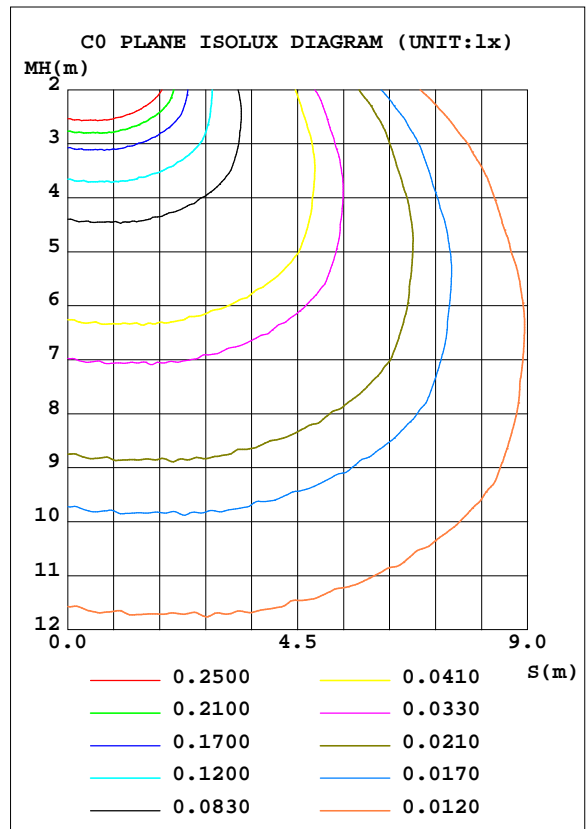
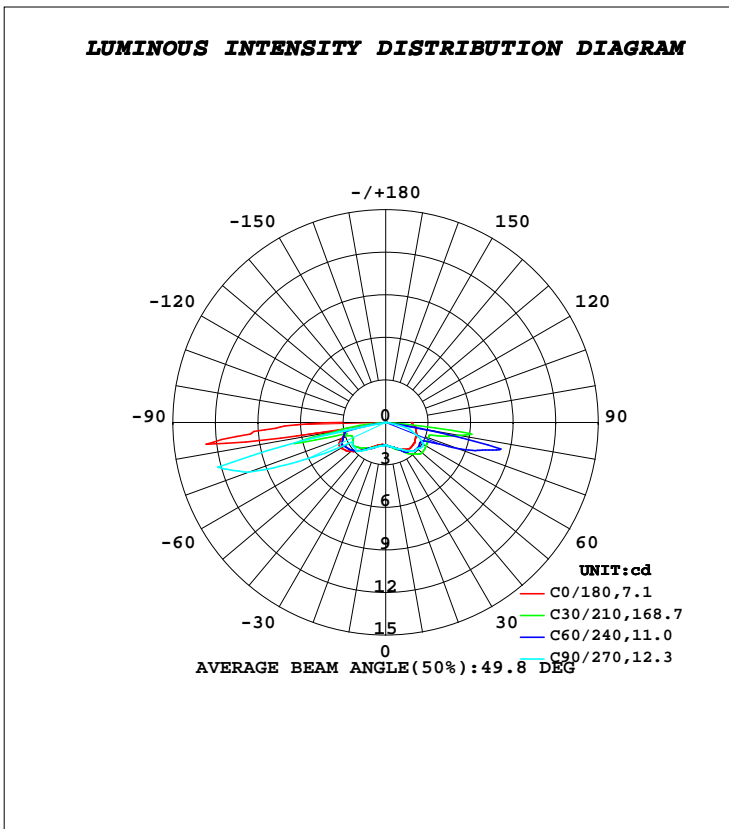


