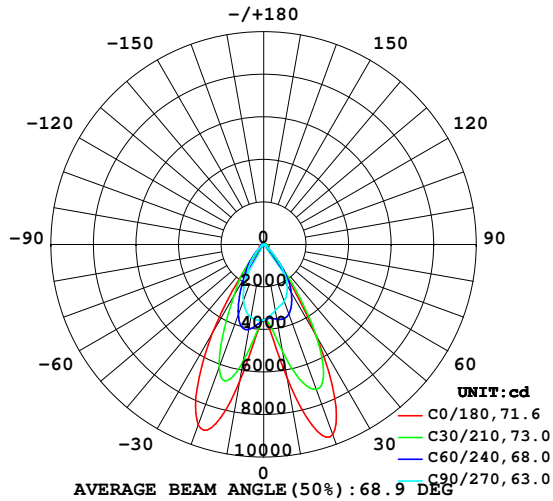


LUMINAIRE PHOTOMETRIC TEST REPORT

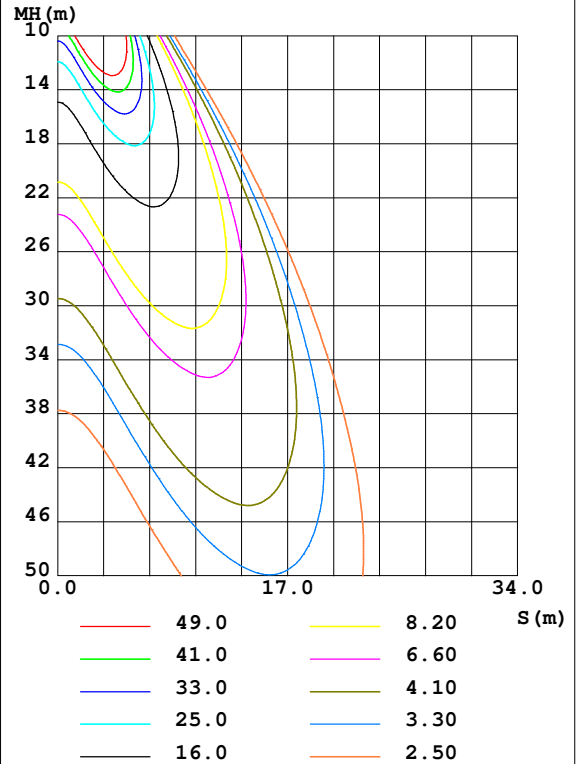
Test:U:230.37V I:0.1996A P:44.262W PF:0.9628 Freq:50.01Hz Lamp Flux:6039.32x1 lm		
NAME: TCE	TYPE:LED	WEIGHT:3.2kg
SPEC.:45W	DIM.: 68mmX1430mmX78mm	SERIAL No.:
MFR.: LITPA AYDINLATMA	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 136.45 lm/W			
MODEL	TCE	I _{max} (cd)	9587	S/MH (C0/180)	1.04
NOMINAL POWER(W)	45W	LOR (%)	100.0	S/MH (C90/270)	0.87
RATED VOLTAGE(V)	220.0	TOTAL FLUX (lm)	6039.3	η UP, DN (C0-180)	0.0, 53.7
NOMINAL FLUX (lm)	6039.32	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 46.3
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	0.50

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 20DEG
Operators: LITPA
Test Date: 18 April 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity: 65.0%
Test Distance: 5.680m [K=1.0000]
Remarks: TCE-45W-VS
OT-60

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	6364	4229	3158	4832	6532	4759	3476	4520	0- 10	397.6	397.6	6.58, 6.58
20	9500	4936	2837	5461	9015	4624	2806	4377	10- 20	1524	1922	31.8, 31.8
30	4813	3599	2225	3578	4844	2336	1593	2145	20- 30	1997	3919	64.9, 64.9
40	667.7	1206	1187	1083	735.2	1011	770.0	955.2	30- 40	1187	5106	84.5, 84.5
50	251.1	250.3	306.6	256.0	269.6	234.1	232.3	214.2	40- 50	381.4	5487	90.9, 90.9
60	191.5	162.5	121.3	165.0	199.5	174.9	123.2	170.7	50- 60	175.0	5662	93.8, 93.8
70	213.0	138.8	78.40	142.1	217.3	184.3	94.70	185.4	60- 70	159.2	5821	96.4, 96.4
80	139.0	99.68	30.71	106.7	153.5	130.5	47.02	130.9	70- 80	144.9	5966	98.8, 98.8
90	60.55	34.12	3.028	34.95	68.84	37.59	3.949	37.12	80- 90	73.15	6039	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): 5352.1 lm

