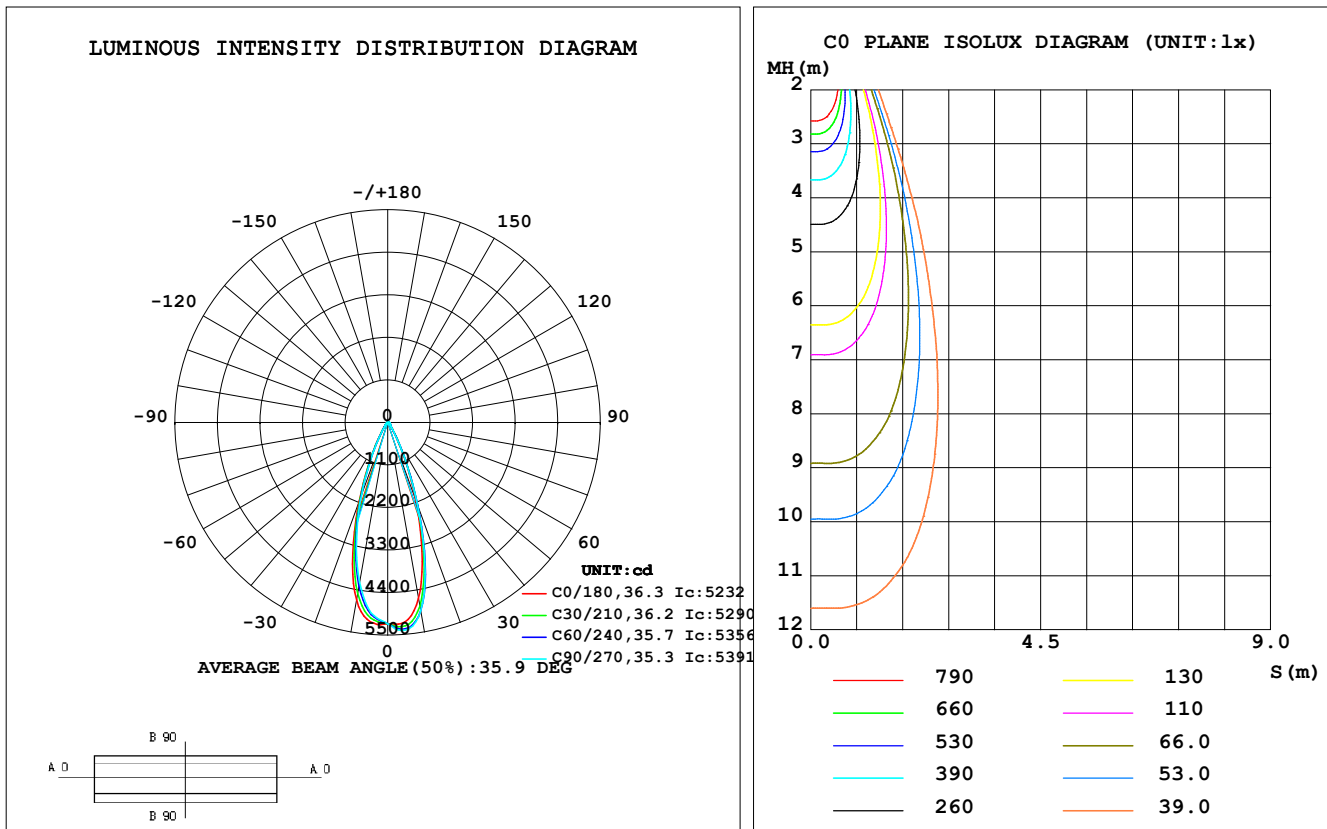


## LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:225.6V I:0.1240A P:26.80W PF:0.9580 Freq:50.00Hz Lamp Flux:2216.8x1 lm		
NAME: TL44-28W-930-B-36-L	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:99	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 82.72 lm/W			
MODEL	4000K CRI90	I <sub>max</sub> (cd)	5402	S/MH(C0/180)	0.58
NOMINAL POWER(W)	28	LOR(%)	100.0	S/MH(C90/270)	0.56
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	2216.8	η UP,DN(C0-180)	0.0,52.4
NOMINAL FLUX(lm)	2216.8	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,47.6
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	225.6	η down(%)	100.0	CIBSE SHR MAX	0.60



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: WuXing  
Test Date: 2018-11-12

