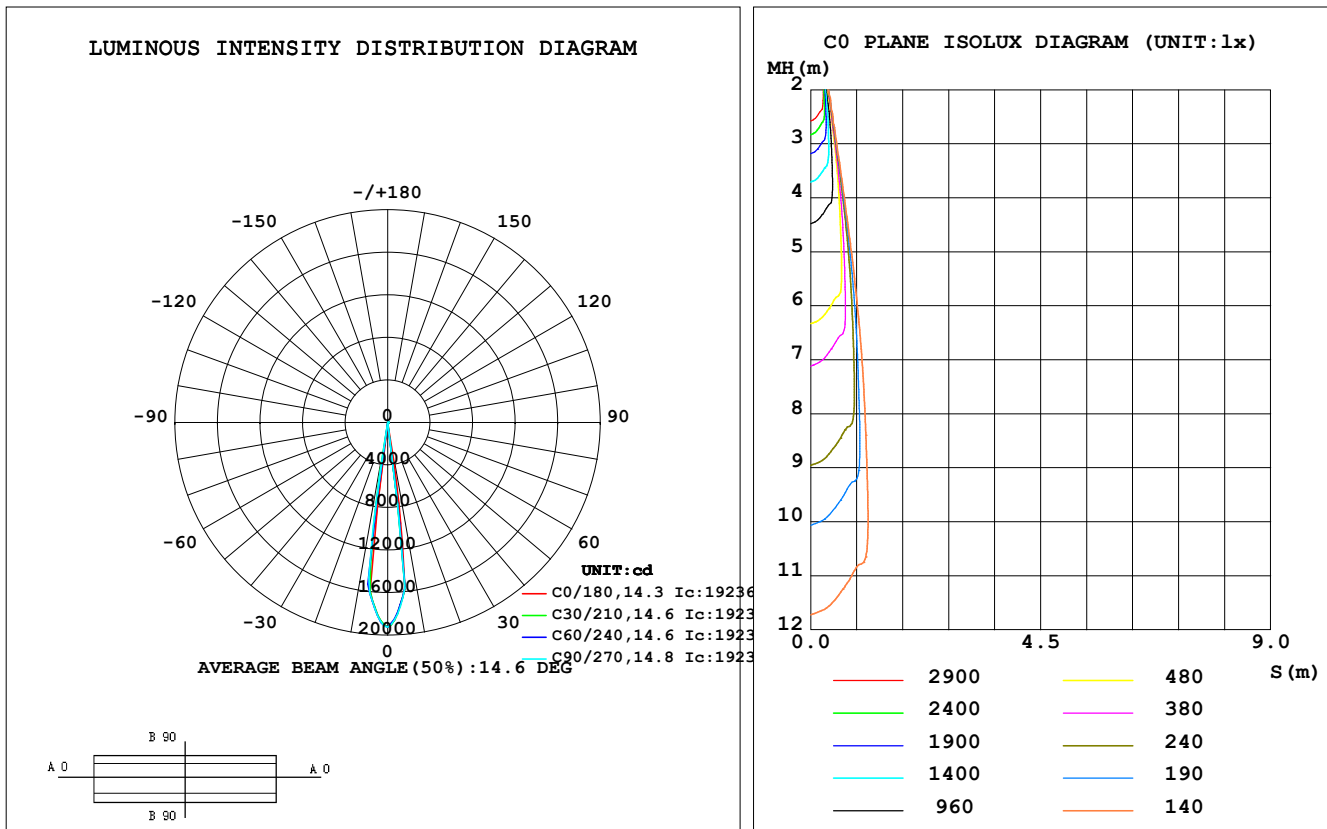


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:224.9V I:0.1300A P:28.10W PF:0.9560 Freq:50.00Hz Lamp Flux:964.678x1 lm					
NAME: ALT85F-28G40-Z1-Min		TYPE:		WEIGHT:	
SPEC.:		DIM.:		SERIAL No.:	
MFR.:		SUR.:54		Shielding Angle:	

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 34.33 lm/W
MODEL	4000K CRI90	I _{max} (cd)	19236	S/MH (C0/180)	0.18	
NOMINAL POWER (W)	28	LOR (%)	100.0	S/MH (C90/270)	0.22	
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	964.68	η UP, DN (C0-180)	0.0, 43.6	
NOMINAL FLUX (lm)	964.678	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 56.4	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE (V)	225.4	η down (%)	100.0	CIBSE SHR MAX	1.00	