%lum = 88.6%

%lamp = 88.6%

Conical surface Flux(120deg): 5662.1 lm

%lum = 93.8%

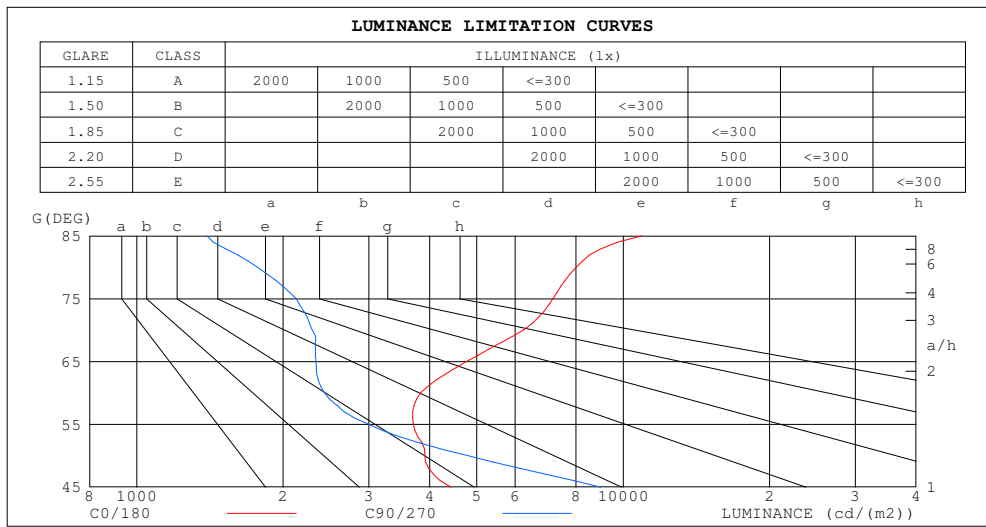
%lamp = 93.8%

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 20DEG
 Operators: LITPA
 Test Date: 18 April 2019

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.400
 Humidity: 65.0%
 Test Distance: 5.680m [K=1.0000]
 Remarks: TCE-45W-VS
 OT-60

LUMINANCE LIMITATION CURVES

Test:U:230.37V I:0.1996A P:44.262W PF:0.9628 Freq:50.01Hz Lamp Flux:6039.32x1 lm		
NAME: TCE	TYPE:LED	WEIGHT:3.2kg
SPEC.:45W	DIM.: 68mmX1430mmX78mm	SERIAL No.:
MFR.: LITPA AYDINLATMA	SUR.:	Shielding Angle:



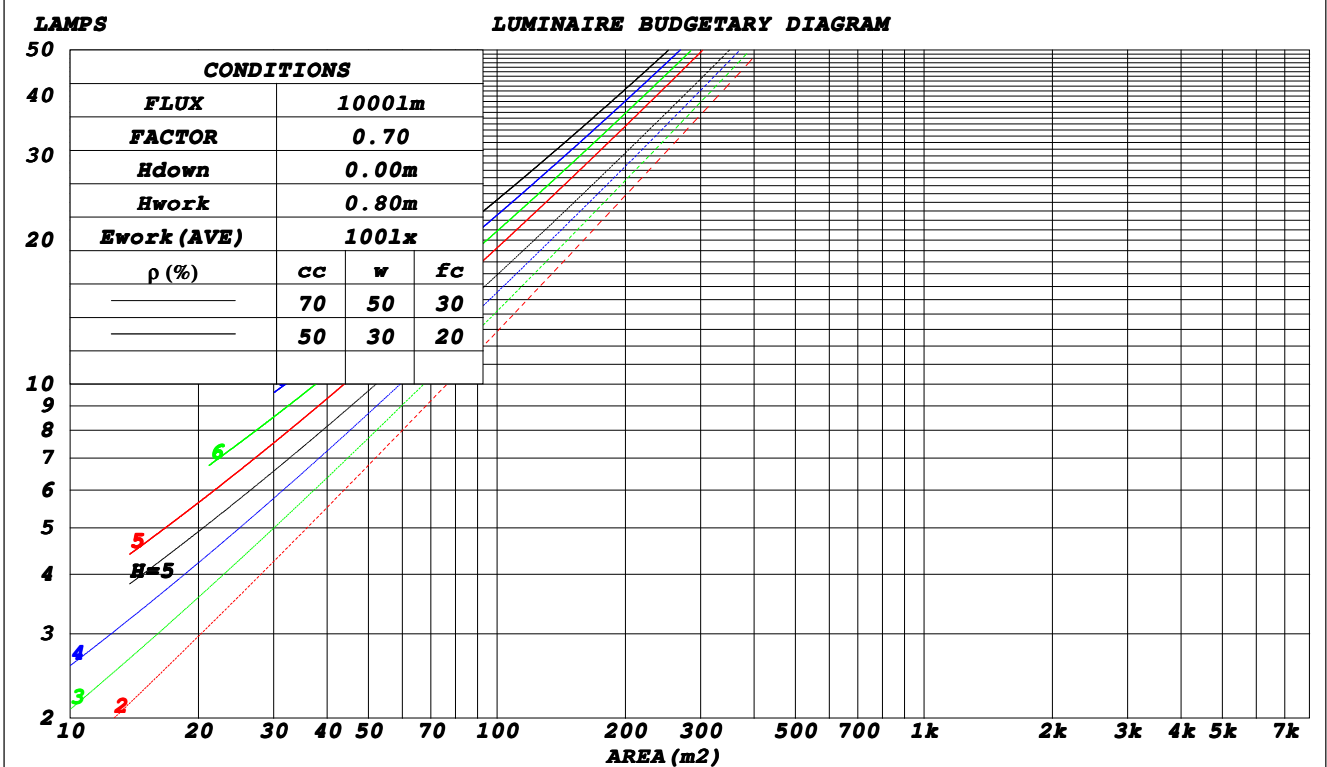
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 20DEG
Operators: LITPA
Test Date: 18 April 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity: 65.0%
Test Distance: 5.680m [K=1.0000]
Remarks: TCE-45W-VS
OT-60