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.265  
Humidity: 65.0%  
Test Distance: 7.240m [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	4617	4929	4944	4906	4659	4362	4199	4311	0- 10	476.2	476.2	21.5, 21.5
20	2125	2319	2255	2260	2165	2002	1980	1974	10- 20	935.6	1412	63.7, 63.7
30	456.6	516.1	471.0	474.1	489.9	438.7	433.5	433.4	20- 30	510.2	1922	86.7, 86.7
40	122.2	131.5	131.3	129.5	126.0	116.3	110.6	112.6	30- 40	147.1	2069	93.3, 93.3
50	55.66	58.83	59.59	59.03	57.24	54.27	53.78	54.04	40- 50	63.31	2132	96.2, 96.2
60	35.73	36.45	36.58	36.69	36.28	35.49	36.04	35.88	50- 60	40.18	2173	98, 98
70	20.67	20.88	20.92	21.15	20.84	20.56	21.76	21.62	60- 70	28.00	2201	99.3, 99.3
80	5.186	5.272	5.227	5.167	5.094	4.631	4.830	4.646	70- 80	13.82	2214	99.9, 99.9
90	2.096	2.066	2.067	2.073	1.358	1.355	1.343	1.341	80- 90	2.419	2217	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): 2105.4 lm

%lum = 95.0%

%lamp = 95.0%

Conical surface Flux(120deg): 2172.6 lm

%lum = 98.0%

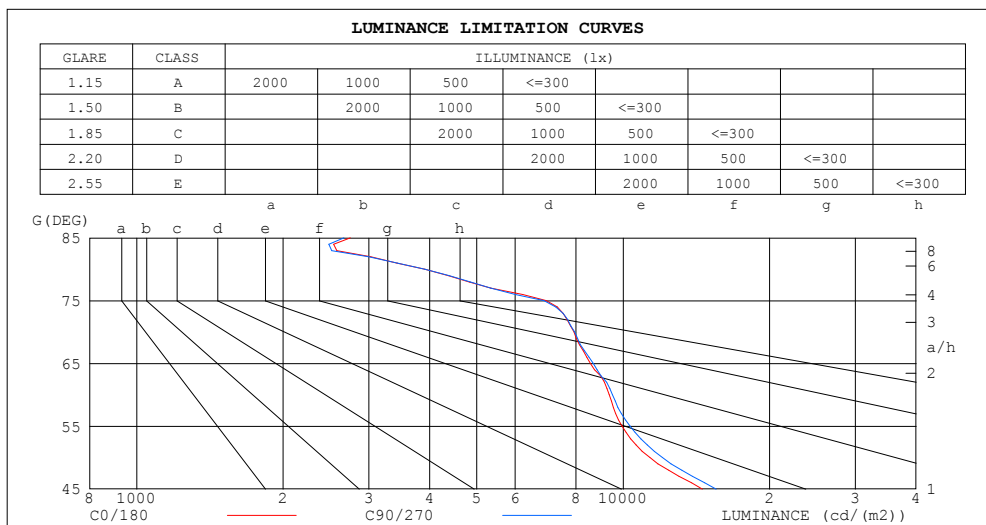
%lamp = 98.0%

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: WuXing  
 Test Date: 2018-11-12

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.265  
 Humidity: 65.0%  
 Test Distance: 7.240m [K=1.0000]  
 Remarks:

## LUMINANCE LIMITATION CURVES

Test:U:225.6V I:0.1240A P:26.80W PF:0.9580 Freq:50.00Hz Lamp Flux:2216.8x1 lm		
NAME: TL44-28W-930-B-36-L	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:99	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2747	2665
80	3914	3912
75	6950	6869
70	7921	7948
65	8564	8675
60	9366	9506
55	9944	10335
50	11350	12046
45	14559	15526