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: ZR
Test Date: 2021-06-26

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:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	4.898	0.5930	0.5744	0.5926	0.6764	2.585	4.813	2.681	0- 10	934.4	934.4	96.9,96.9
20	0.1563	0.1595	0.1453	0.1735	1.401	1.389	1.372	1.303	10- 20	1.658	936.1	97,97
30	0.1337	0.1644	0.1297	0.1846	3.033	3.055	2.955	2.928	20- 30	5.844	941.9	97.6,97.6
40	0.1380	0.1381	0.1186	0.1537	1.228	1.221	1.165	1.153	30- 40	6.842	948.8	98.4,98.4
50	0.1353	0.1433	0.1297	0.1502	1.034	1.027	0.9848	0.9747	40- 50	4.606	953.4	98.8,98.8
60	0.1560	0.1594	0.1434	0.1603	0.6274	0.6259	0.5991	0.5920	50- 60	4.246	957.6	99.3,99.3
70	0.1196	0.1185	0.1148	0.1168	0.3585	0.3612	0.3617	0.3590	60- 70	3.021	960.6	99.6,99.6
80	0.1159	0.1126	0.1087	0.1122	0.2700	0.2703	0.2694	0.2699	70- 80	2.229	962.9	99.8,99.8
90	0.1074	0.1064	0.1044	0.1057	0.1754	0.1776	0.1798	0.1779	80- 90	1.811	964.7	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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 950.94 lm

%lum = 98.6%

%lamp = 98.6%

Conical surface Flux(120deg): 957.62 lm

%lum = 99.3%

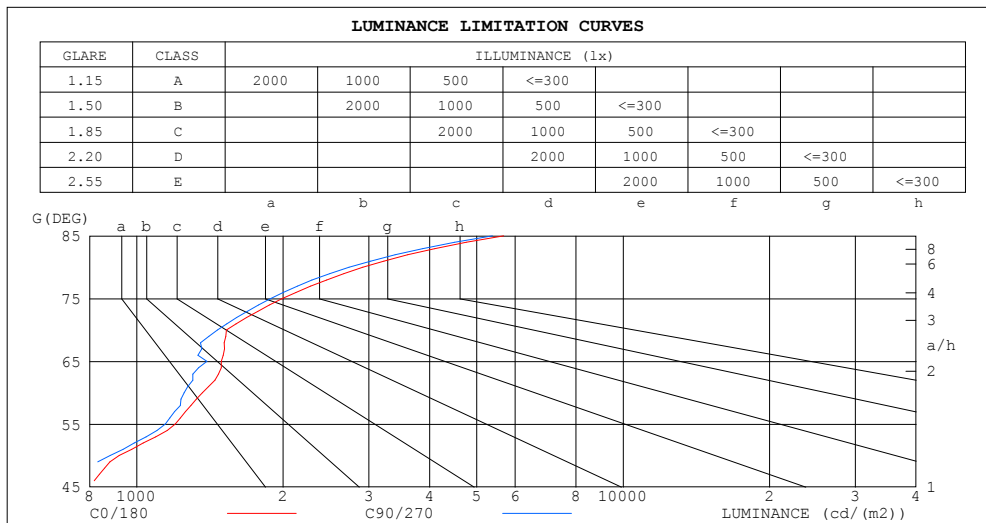
%lamp = 99.3%

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:ZR
 Test Date:2021-06-26

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:

LUMINANCE LIMITATION CURVES

Test:U:224.9V I:0.1300A P:28.10W PF:0.9560 Freq:50.00Hz Lamp Flux:964.678x1 lm		
NAME: ALT85F-28G40-Z1-Min	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:54	Shielding Angle:



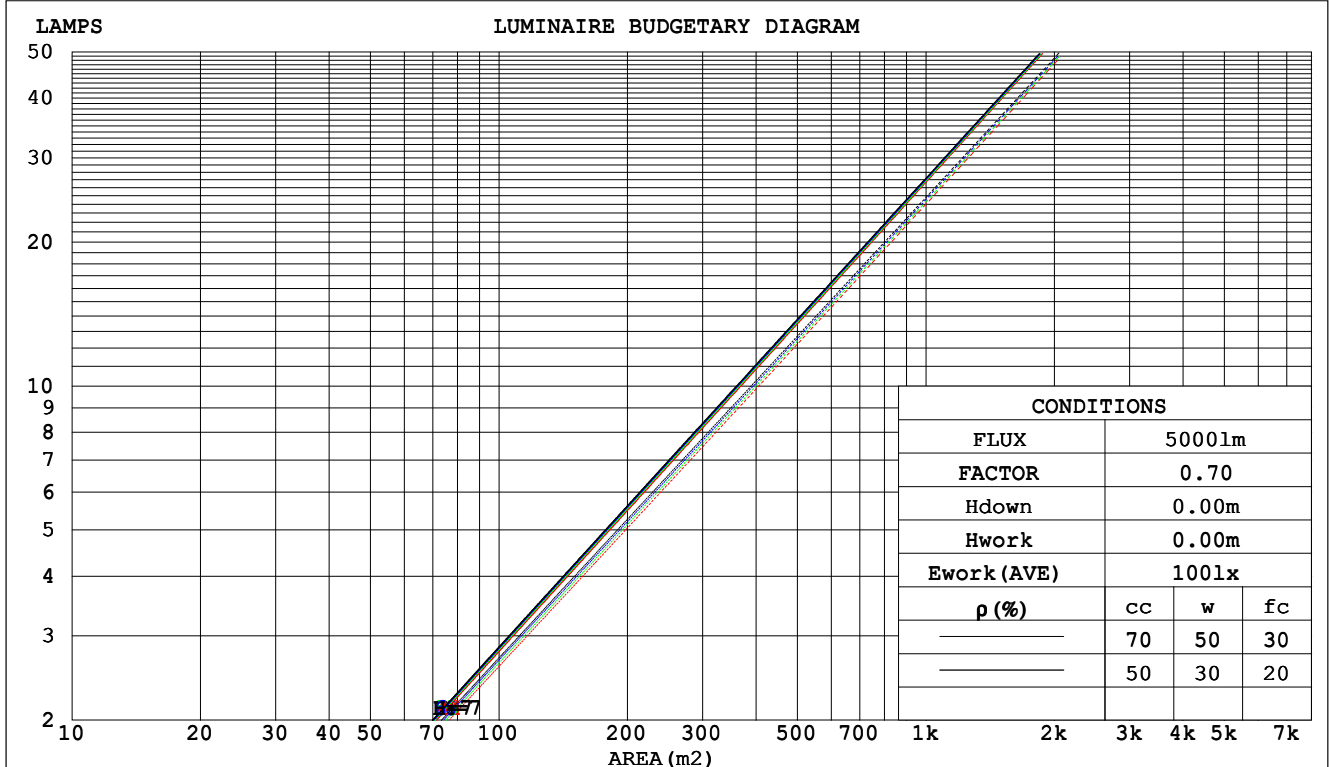
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-06-26

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:224.9V I:0.1300A P:28.10W PF:0.9560 Freq:50.00Hz Lamp Flux:964.678x1 lm		
NAME: ALT85F-28G40-Z1-Min	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:54	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	1.15	1.13	1.12	1.13	1.12	1.10	1.09	1.08	1.07	1.05	1.05	1.04	1.02	1.01	1.01	.99
2.0	1.12	1.10	1.08	1.10	1.08	1.07	1.07	1.06	1.04	1.04	1.03	1.02	1.02	1.01	1.00	.99
3.0	1.09	1.07	1.05	1.08	1.06	1.04	1.06	1.04	1.03	1.04	1.02	1.01	1.02	1.01	.00	.99
4.0	1.07	1.05	1.03	1.06	1.04	1.02	1.05	1.03	1.01	1.03	1.02	1.00	1.01	1.00	.99	.98
5.0	1.06	1.04	1.02	1.05	1.03	1.01	1.04	1.02	1.00	1.02	1.01	.00	1.01	.00	.99	.98
6.0	1.05	1.02	1.01	1.04	1.02	1.00	1.03	1.01	.00	1.02	1.00	.99	1.01	.00	.99	.98
7.0	1.04	1.02	.00	1.03	1.01	.00	1.03	1.01	.99	1.02	1.00	.99	1.01	.00	.98	.98
8.0	1.03	1.01	.99	1.03	1.01	.99	1.02	1.00	.99	1.01	.00	.99	1.01	.99	.98	.98
9.0	1.03	1.00	.99	1.02	1.00	.99	1.02	.00	.99	1.01	.00	.98	1.01	.99	.98	.98
10.0	1.02	1.00	.99	1.02	.00	.99	1.01	.00	.98	1.01	.99	.98	1.00	.99	.98	.98