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.37V I:0.1996A P:44.262W PF:0.9628 Freq:50.01Hz Lamp Flux:6039.32x1 lm		
NAME: TCE	TYPE:LED	WEIGHT:3.2kg
SPEC.:45W	DIM.: 68mmX1430mmX78mm	SERIAL No.:
MFR.: LITPA AYDINLATMA	SUR.:	Shielding Angle:

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{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	1.09	1.06	1.03	1.07	1.04	1.01	1.02	1.00	.98	.99	.97	.95	.95	.94	.93	.91
2.0	.90	.95	.91	.98	.94	.90	.95	.91	.88	.92	.89	.86	.89	.87	.84	.83
3.0	.92	.86	.82	.91	.85	.81	.88	.84	.80	.85	.82	.79	.83	.80	.77	.76
4.0	.85	.79	.74	.84	.78	.74	.82	.77	.73	.80	.76	.72	.78	.74	.71	.70
5.0	.79	.73	.68	.78	.72	.68	.77	.71	.67	.75	.70	.66	.73	.69	.66	.64
6.0	.74	.67	.63	.73	.67	.62	.72	.66	.62	.70	.65	.61	.69	.64	.61	.59
7.0	.69	.63	.58	.68	.62	.58	.67	.62	.57	.66	.61	.57	.65	.60	.57	.55
8.0	.65	.58	.54	.64	.58	.54	.63	.57	.53	.62	.57	.53	.61	.56	.53	.51
9.0	.61	.54	.50	.60	.54	.50	.59	.54	.50	.58	.53	.50	.58	.53	.49	.48
10.0	.57	.51	.47	.57	.51	.47	.56	.50	.47	.55	.50	.47	.54	.50	.46	.45



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 20DEG
Operators: LITPA
Test Date: 18 April 2019

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity: 65.0%
Test Distance: 5.680m [K=1.0000]
Remarks: TCE-45W-VS
OT-60

WEC AND CCEC

Test:U:230.37V I:0.1996A P:44.262W PF:0.9628 Freq:50.01Hz Lamp Flux:6039.32x1 lm		
NAME: TCE	TYPE:LED	WEIGHT:3.2kg
SPEC.:45W	DIM.: 68mmX1430mmX78mm	SERIAL No.:
MFR.: LITPA AYDINLATMA	SUR.:	Shielding Angle:

ρ_{cc}	80%			70%			50%			30%			10%			0	
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρ_{fc}	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.216	.123	.039	.209	.119	.038	.196	.113	.036	.185	.106	.034	.174	.101	.032		
2.0	.201	.110	.034	.195	.108	.033	.185	.103	.032	.174	.098	.031	.165	.093	.029		
3.0	.188	.100	.030	.183	.098	.030	.174	.094	.029	.165	.090	.028	.157	.087	.027		
4.0	.176	.092	.027	.172	.090	.027	.164	.087	.026	.157	.084	.025	.149	.081	.025		
5.0	.166	.085	.025	.163	.083	.024	.155	.081	.024	.149	.078	.023	.143	.076	.023		
6.0	.157	.079	.023	.154	.078	.022	.148	.076	.022	.142	.074	.022	.136	.072	.021		
7.0	.149	.074	.021	.146	.073	.021	.141	.071	.020	.135	.069	.020	.130	.068	.020		
8.0	.142	.069	.019	.139	.069	.019	.134	.067	.019	.130	.066	.019	.125	.064	.019		
9.0	.135	.065	.018	.133	.065	.018	.128	.063	.018	.124	.062	.018	.120	.061	.018		
10.0	.129	.062	.017	.127	.061	.017	.123	.060	.017	.119	.059	.017	.115	.058	.017		