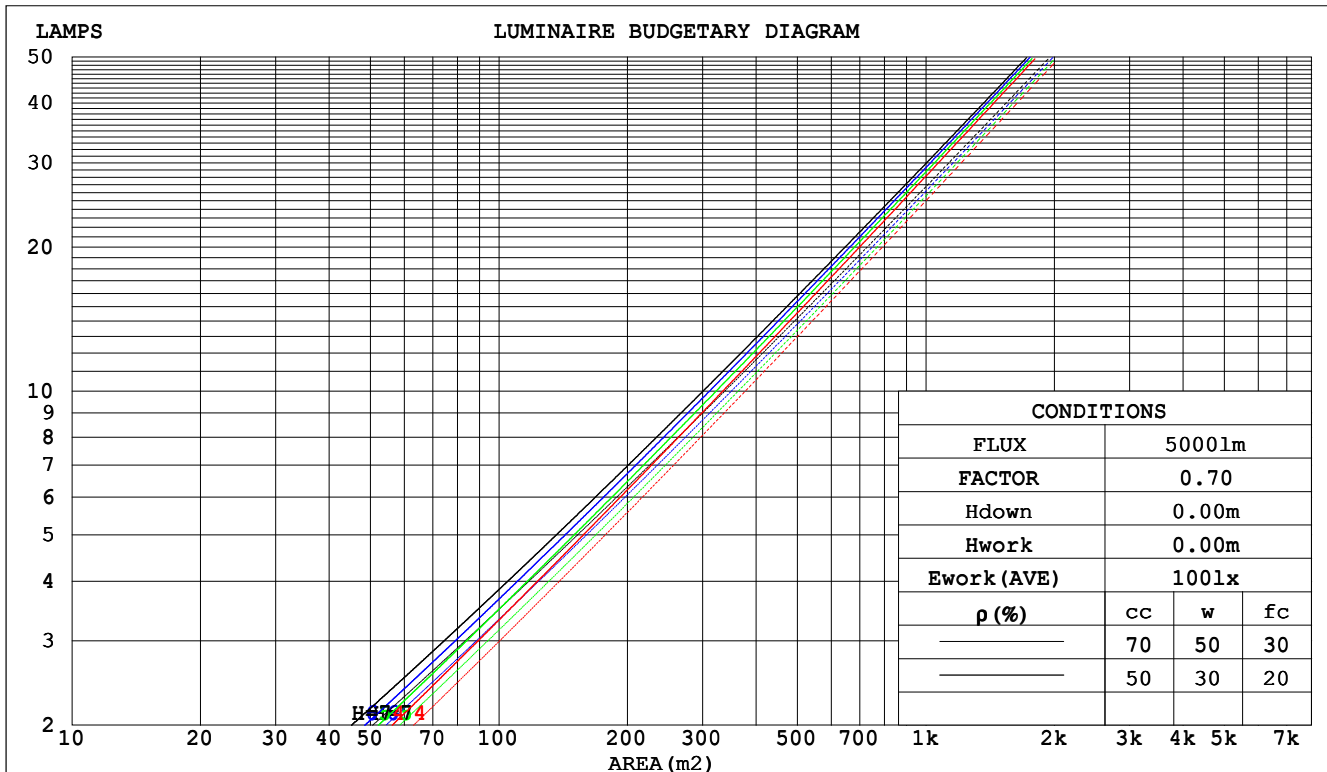
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:WuXing  
Test Date:2018-11-12

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.265  
Humidity:65.0%  
Test Distance:7.240m [K=1.0000]  
Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:225.6V I:0.1240A P:26.80W PF:0.9580 Freq:50.00Hz Lamp Flux:2216.8x1 lm		
NAME: TL44-28W-930-B-36-L	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:99	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	.00
1.0	1.12	1.09	1.07	1.09	1.07	1.06	1.05	1.04	1.02	1.02	1.00	.99	.98	.97	.96	.95
2.0	1.05	1.01	.98	1.03	1.00	.97	1.00	.97	.95	.97	.95	.93	.94	.93	.91	.90
3.0	.99	.95	.91	.98	.94	.91	.95	.92	.89	.93	.90	.88	.91	.88	.87	.85
4.0	.94	.89	.86	.93	.89	.85	.91	.87	.84	.89	.86	.83	.87	.85	.82	.81
5.0	.90	.85	.81	.89	.84	.81	.87	.83	.80	.85	.82	.79	.84	.81	.79	.77
6.0	.85	.80	.77	.85	.80	.77	.83	.79	.76	.82	.78	.76	.81	.78	.75	.74
7.0	.82	.77	.73	.81	.76	.73	.80	.76	.73	.79	.75	.72	.78	.74	.72	.71
8.0	.78	.73	.70	.78	.73	.70	.77	.73	.70	.76	.72	.69	.75	.72	.69	.68
9.0	.75	.70	.67	.75	.70	.67	.74	.70	.67	.73	.69	.67	.72	.69	.66	.65
10.0	.72	.68	.64	.72	.67	.64	.71	.67	.64	.71	.67	.64	.70	.66	.64	.63



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:WuXing  
 Test Date:2018-11-12

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.265  
 Humidity:65.0%  
 Test Distance:7.240m [K=1.0000]  
 Remarks:

### WEC AND CCEC

Test:U:225.6V I:0.1240A P:26.80W PF:0.9580 Freq:50.00Hz Lamp Flux:2216.8x1 lm					
NAME: TL44-28W-930-B-36-L			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:99		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	.162	.092	.029	.155	.089	.028	.143	.082	.026	.131	.076	.024	.121	.070	.023	
2.0	.152	.083	.026	.147	.081	.025	.136	.076	.024	.127	.071	.022	.118	.067	.021	
3.0	.143	.076	.023	.138	.074	.022	.129	.070	.021	.121	.066	.020	.114	.063	.019	
4.0	.134	.070	.021	.130	.068	.020	.123	.065	.019	.116	.062	.019	.109	.059	.018	
5.0	.127	.065	.019	.123	.063	.018	.117	.061	.018	.111	.059	.017	.105	.056	.017	
6.0	.120	.060	.017	.117	.059	.017	.112	.057	.017	.106	.055	.016	.101	.053	.016	
7.0	.114	.056	.016	.112	.056	.016	.107	.054	.016	.102	.052	.015	.098	.051	.015	
8.0	.109	.053	.015	.107	.052	.015	.102	.051	.015	.098	.050	.014	.094	.048	.014	
9.0	.104	.050	.014	.102	.050	.014	.098	.049	.014	.094	.047	.014	.091	.046	.013	
10.0	.100	.048	.013	.098	.047	.013	.094	.046	.013	.091	.045	.013	.088	.044	.013	

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	.170	.157	.146	.146	.135	.126	.100	.093	.087	.057	.054	.051	.018	.017	.016	
2.0	.154	.133	.115	.132	.114	.099	.090	.079	.069	.052	.046	.041	.017	.015	.013	
3.0	.140	.113	.092	.120	.098	.080	.082	.068	.056	.048	.040	.033	.015	.013	.011	
4.0	.129	.098	.075	.110	.085	.066	.076	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.119	.086	.063	.102	.075	.054	.070	.052	.038	.041	.031	.023	.013	.010	.008	
6.0	.111	.077	.053	.095	.067	.046	.066	.047	.032	.038	.027	.019	.012	.009	.006	
7.0	.103	.069	.045	.089	.060	.039	.062	.042	.028	.036	.025	.016	.012	.008	.005	
8.0	.097	.062	.038	.084	.054	.034	.058	.038	.024	.034	.022	.014	.011	.007	.005	
9.0	.092	.057	.033	.079	.049	.029	.055	.035	.021	.032	.021	.012	.010	.007	.004	
10.0	.087	.052	.029	.075	.046	.026	.052	.032	.018	.030	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:WuXing  
Test Date:2018-11-12

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.265  
Humidity:65.0%  
Test Distance:7.240m [K=1.0000]  
Remarks:

UGR(Unified Glare Rating) Table

Test:U:225.6V I:0.1240A P:26.80W PF:0.9580 Freq:50.00Hz Lamp Flux:2216.8x1 lm											
NAME: TL44-28W-930-B-36-L					TYPE:			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:			
MFR.:					SUR.:99			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		12.5	13.3	12.7	13.4	13.6	12.6	13.4	12.8	13.6	13.7
	3H	13.2	14.0	13.5	14.2	14.4	13.3	14.1	13.6	14.3	14.5
	4H	13.6	14.3	13.8	14.5	14.7	13.7	14.4	13.9	14.6	14.8
	6H	13.7	14.3	13.9	14.6	14.8	13.7	14.4	14.0	14.6	14.9
	8H	13.6	14.3	13.9	14.5	14.8	13.7	14.4	14.0	14.6	14.9
	12H	13.6	14.2	13.9	14.5	14.8	13.7	14.3	14.0	14.6	14.8
4H	2H	12.8	13.5	13.0	13.7	13.9	12.8	13.6	13.1	13.8	14.0
	3H	13.7	14.3	14.0	14.6	14.9	13.8	14.4	14.1	14.7	14.9
	4H	14.1	14.7	14.5	15.0	15.3	14.2	14.8	14.5	15.1	15.4
	6H	14.3	14.8	14.6	15.1	15.4	14.3	14.8	14.7	15.1	15.5
	8H	14.3	14.7	14.6	15.1	15.4	14.3	14.8	14.7	15.1	15.5
	12H	14.2	14.6	14.6	15.0	15.4	14.3	14.7	14.7	15.1	15.5
8H	4H	14.2	14.7	14.6	15.0	15.4	14.3	14.7	14.7	15.1	15.4
	6H	14.4	14.8	14.8	15.1	15.6	14.4	14.8	14.9	15.2	15.6
	8H	14.4	14.7	14.8	15.1	15.6	14.4	14.8	14.9	15.2	15.6
	12H	14.4	14.7	14.8	15.1	15.6	14.4	14.7	14.9	15.1	15.6
12H	4H	14.2	14.6	14.6	15.0	15.3	14.2	14.6	14.6	15.0	15.4
	6H	14.3	14.7	14.8	15.1	15.5	14.4	14.7	14.8	15.2	15.6
	8H	14.4	14.6	14.8	15.1	15.6	14.4	14.7	14.9	15.1	15.6
Variations with the observer position at spacings:											
S = 1.0H	+ 0.7 / - 0.9					+ 0.7 / - 0.9					
1.5H	+ 1.3 / - 0.8					+ 1.4 / - 0.7					
2.0H	+ 0.9 / - 0.6					+ 1.0 / - 0.7					