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:ZR
 Test Date:2021-06-26

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:0.1300A P:28.10W PF:0.9560 Freq:50.00Hz Lamp Flux:964.678x1 lm					
NAME: ALT85F-28G40-Z1-Min			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:54		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	.100	.057	.018	.093	.053	.017	.081	.047	.015	.070	.040	.013	.060	.035	.011	
2.0	.088	.048	.015	.083	.046	.014	.073	.040	.013	.064	.036	.011	.055	.031	.010	
3.0	.078	.042	.012	.074	.040	.012	.066	.036	.011	.058	.032	.010	.052	.029	.009	
4.0	.070	.036	.011	.067	.035	.010	.060	.032	.010	.054	.029	.009	.048	.026	.008	
5.0	.063	.032	.009	.061	.031	.009	.055	.029	.008	.050	.026	.008	.045	.024	.007	
6.0	.058	.029	.008	.055	.028	.008	.051	.026	.008	.047	.024	.007	.043	.022	.007	
7.0	.053	.026	.007	.051	.025	.007	.047	.024	.007	.043	.022	.006	.040	.021	.006	
8.0	.049	.024	.007	.047	.023	.007	.044	.022	.006	.041	.021	.006	.038	.019	.006	
9.0	.045	.022	.006	.044	.021	.006	.041	.020	.006	.038	.019	.005	.036	.018	.005	
10.0	.042	.020	.006	.041	.020	.005	.038	.019	.005	.036	.018	.005	.034	.017	.005	

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	.166	.158	.151	.142	.136	.130	.097	.093	.090	.056	.054	.052	.018	.017	.017	
2.0	.145	.133	.123	.124	.114	.106	.085	.079	.074	.049	.046	.043	.016	.015	.014	
3.0	.128	.113	.101	.109	.097	.088	.075	.068	.062	.043	.040	.036	.014	.013	.012	
4.0	.113	.097	.085	.097	.084	.074	.067	.058	.052	.038	.034	.031	.012	.011	.010	
5.0	.100	.084	.072	.086	.073	.063	.059	.051	.044	.034	.030	.026	.011	.010	.009	
6.0	.089	.073	.062	.077	.063	.054	.053	.044	.038	.031	.026	.023	.010	.009	.007	
7.0	.080	.064	.053	.069	.056	.046	.048	.039	.033	.028	.023	.020	.009	.008	.006	
8.0	.073	.057	.046	.062	.049	.040	.043	.035	.029	.025	.020	.017	.008	.007	.006	
9.0	.066	.051	.040	.057	.044	.035	.039	.031	.025	.023	.018	.015	.007	.006	.005	
10.0	.060	.045	.036	.052	.039	.031	.036	.028	.022	.021	.016	.013	.007	.005	.004	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-06-26

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:0.1300A P:28.10W PF:0.9560 Freq:50.00Hz Lamp Flux:964.678x1 lm											
NAME: ALT85F-28G40-Z1-Min						TYPE:			WEIGHT:		
SPEC.:						DIM.:			SERIAL No.:		
MFR.:						SUR.:54			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		-2.1	-1.8	-2.0	-1.6	-1.5	-2.6	-2.3	-2.4	-2.1	-2.0
3H		0.4	0.7	0.6	0.9	1.1	-0.0	0.3	0.2	0.5	0.7
4H		1.8	2.2	2.1	2.4	2.6	1.5	1.9	1.7	2.1	2.3
6H		3.6	3.9	3.9	4.2	4.4	3.3	3.6	3.6	3.8	4.1
8H		4.6	5.0	4.9	5.2	5.4	4.3	4.7	4.6	4.9	5.1
12H		5.9	6.2	6.1	6.4	6.7	5.5	5.9	5.8	6.1	6.4
4H 2H		-1.1	-0.7	-0.8	-0.5	-0.3	-1.4	-1.0	-1.1	-0.8	-0.6
3H		1.6	1.9	1.9	2.1	2.4	1.3	1.7	1.6	1.9	2.2
4H		3.2	3.5	3.5	3.8	4.1	3.0	3.3	3.3	3.6	3.9
6H		5.1	5.4	5.5	5.7	6.0	4.9	5.2	5.3	5.5	5.9
8H		6.2	6.5	6.6	6.8	7.2	6.0	6.3	6.4	6.6	7.0
12H		7.6	7.8	8.0	8.2	8.5	7.3	7.6	7.7	7.9	8.3
8H 4H		3.8	4.1	4.2	4.4	4.8	3.7	4.0	4.1	4.3	4.7
6H		6.0	6.3	6.5	6.7	7.1	5.9	6.2	6.4	6.6	7.0
8H		7.4	7.6	7.8	8.0	8.4	7.3	7.5	7.7	7.9	8.3
12H		8.9	9.1	9.4	9.5	10.0	8.8	8.9	9.2	9.4	9.8
12H 4H		4.0	4.3	4.4	4.6	5.0	3.9	4.1	4.3	4.5	4.9
6H		6.3	6.5	6.8	7.0	7.4	6.3	6.5	6.7	6.9	7.3
8H		7.8	7.9	8.2	8.4	8.8	7.7	7.9	8.1	8.3	8.8
Variations with the observer position at spacings:											
S = 1.0H		+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H		+ 0.3 / - 0.3					+ 0.3 / - 0.3				
2.0H		+ 0.3 / - 0.5					+ 0.3 / - 0.5				