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.000V I:0.0770A P:3.0000W PF:1.0000 Freq:50.00Hz Lamp Flux:17.5851x1 lm		
NAME: KS-TMDM-X5W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:KS-TMDM-X5W
MFR.: KAMS	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	KS-TMDM-X5W	Imax(cd)	18.19	S/MH(C0/180)	2.50
NOMINAL POWER(W)	3	LOR(%)	100.0	S/MH(C90/270)	2.30
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	17.585	η UP, DN(C0-180)	0.0,48.5
NOMINAL FLUX(lm)	17.5851	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,51.5
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	2.00
TEST VOLTAGE(V)	24	η down(%)	100.0	CIBSE SHR MAX	2.00



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2022-08-09

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:9.200m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

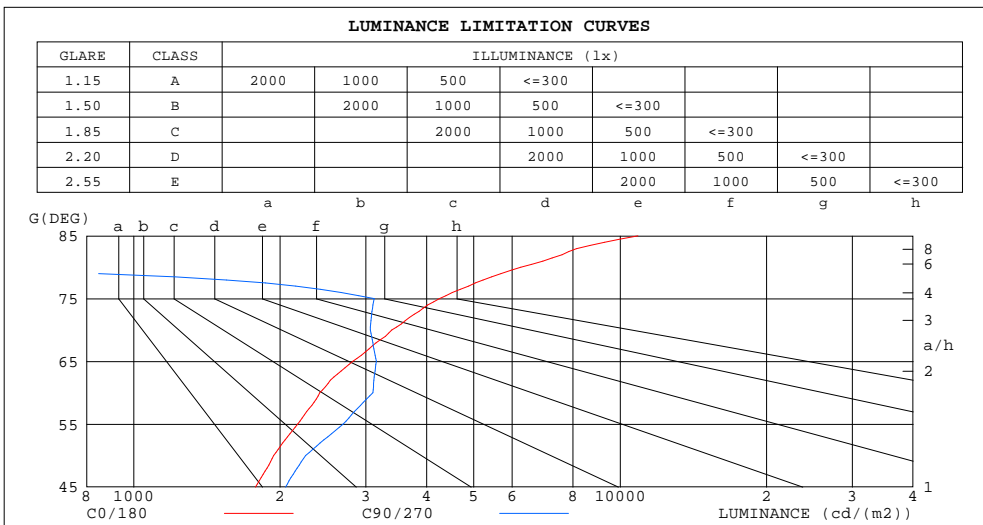
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	1.716	1.737	1.727	1.695	1.591	1.663	1.685	1.708	0- 10	0.1586	0.1586	0.90,0.90
20	1.936	1.924	1.920	1.892	1.724	1.811	1.844	1.866	10- 20	0.5060	0.6646	3.78,3.78
30	2.179	2.415	2.186	2.215	2.045	2.080	2.085	2.270	20- 30	0.9434	1.608	9.14,9.14
40	2.469	3.013	2.594	2.607	2.562	2.318	2.602	2.796	30- 40	1.515	3.123	17.8,17.8
50	2.492	3.263	2.900	2.949	3.181	2.673	2.813	3.209	40- 50	2.190	5.314	30.2,30.2
60	2.414	3.298	3.103	2.695	3.620	2.892	2.719	3.412	50- 60	2.707	8.020	45.6,45.6
70	2.320	4.012	2.095	4.611	3.277	2.901	10.28	3.183	60- 70	3.250	11.27	64.1,64.1
80	2.171	5.971	0	6.539	3.056	1.982	0	5.513	70- 80	4.795	16.07	91.4,91.4
90	1.850	0	0	0	3.053	0	0	0	80- 90	1.520	17.59	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		

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2022-08-09

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:9.200m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:24.000V I:0.0770A P:3.0000W PF:1.0000 Freq:50.00Hz Lamp Flux:17.5851x1 lm		
NAME: KS-TMDM-X5W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:KS-TMDM-X5W
MFR.: KAMS	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	10880	0
80	6250	0
75	4254	3120
70	3391	3063
65	2819	3152
60	2414	3103
55	2172	2696
50	1938	2256
45	1779	2050