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{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	.174	.157	.142	.149	.135	.122	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.160	.132	.109	.137	.114	.094	.094	.079	.066	.054	.046	.039	.017	.015	.013	
3.0	.149	.114	.086	.127	.098	.074	.088	.068	.052	.051	.040	.031	.016	.013	.010	
4.0	.139	.099	.069	.119	.086	.060	.082	.060	.042	.047	.035	.025	.015	.011	.008	
5.0	.131	.088	.057	.112	.076	.049	.077	.053	.035	.045	.031	.021	.014	.010	.007	
6.0	.123	.079	.047	.106	.068	.041	.073	.048	.029	.042	.028	.017	.014	.009	.006	
7.0	.117	.072	.040	.100	.062	.035	.069	.043	.025	.040	.026	.015	.013	.008	.005	
8.0	.111	.065	.034	.095	.057	.030	.066	.040	.021	.038	.024	.013	.012	.008	.004	
9.0	.106	.060	.030	.091	.052	.026	.063	.037	.018	.037	.022	.011	.012	.007	.004	
10.0	.101	.056	.026	.087	.049	.023	.060	.034	.016	.035	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:20DEG
Operators:LITPA
Test Date:18 April 2019

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:5.680m [K=1.0000]
Remarks: TCE-45W-VS
OT-60

UGR(Unified Glare Rating) Table

Test:U:230.37V I:0.1996A P:44.262W PF:0.9628 Freq:50.01Hz Lamp Flux:6039.32x1 lm		
NAME: TCE	TYPE:LED	WEIGHT:3.2kg
SPEC.:45W	DIM.: 68mmX1430mmX78mm	SERIAL No.:
MFR.: LITPA AYDINLATMA	SUR.:	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	16.9	18.0	17.2	18.2	18.4	15.6	16.7	15.8	16.8	17.0
3H	17.9	18.8	18.1	19.1	19.3	15.8	16.8	16.1	17.0	17.3
4H	18.7	19.6	18.9	19.8	20.0	16.0	16.9	16.3	17.2	17.4
6H	19.5	20.4	19.8	20.6	20.9	16.1	17.0	16.4	17.2	17.5
8H	19.9	20.7	20.2	21.0	21.2	16.1	17.0	16.4	17.2	17.5
12H	20.3	21.1	20.6	21.3	21.6	16.1	16.9	16.4	17.2	17.5
4H 2H	16.9	17.9	17.2	18.1	18.3	15.7	16.6	15.9	16.8	17.0
3H	18.1	19.0	18.5	19.2	19.5	16.2	17.0	16.5	17.3	17.6
4H	19.2	20.0	19.6	20.3	20.6	16.5	17.3	16.9	17.6	17.9
6H	20.3	21.0	20.7	21.3	21.7	16.8	17.5	17.2	17.8	18.1
8H	20.8	21.4	21.2	21.8	22.2	16.9	17.5	17.3	17.8	18.2
12H	21.3	21.9	21.8	22.3	22.7	16.9	17.5	17.3	17.8	18.2
8H 4H	19.4	20.0	19.8	20.4	20.7	17.0	17.6	17.4	18.0	18.4
6H	20.8	21.3	21.2	21.7	22.1	17.5	18.0	18.0	18.4	18.9
8H	21.5	21.9	21.9	22.4	22.8	17.7	18.2	18.2	18.6	19.0
12H	22.2	22.6	22.6	23.0	23.5	17.8	18.2	18.3	18.7	19.1
12H 4H	19.4	20.0	19.8	20.3	20.7	17.2	17.8	17.6	18.1	18.5
6H	20.8	21.3	21.3	21.7	22.2	17.8	18.3	18.3	18.7	19.1
8H	21.6	22.0	22.1	22.5	22.9	18.1	18.5	18.6	18.9	19.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.4					+ 1.1 / - 1.4				
1.5H	+ 0.9 / - 0.3					+ 2.2 / - 1.3				
2.0H	+ 0.1 / - 0.2					+ 1.9 / - 0.8				

CIE Pub.117, 6039 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 6.2$)

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:20DEG
Operators:LITPA
Test Date:18 April 2019

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:5.680m [K=1.0000]
Remarks: TCE-45W-VS
OT-60

UTILIZATION FACTORS TABLE

Test:U:230.37V I:0.1996A P:44.262W PF:0.9628 Freq:50.01Hz Lamp Flux:6039.32x1 lm		
NAME: TCE	TYPE:LED	WEIGHT:3.2kg
SPEC.:45W	DIM.: 68mmX1430mmX78mm	SERIAL No.:
MFR.: LITPA AYDINLATMA	SUR.:	Shielding Angle:

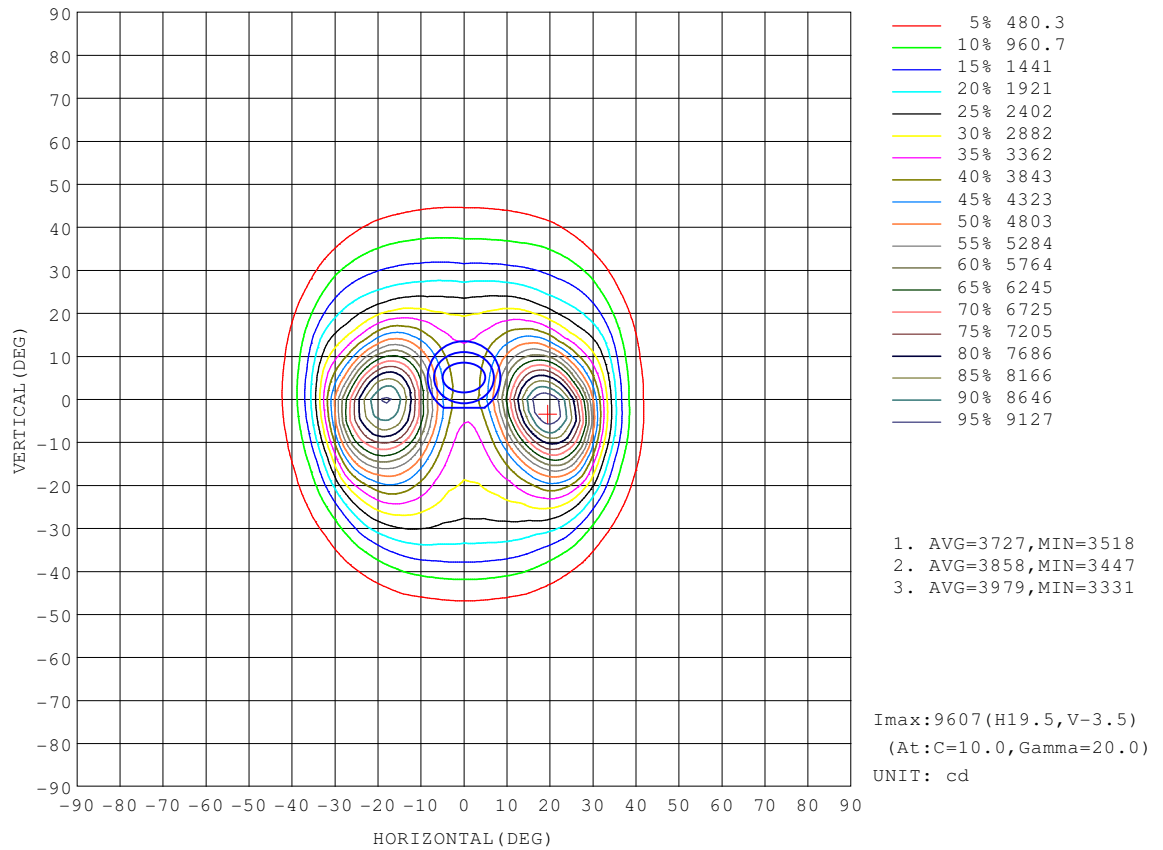
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	82	75	71	82	75	71	81	74	70	66
0.80	90	83	79	89	83	78	88	82	78	74
1.00	95	88	84	94	88	84	92	88	83	79
1.25	99	93	89	98	92	88	96	91	88	83
1.50	102	97	92	101	96	92	99	94	91	86
2.00	106	101	97	104	99	96	101	97	94	89
2.50	108	103	99	106	102	98	103	99	97	90
3.00	110	105	102	108	104	101	104	101	99	92
4.00	112	109	106	110	107	104	106	104	102	94
5.00	114	111	108	111	109	107	107	105	104	96
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 20DEG
 Operators: LITPA
 Test Date: 18 April 2019

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.400
 Humidity: 65.0%
 Test Distance: 5.680m [K=1.0000]
 Remarks: TCE-45W-VS
 OT-60

ISOCANDELA DIAGRAM

Test:U:230.37V I:0.1996A P:44.262W PF:0.9628 Freq:50.01Hz Lamp Flux:6039.32x1 lm		
NAME: TCE	TYPE:LED	WEIGHT:3.2kg
SPEC.:45W	DIM.: 68mmX1430mmX78mm	SERIAL No.:
MFR.: LITPA AYDINLATMA	SUR.:	Shielding Angle:

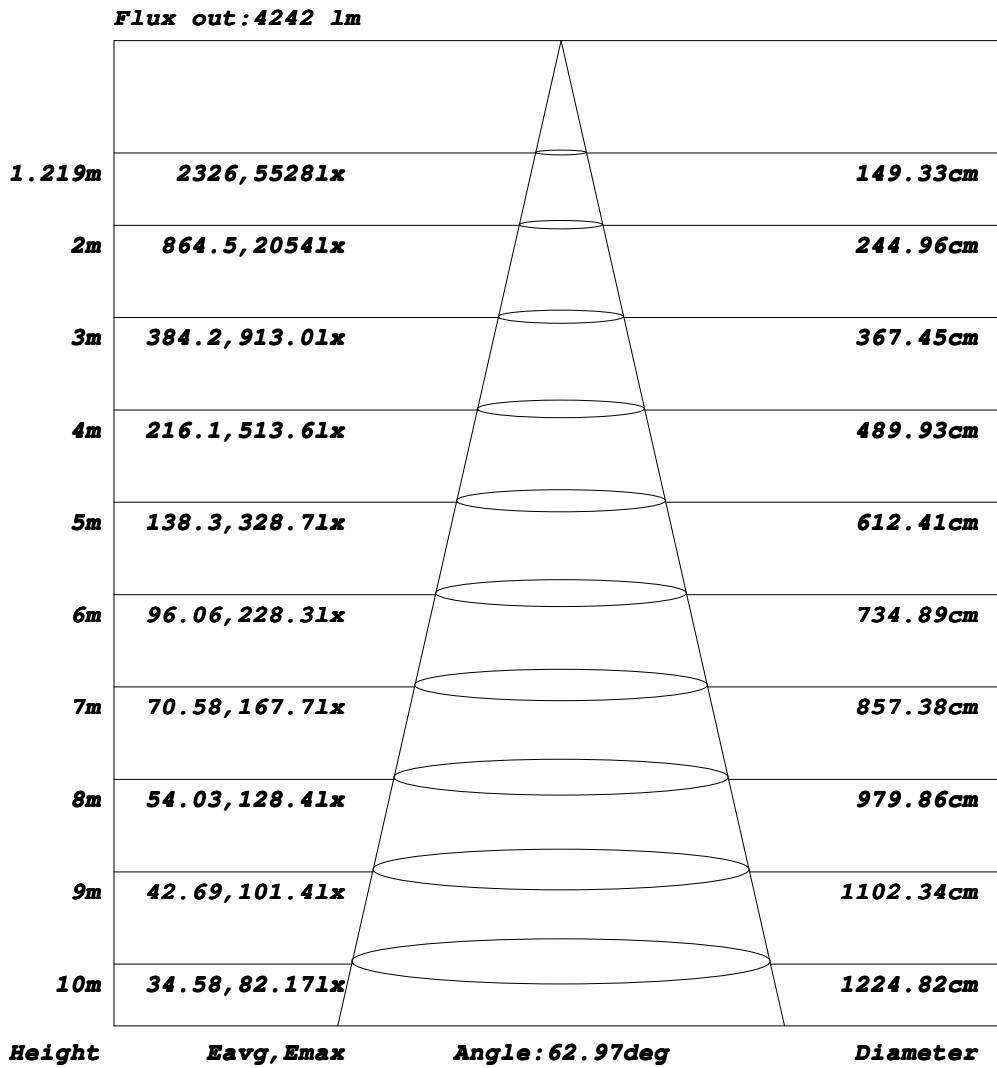


C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:20DEG
Operators:LITPA
Test Date:18 April 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:5.680m [K=1.0000]
Remarks: TCE-45W-VS
OT-60

AAI Figure

Test:U:230.37V I:0.1996A P:44.262W PF:0.9628 Freq:50.01Hz Lamp Flux:6039.32x1 lm		
NAME: TCE	TYPE:LED	WEIGHT:3.2kg
SPEC.:45W	DIM.: 68mmX1430mmX78mm	SERIAL No.:
MFR.: LITPA AYDINLATMA	SUR.:	Shielding Angle:



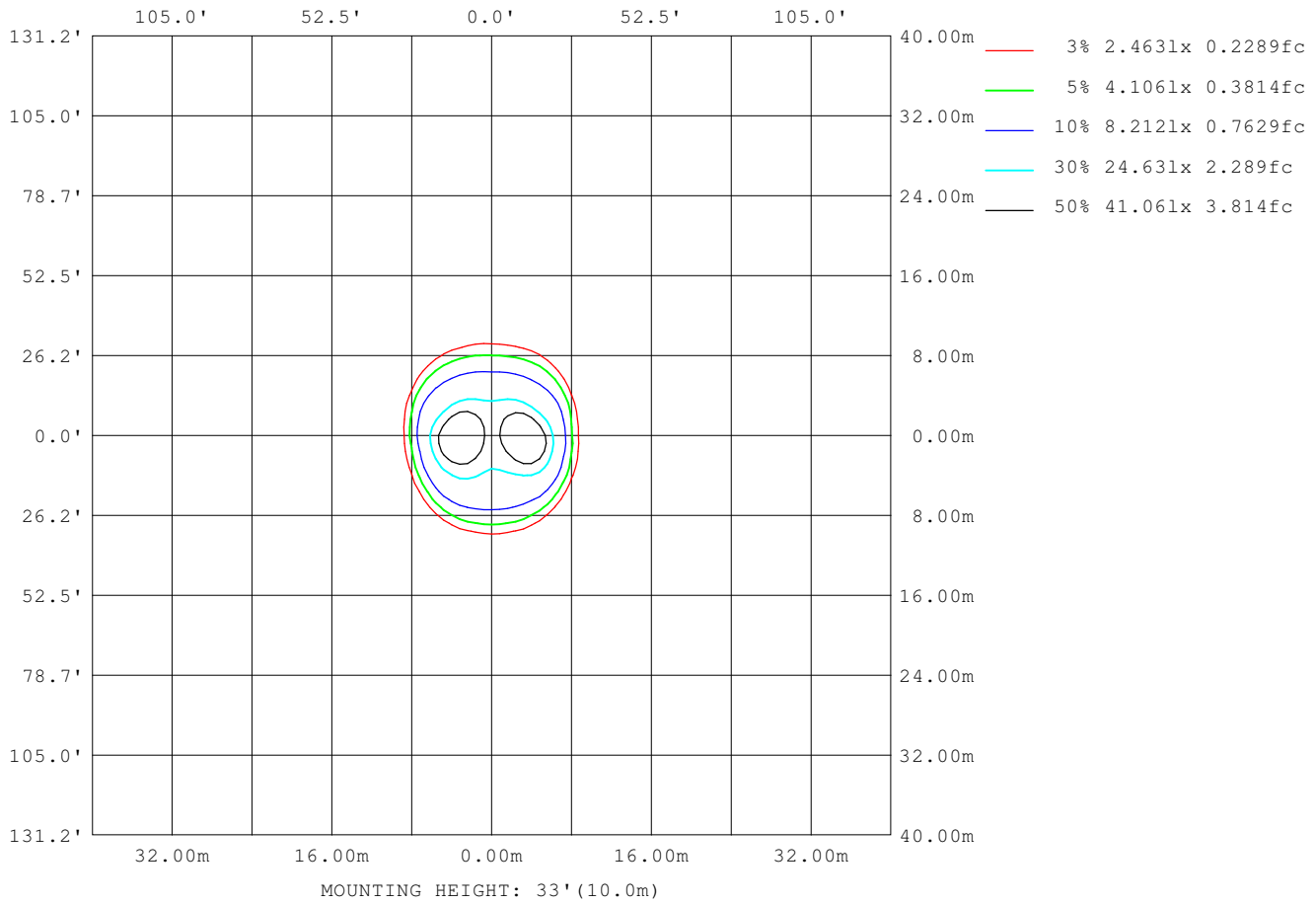
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 20DEG
Operators: LITPA
Test Date: 18 April 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity: 65.0%
Test Distance: 5.680m [K=1.0000]
Remarks: TCE-45W-VS
OT-60

ISOLUX DIAGRAM

Test:U:230.37V I:0.1996A P:44.262W PF:0.9628 Freq:50.01Hz Lamp Flux:6039.32x1 lm		
NAME: TCE	TYPE:LED	WEIGHT:3.2kg
SPEC.:45W	DIM.: 68mmX1430mmX78mm	SERIAL No.:
MFR.: LITPA AYDINLATMA	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 20DEG
Operators: LITPA
Test Date: 18 April 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity: 65.0%
Test Distance: 5.680m [K=1.0000]
Remarks: TCE-45W-VS
OT-60

LED Avg.L Report

Test:U:230.37V I:0.1996A P:44.262W PF:0.9628 Freq:50.01Hz Lamp Flux:6039.32x1 lm		
NAME: TCE	TYPE:LED	WEIGHT:3.2kg
SPEC.:45W	DIM.: 68mmX1430mmX78mm	SERIAL No.:
MFR.: LITPA AYDINLATMA	SUR.:	Shielding Angle:

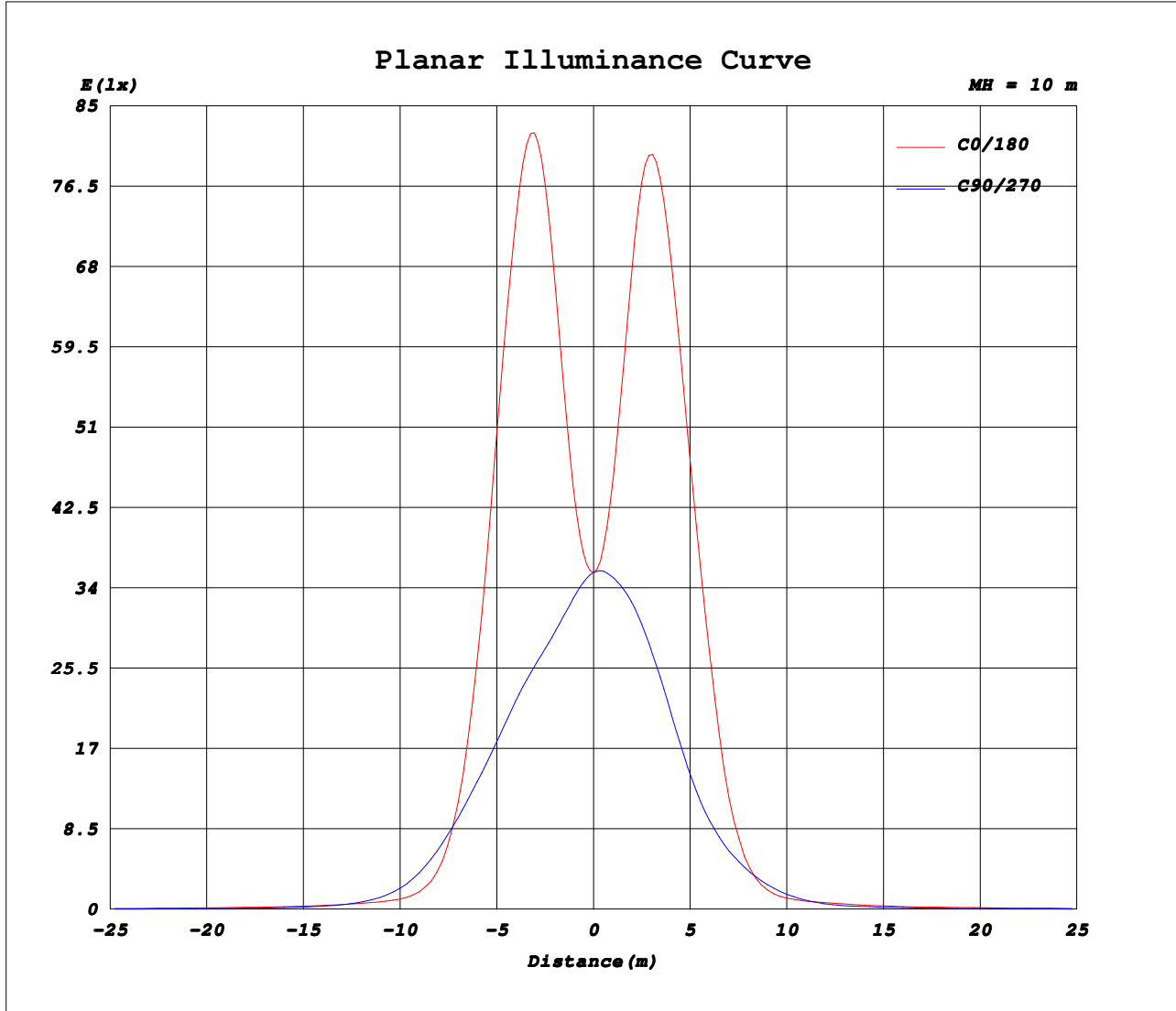
AvgL	cd/m2
L_0~180 (65) av	4797
L_0~180 (75) av	7402
L_0~180 (85) av	11253
L_90~270 (65) av	2453
L_90~270 (75) av	2476
L_90~270 (85) av	1817
L_45 (65) av	3908
L_45 (75) av	5745
L_45 (85) av	8256

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:20DEG
Operators:LITPA
Test Date:18 April 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:5.680m [K=1.0000]
Remarks: TCE-45W-VS
OT-60

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 20DEG
Operators: LITPA
Test Date: 18 April 2019

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity: 65.0%
Test Distance: 5.680m [K=1.0000]
Remarks: TCE-45W-VS
OT-60

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.37V I:0.1996A P:44.262W PF:0.9628 Freq:50.01Hz Lamp Flux:6039.32x1 lm		
NAME: TCE	TYPE:LED	WEIGHT:3.2kg
SPEC.:45W	DIM.: 68mmX1430mmX78mm	SERIAL No.:
MFR.: LITPA AYDINLATMA	SUR.:	Shielding Angle:

Table--1

UNIT: cd

[illegible]

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 20DEG
Operators: LITPA
Test Date: 18 April 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:5.680m [K=1.0000]
Remarks: TCE-45W-VS
OT-60

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.37V I:0.1996A P:44.262W PF:0.9628 Freq:50.01Hz Lamp Flux:6039.32x1 lm		
NAME: TCE	TYPE:LED	WEIGHT:3.2kg
SPEC.:45W	DIM.: 68mmX1430mmX78mm	SERIAL No.:
MFR.: LITPA AYDINLATMA	SUR.:	Shielding Angle:

Table--2

UNIT: cd

[illegible]

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 20DEG
Operators: LITPA
Test Date: 18 April 2019

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:5.680m [K=1.0000]
Remarks: TCE-45W-VS
OT-60