CIE Pub.117, 2217 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 2.8$ )

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:WuXing  
Test Date:2018-11-12

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.265  
Humidity:65.0%  
Test Distance:7.240m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

Test:U:225.6V I:0.1240A P:26.80W PF:0.9580 Freq:50.00Hz Lamp Flux:2216.8x1 lm		
NAME: TL44-28W-930-B-36-L	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:99	Shielding Angle:

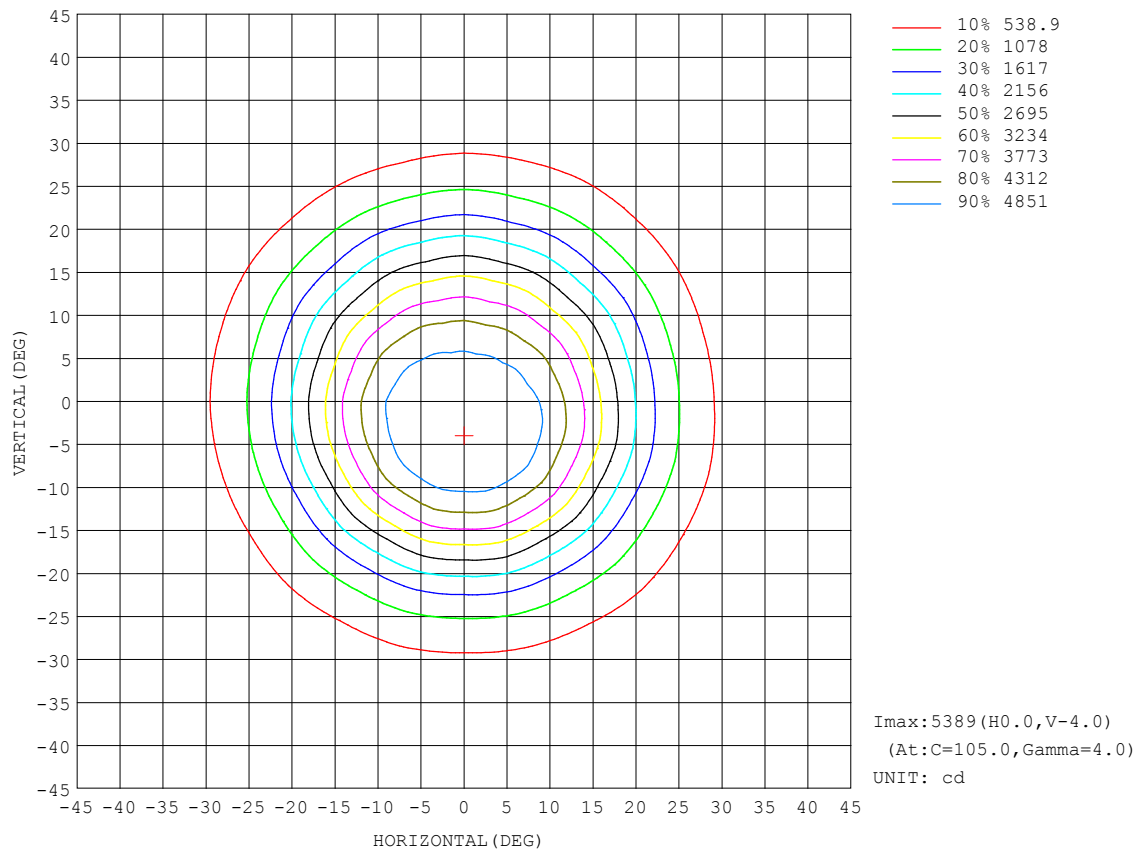
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	81	77	87	81	77	86	81	77	74
0.80	95	89	85	94	89	85	93	88	85	81
1.00	99	93	90	98	93	90	97	93	89	85
1.25	103	98	94	102	97	94	100	96	93	89
1.50	106	101	98	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	98
5.00	115	113	111	113	111	109	109	107	106	99
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:25.3DEG  
Operators:WuXing  
Test Date:2018-11-12

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.265  
Humidity:65.0%  
Test Distance:7.240m [K=1.0000]  
Remarks:

## ISOCANDELA DIAGRAM

Test:U:225.6V I:0.1240A P:26.80W PF:0.9580 Freq:50.00Hz Lamp Flux:2216.8x1 lm		
NAME: TL44-28W-930-B-36-L	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:99	Shielding Angle:



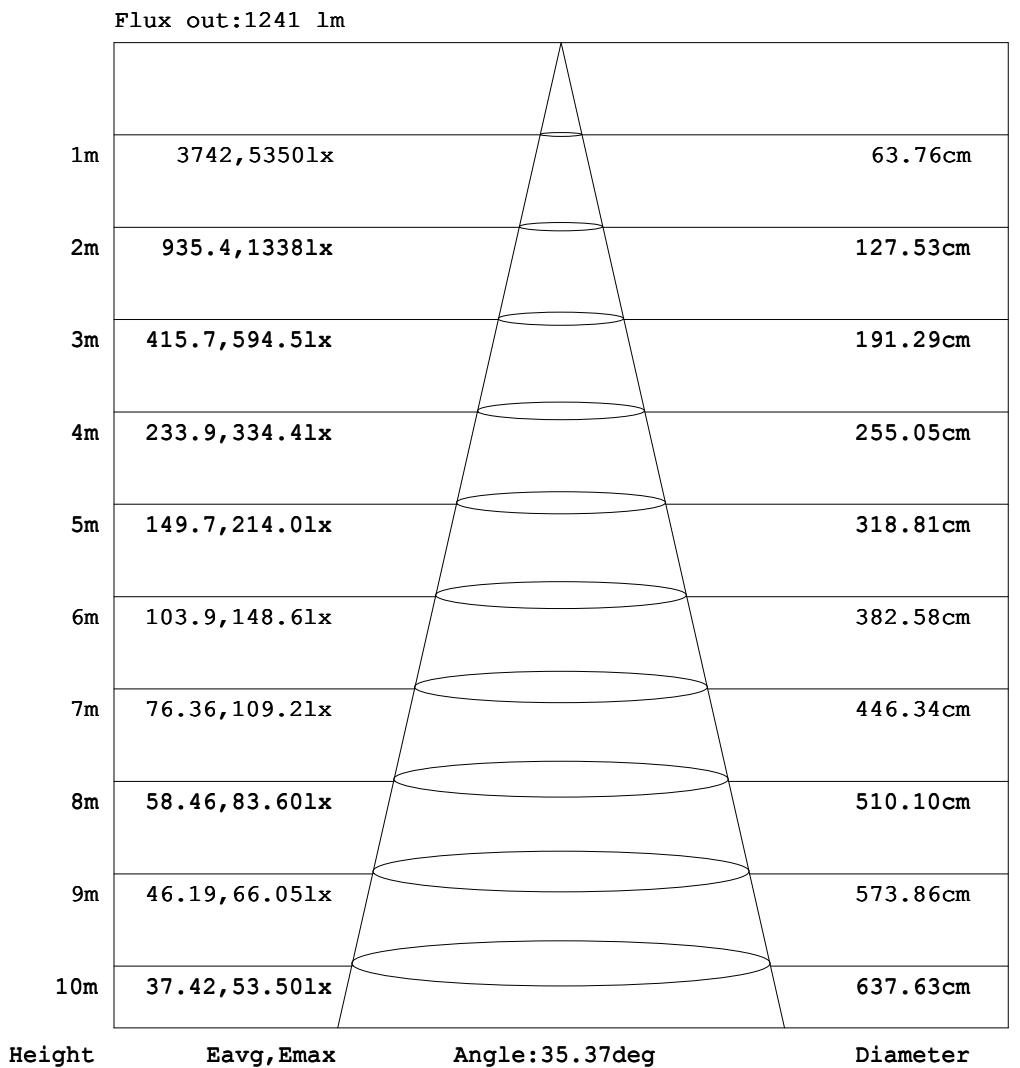
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:WuXing  
Test Date:2018-11-12

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.265  
Humidity:65.0%  
Test Distance:7.240m [K=1.0000]  
Remarks:



### AAI Figure

Test:U:225.6V I:0.1240A P:26.80W PF:0.9580 Freq:50.00Hz Lamp Flux:2216.8x1 lm		
NAME: TL44-28W-930-B-36-L	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:99	Shielding Angle:



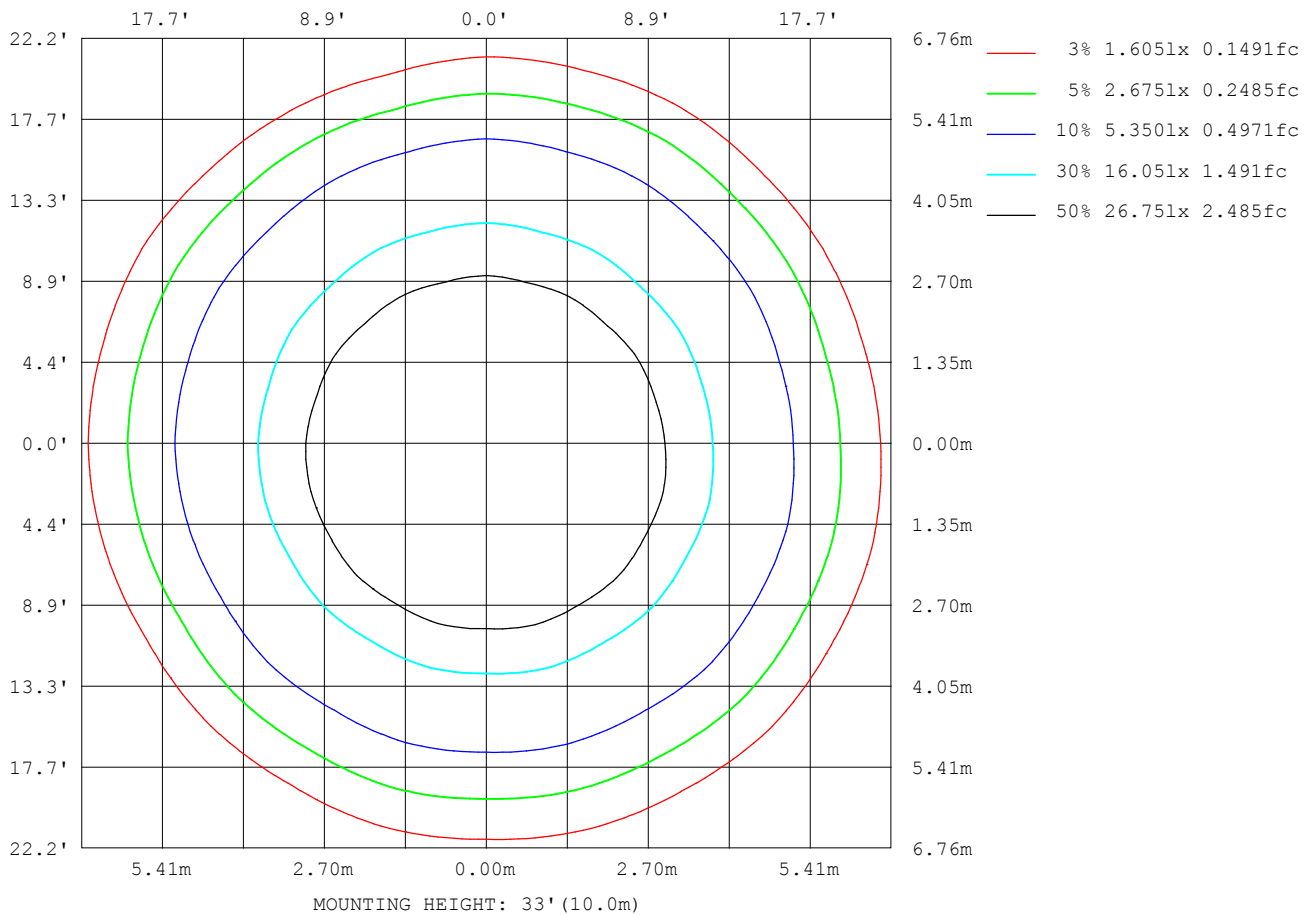
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:WuXing  
Test Date:2018-11-12

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.265  
Humidity:65.0%  
Test Distance:7.240m [K=1.0000]  
Remarks:

### ISOLUX DIAGRAM

Test:U:225.6V I:0.1240A P:26.80W PF:0.9580 Freq:50.00Hz Lamp Flux:2216.8x1 lm		
NAME: TL44-28W-930-B-36-L	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:99	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:WuXing  
Test Date:2018-11-12

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.265  
Humidity:65.0%  
Test Distance:7.240m [K=1.0000]  
Remarks:

## LED Avg.L Report

Test:U:225.6V I:0.1240A P:26.80W PF:0.9580 Freq:50.00Hz Lamp Flux:2216.8x1 lm		
NAME: TL44-28W-930-B-36-L	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:99	Shielding Angle:

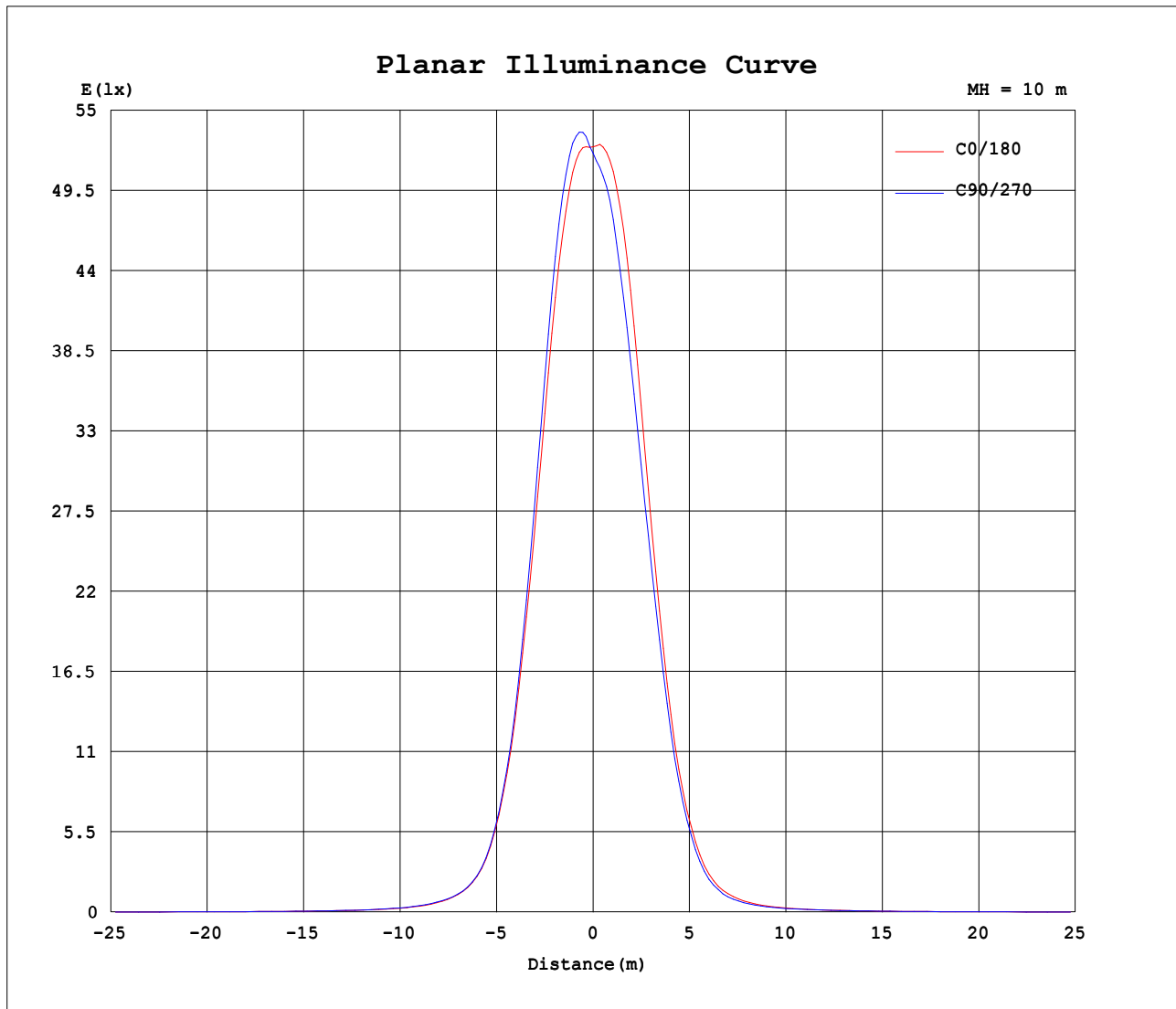
AvgL	cd/m2
L_0~180 (65) av	8573
L_0~180 (75) av	6950
L_0~180 (85) av	2340
L_90~270 (65) av	8712
L_90~270 (75) av	7011
L_90~270 (85) av	2299
L_45 (65) av	8596
L_45 (75) av	6726
L_45 (85) av	2312

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:WuXing  
 Test Date:2018-11-12

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.265  
 Humidity:65.0%  
 Test Distance:7.240m [K=1.0000]  
 Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: WuXing  
Test Date: 2018-11-12

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.265  
Humidity: 65.0%  
Test Distance: 7.240m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.265
Humidity:65.0%
Test Distance:7.240m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.265
Humidity:65.0%
Test Distance:7.240m [K=1.0000]
Remarks:

```