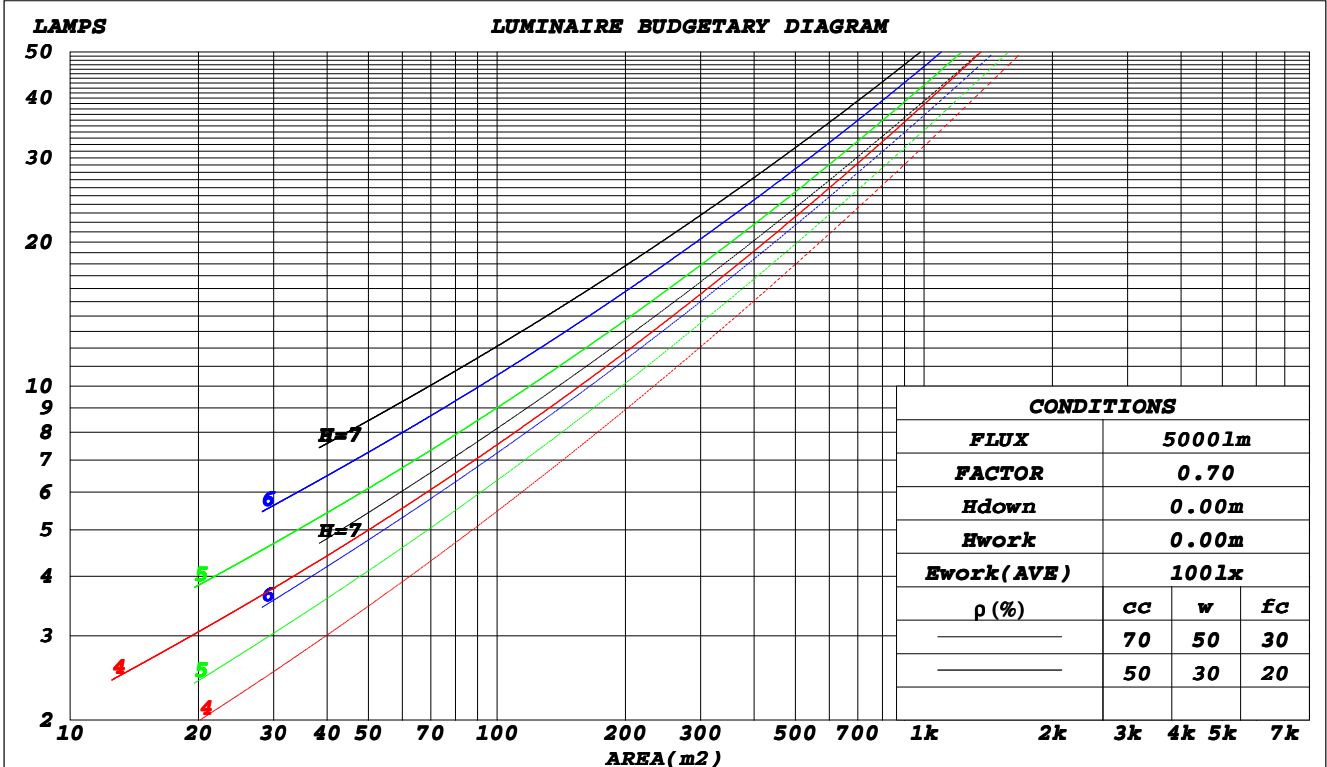
H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2022-08-09

