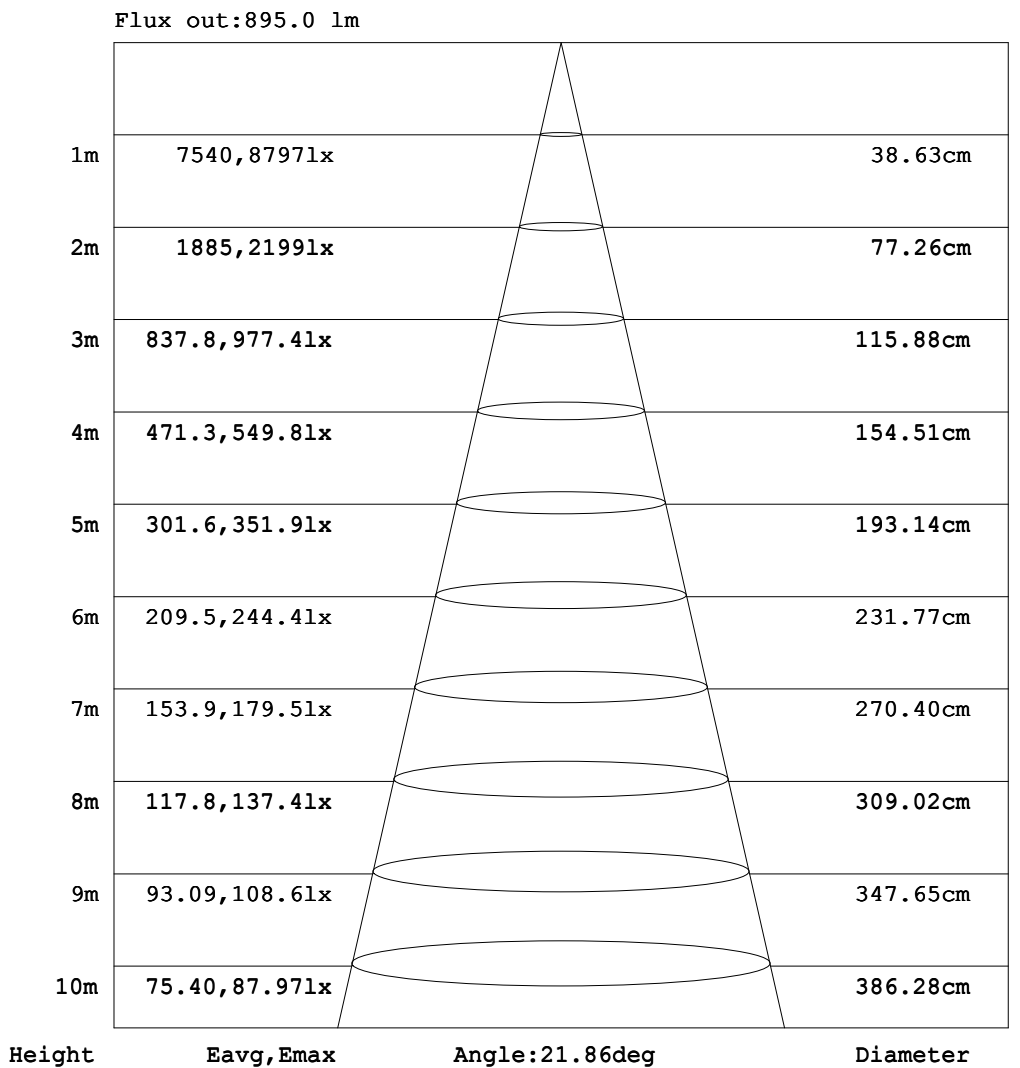
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-05-20

$\gamma$  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:



### AAI Figure

Test:U:224.9V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1035.27x1 lm		
NAME: ALT85F-28G40-Z2-Min	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:70	Shielding Angle:



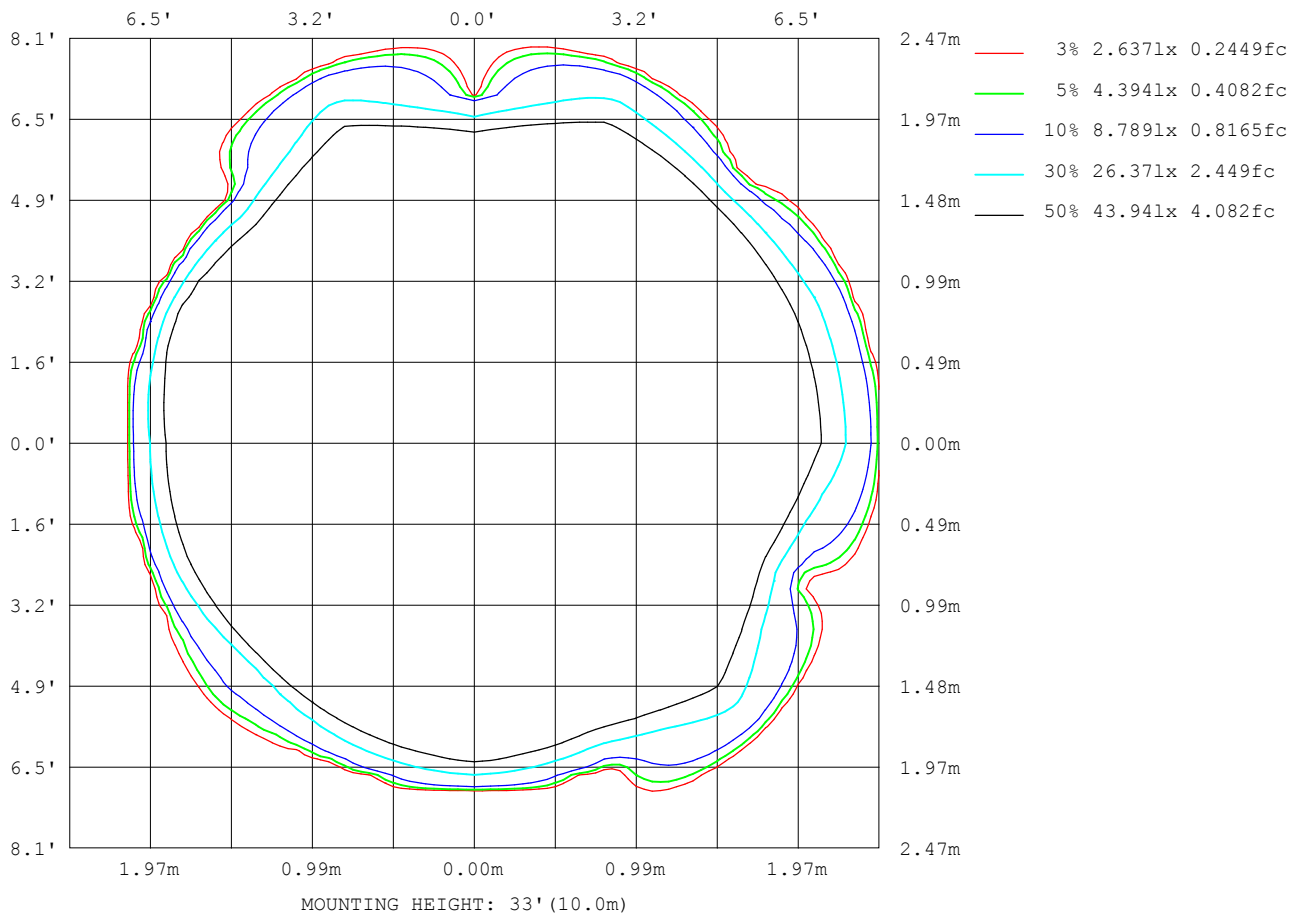
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:224.9V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1035.27x1 lm		
NAME: ALT85F-28G40-Z2-Min	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:

## LED Avg.L Report

Test:U:224.9V I:0.1290A P:27.60W PF:0.9520 Freq:50.00Hz Lamp Flux:1035.27x1 lm		
NAME: ALT85F-28G40-Z2-Min	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:70	Shielding Angle:

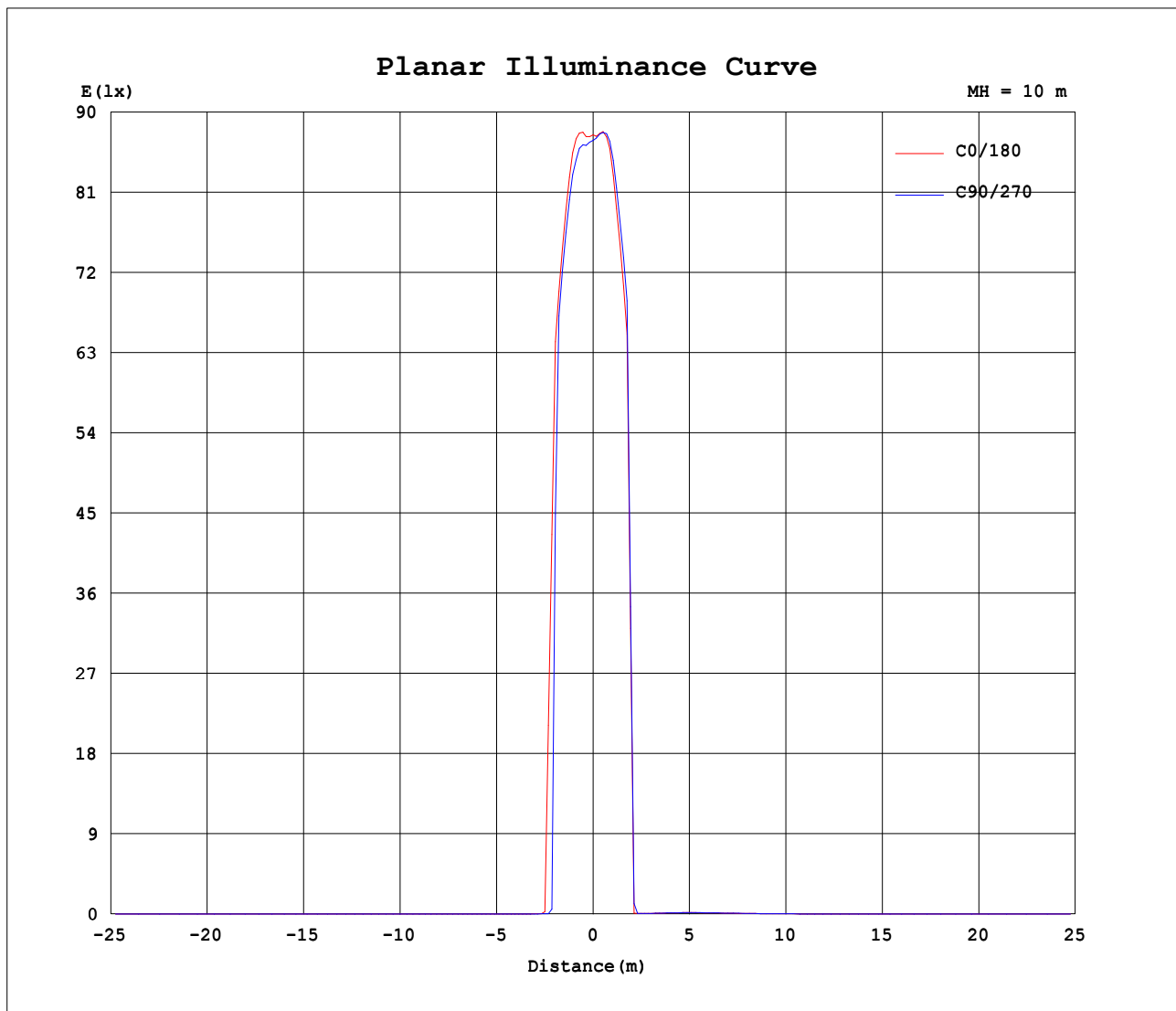
AvgL	cd/m2
L_0~180 (65) av	2034
L_0~180 (75) av	2474
L_0~180 (85) av	5754
L_90~270 (65) av	2049
L_90~270 (75) av	2500
L_90~270 (85) av	5792
L_45 (65) av	2055
L_45 (75) av	2497
L_45 (85) av	5787

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:

```