CIE Pub.117, 964.7 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.1)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-06-26

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:0.1300A P:28.10W PF:0.9560 Freq:50.00Hz Lamp Flux:964.678x1 lm		
NAME: ALT85F-28G40-Z1-Min	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:54	Shielding Angle:

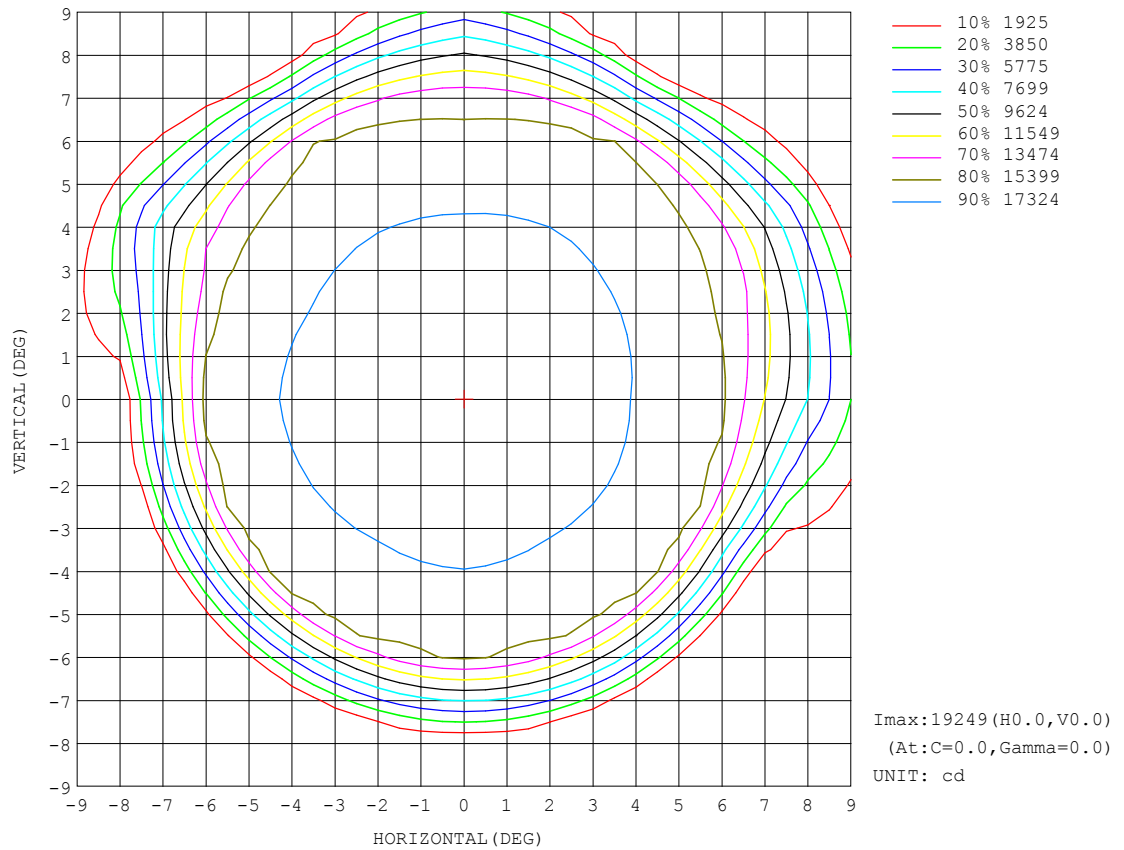
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	85	81	90	85	81	89	84	81	78
0.80	98	92	89	97	92	89	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	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: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-06-26