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:9.200m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.000V I:0.0770A P:3.0000W PF:1.0000 Freq:50.00Hz Lamp Flux:17.5851x1 lm		
NAME: KS-TMDM-X5W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:KS-TMDM-X5W
MFR.: KAMS	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	.00
1.0	.94	.87	.80	.91	.85	.79	.87	.81	.76	.82	.78	.74	.79	.75	.72	.69
2.0	.76	.65	.57	.74	.64	.56	.70	.62	.55	.66	.59	.53	.63	.57	.52	.49
3.0	.63	.51	.42	.61	.50	.42	.58	.49	.41	.55	.47	.40	.52	.45	.39	.36
4.0	.54	.42	.33	.52	.41	.33	.49	.40	.32	.47	.38	.31	.44	.37	.31	.28
5.0	.47	.35	.27	.45	.34	.26	.43	.33	.26	.41	.32	.26	.39	.31	.25	.23
6.0	.41	.30	.22	.40	.30	.22	.38	.29	.22	.36	.28	.21	.34	.27	.21	.18
7.0	.37	.26	.19	.36	.26	.19	.34	.25	.18	.32	.24	.18	.31	.23	.18	.15
8.0	.33	.23	.16	.32	.23	.16	.31	.22	.16	.29	.21	.16	.28	.21	.15	.13
9.0	.30	.20	.14	.29	.20	.14	.28	.20	.14	.27	.19	.14	.26	.19	.13	.11
10.0	.27	.18	.12	.27	.18	.12	.26	.18	.12	.25	.17	.12	.24	.17	.12	.10



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2022-08-09

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:9.200m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:24.000V I:0.0770A P:3.0000W PF:1.0000 Freq:50.00Hz Lamp Flux:17.5851x1 lm		
NAME: KS-TMDM-X5W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:KS-TMDM-X5W
MFR.: KAMS	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	.504	.287	.091	.497	.283	.090	.482	.277	.088	.469	.271	.087	.457	.265	.085	
2.0	.434	.238	.073	.427	.235	.072	.414	.230	.071	.402	.225	.071	.391	.221	.070	
3.0	.376	.200	.060	.369	.198	.060	.358	.194	.059	.347	.190	.058	.337	.187	.058	
4.0	.329	.171	.050	.324	.170	.050	.314	.166	.050	.304	.163	.049	.295	.160	.049	
5.0	.293	.149	.043	.288	.148	.043	.279	.145	.043	.270	.143	.042	.262	.140	.042	
6.0	.263	.132	.038	.259	.131	.038	.251	.129	.037	.243	.126	.037	.236	.124	.037	
7.0	.239	.118	.033	.235	.117	.033	.228	.115	.033	.221	.113	.033	.215	.112	.033	
8.0	.219	.107	.030	.215	.106	.030	.209	.104	.030	.203	.103	.030	.197	.101	.030	
9.0	.202	.098	.027	.199	.097	.027	.193	.095	.027	.188	.094	.027	.183	.093	.027	
10.0	.187	.090	.025	.184	.089	.025	.179	.088	.025	.174	.087	.025	.170	.085	.025	

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	.194	.154	.119	.166	.133	.102	.113	.091	.071	.065	.053	.041	.021	.017	.013	
2.0	.191	.131	.081	.164	.113	.070	.112	.078	.049	.065	.045	.029	.021	.015	.009	
3.0	.185	.115	.059	.158	.099	.051	.109	.069	.036	.063	.040	.021	.020	.013	.007	
4.0	.177	.103	.046	.152	.089	.040	.104	.062	.028	.060	.036	.017	.019	.012	.006	
5.0	.168	.093	.038	.144	.081	.033	.099	.056	.023	.058	.033	.014	.019	.011	.005	
6.0	.159	.085	.032	.137	.074	.028	.094	.052	.020	.055	.030	.012	.018	.010	.004	
7.0	.151	.078	.028	.130	.068	.024	.089	.048	.017	.052	.028	.010	.017	.009	.003	
8.0	.143	.073	.024	.123	.063	.021	.085	.044	.015	.049	.026	.009	.016	.009	.003	
9.0	.135	.068	.022	.116	.059	.019	.081	.041	.014	.047	.024	.008	.015	.008	.003	
10.0	.128	.063	.020	.111	.055	.017	.077	.039	.012	.045	.023	.007	.015	.007	.002	