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:

ISOCANDELA DIAGRAM

Test:U:224.9V I:0.1300A P:28.10W PF:0.9560 Freq:50.00Hz Lamp Flux:964.678x1 lm		
NAME: ALT85F-28G40-Z1-Min	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:54	Shielding Angle:

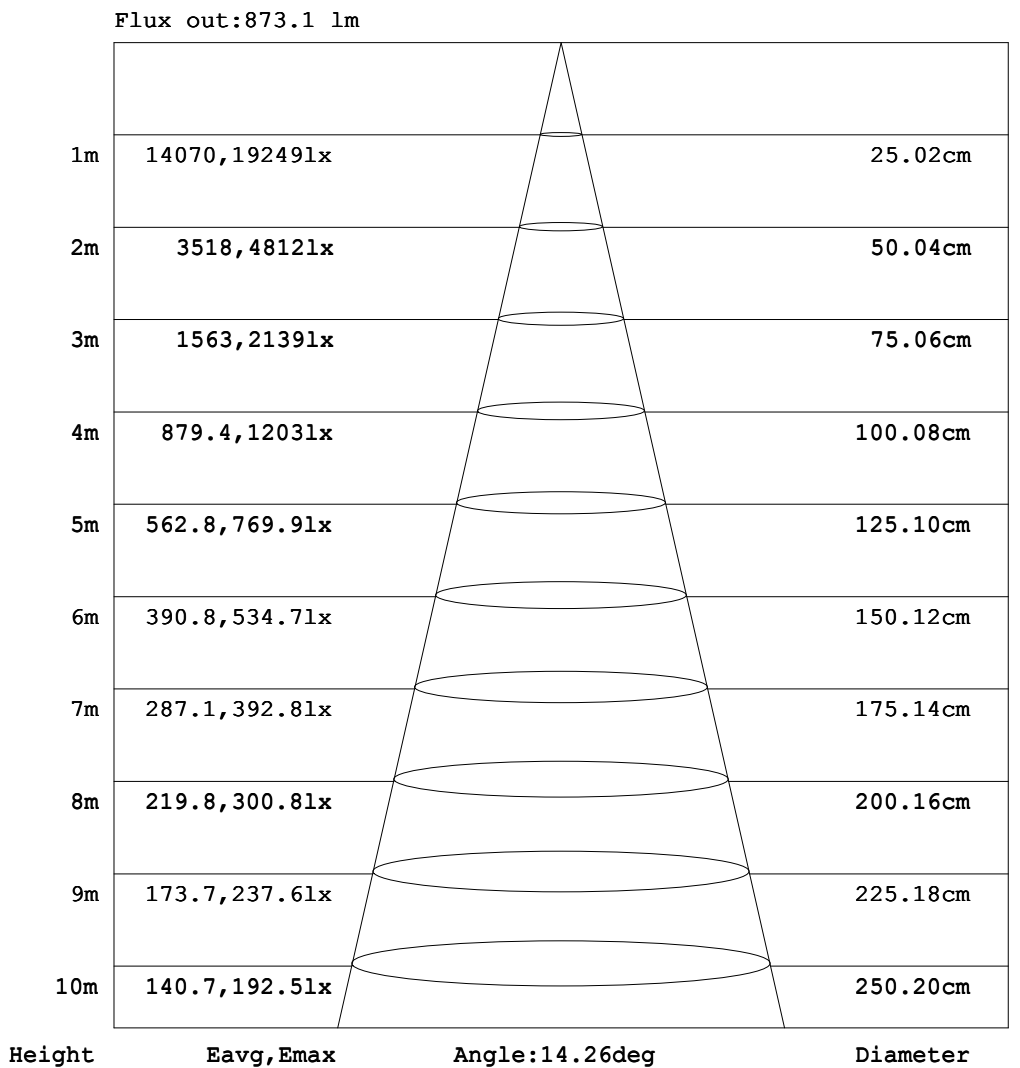


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-06-26

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:224.9V I:0.1300A P:28.10W PF:0.9560 Freq:50.00Hz Lamp Flux:964.678x1 lm		
NAME: ALT85F-28G40-Z1-Min	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:54	Shielding Angle:



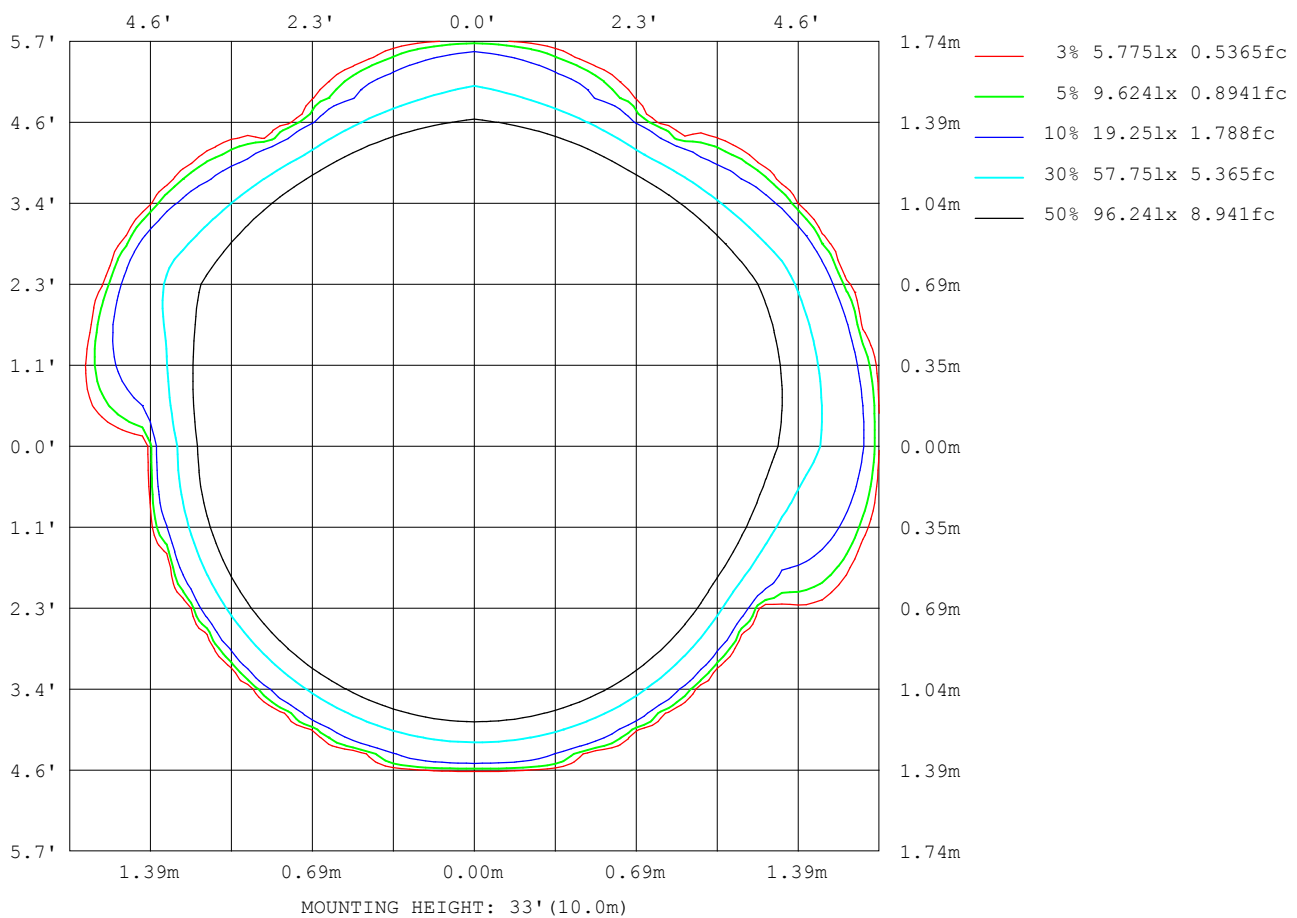
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-06-26

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:0.1300A P:28.10W PF:0.9560 Freq:50.00Hz Lamp Flux:964.678x1 lm		
NAME: ALT85F-28G40-Z1-Min	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:54	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:ZR
 Test Date:2021-06-26

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:0.1300A P:28.10W PF:0.9560 Freq:50.00Hz Lamp Flux:964.678x1 lm		
NAME: ALT85F-28G40-Z1-Min	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:54	Shielding Angle:

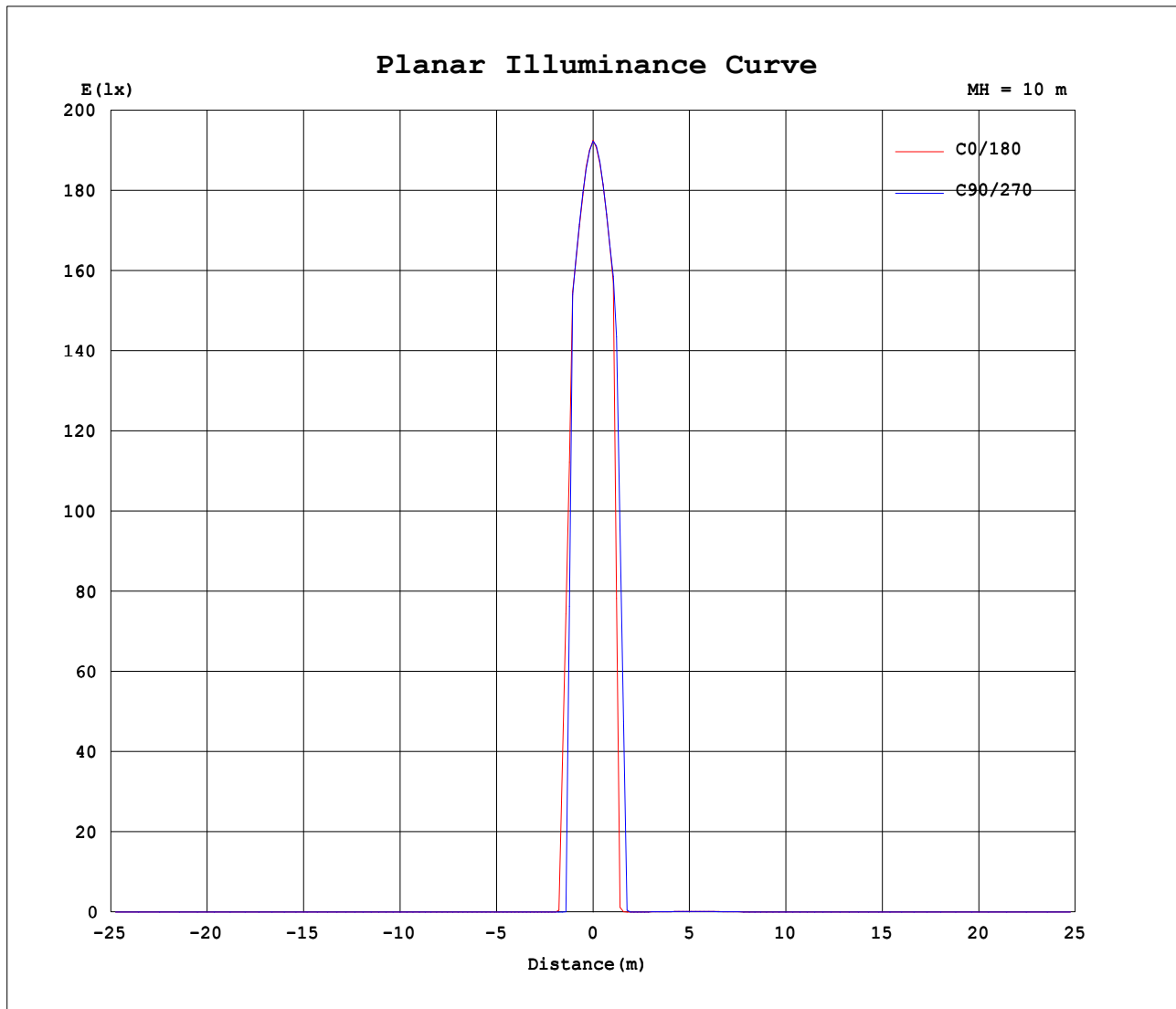
AvgL	cd/m2
L_0~180 (65) av	3195
L_0~180 (75) av	3554
L_0~180 (85) av	8260
L_90~270 (65) av	3088
L_90~270 (75) av	3524
L_90~270 (85) av	8286
L_45 (65) av	3138
L_45 (75) av	3551
L_45 (85) av	8277

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-06-26

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:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: ZR
Test Date: 2021-06-26

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:

```

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:

```