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2022-08-09

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:9.200m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:24.000V I:0.0770A P:3.0000W PF:1.0000 Freq:50.00Hz Lamp Flux:17.5851x1 lm										
NAME: KS-TMDM-X5W					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:KS-TMDM-X5W		
MFR.: KAMS					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	30.5	32.4	30.8	32.7	32.9	29.6	31.5	29.9	31.7	32.0
3H	33.4	35.3	33.8	35.5	35.8	31.8	33.6	32.1	33.9	34.2
4H	34.9	36.7	35.3	37.0	37.3	32.8	34.6	33.1	34.9	35.1
6H	36.5	38.2	36.9	38.5	38.8	32.9	34.6	33.3	34.9	35.2
8H	37.3	39.0	37.7	39.3	39.6	32.9	34.5	33.3	34.8	35.2
12H	38.2	39.8	38.6	40.1	40.5	32.8	34.4	33.2	34.7	35.1
4H 2H	31.8	33.6	32.1	33.8	34.1	31.3	33.1	31.7	33.4	33.7
3H	35.1	36.7	35.4	37.0	37.3	35.4	37.0	35.8	37.3	37.6
4H	37.4	38.9	37.8	39.2	39.6	36.7	38.1	37.1	38.5	38.9
6H	40.1	41.5	40.5	41.8	42.2	36.7	38.1	37.1	38.4	38.8
8H	40.8	42.0	41.2	42.4	42.8	36.6	37.9	37.1	38.3	38.7
12H	41.4	42.6	41.8	43.0	43.4	36.6	37.8	37.0	38.2	38.6
8H 4H	39.8	41.0	40.2	41.4	41.8	39.9	41.2	40.3	41.6	42.0
6H	42.7	43.8	43.2	44.3	44.7	40.4	41.5	40.9	42.0	42.4
8H	44.0	45.0	44.5	45.4	45.9	40.4	41.4	40.9	41.8	42.3
12H	44.9	45.7	45.3	46.2	46.7	40.4	41.2	40.9	41.7	42.2
12H 4H	39.9	41.1	40.4	41.5	41.9	40.4	41.6	40.9	42.0	42.5
6H	42.9	43.9	43.4	44.4	44.8	41.1	42.1	41.5	42.5	43.0
8H	44.2	45.1	44.7	45.6	46.1	41.0	41.9	41.5	42.4	42.9
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.1					+ 0.9 / - 0.5				
2.0H	+ 0.3 / - 0.5					+ 1.6 / - 1.5				

CIE Pub.117, 17.59 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -14.0)

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2022-08-09

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:9.200m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:24.000V I:0.0770A P:3.0000W PF:1.0000 Freq:50.00Hz Lamp Flux:17.5851x1 lm		
NAME: KS-TMDM-X5W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:KS-TMDM-X5W
MFR.: KAMS	SUR.:	Shielding Angle:

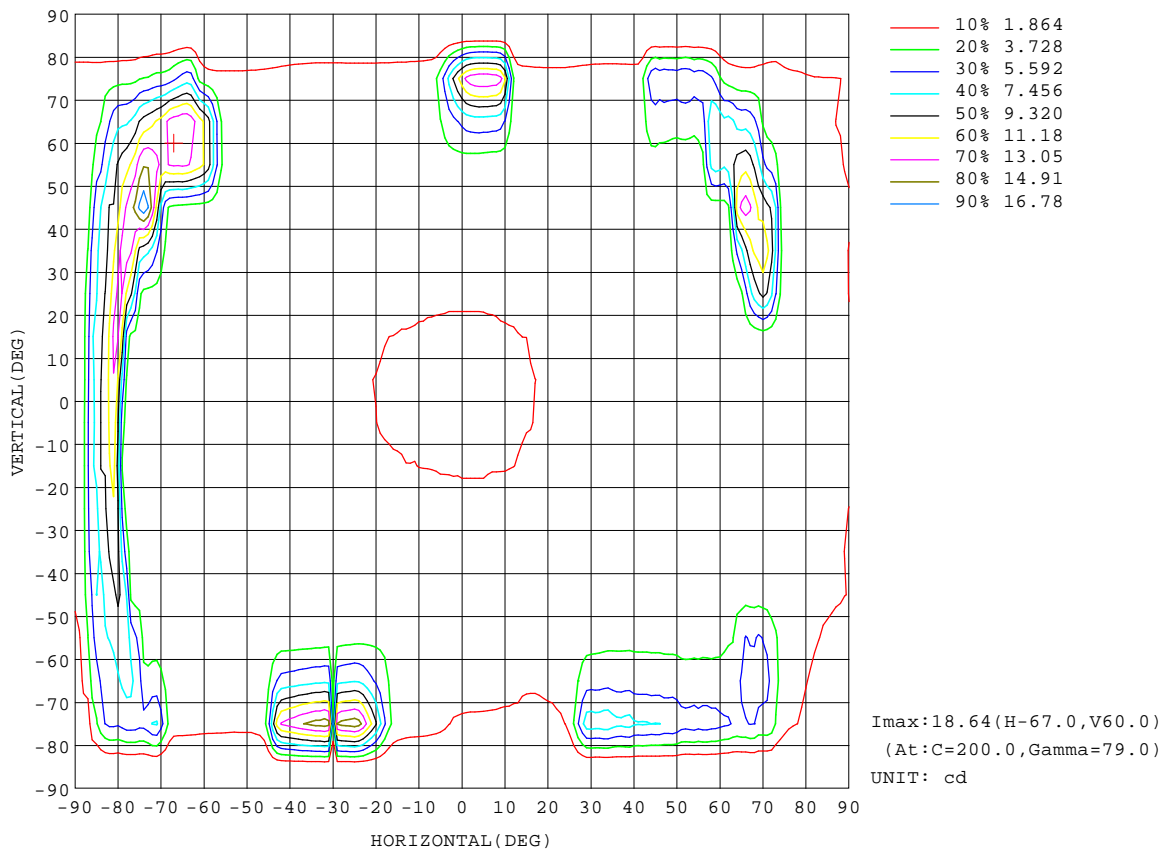
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	44	30	21	43	29	21	42	29	21	13
0.80	52	37	28	51	37	28	49	36	27	18
1.00	60	45	35	58	44	34	55	46	34	24
1.25	67	52	42	65	51	41	62	50	41	31
1.50	73	58	48	70	57	47	67	55	46	36
2.00	81	68	58	79	67	57	74	64	56	45
2.50	87	75	65	84	73	64	79	70	62	52
3.00	91	80	72	89	79	70	84	75	68	57
4.00	97	88	80	94	86	79	89	82	76	65
5.00	101	93	86	98	91	85	93	87	82	71
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2022-08-09

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:9.200m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:24.000V I:0.0770A P:3.0000W PF:1.0000 Freq:50.00Hz Lamp Flux:17.5851x1 lm		
NAME: KS-TMDM-X5W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:KS-TMDM-X5W
MFR.: KAMS	SUR.:	Shielding Angle:

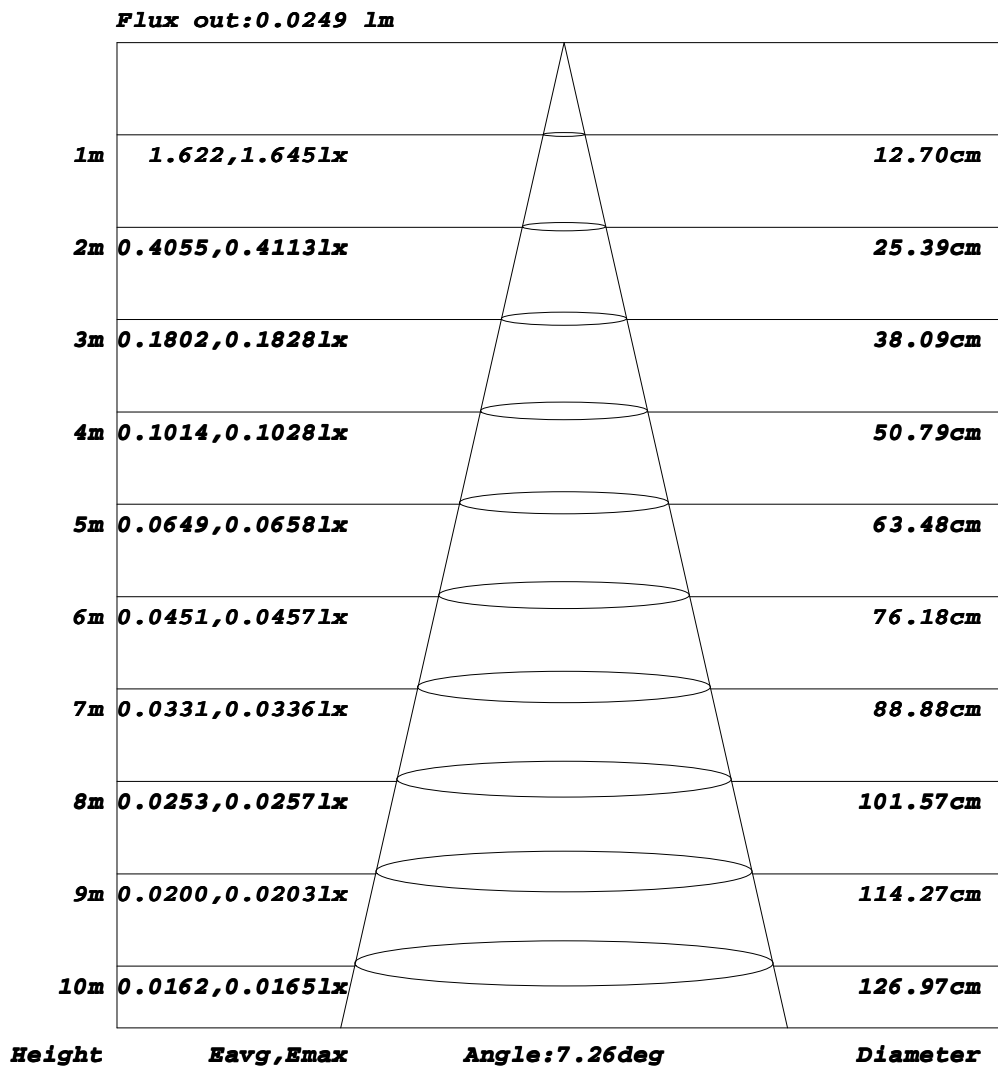


H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2022-08-09

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:9.200m [K=1.0000]
Remarks:

AAI Figure

Test:U:24.000V I:0.0770A P:3.0000W PF:1.0000 Freq:50.00Hz Lamp Flux:17.5851x1 lm		
NAME: KS-TMDM-X5W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:KS-TMDM-X5W
MFR.: KAMS	SUR.:	Shielding Angle:



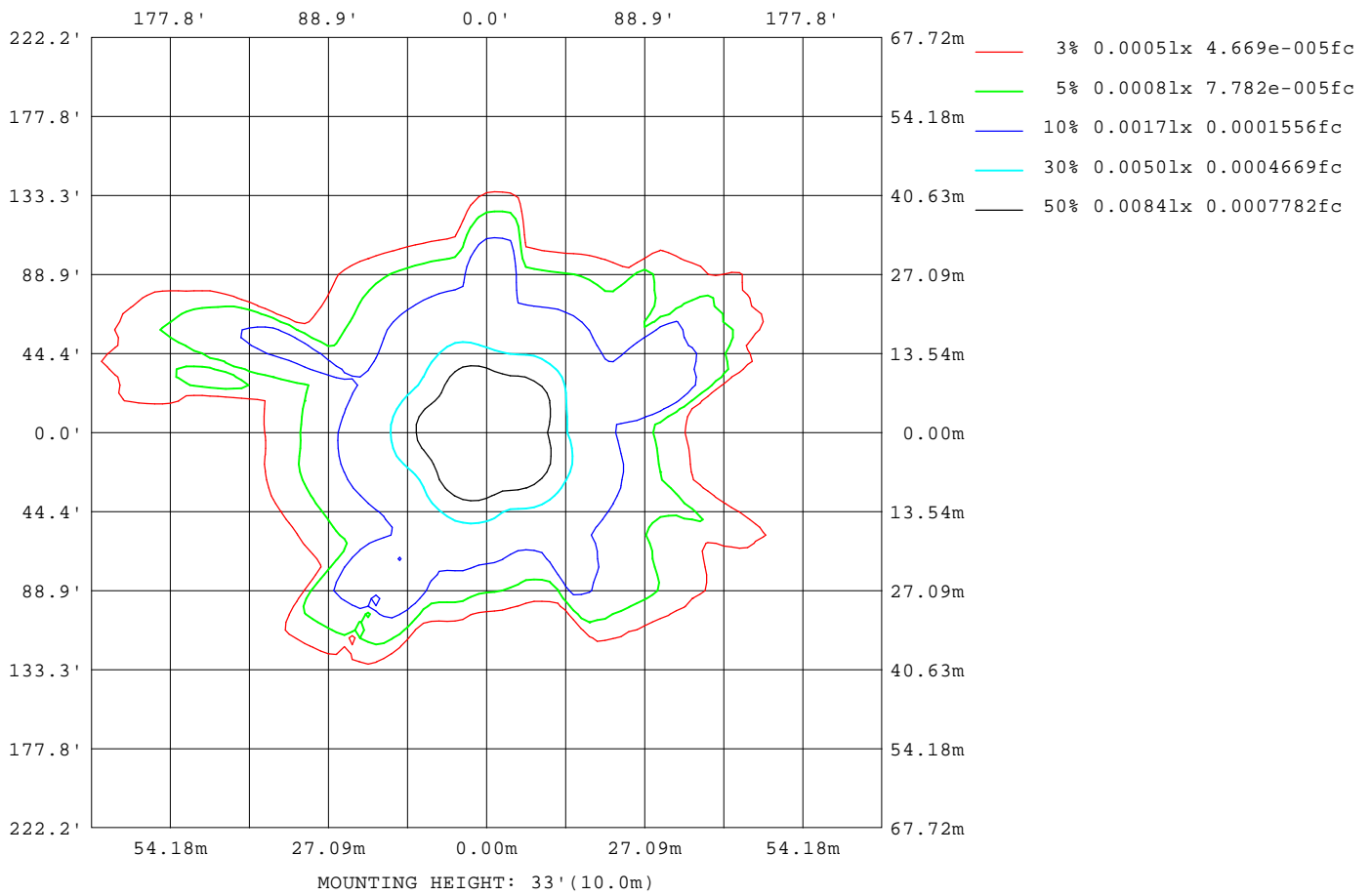
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2022-08-09

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:9.200m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:24.000V I:0.0770A P:3.0000W PF:1.0000 Freq:50.00Hz Lamp Flux:17.5851x1 lm		
NAME: KS-TMDM-X5W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:KS-TMDM-X5W
MFR.: KAMS	SUR.:	Shielding Angle:



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2022-08-09

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:9.200m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:24.000V I:0.0770A P:3.0000W PF:1.0000 Freq:50.00Hz Lamp Flux:17.5851x1 lm		
NAME: KS-TMDM-X5W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:KS-TMDM-X5W
MFR.: KAMS	SUR.:	Shielding Angle:

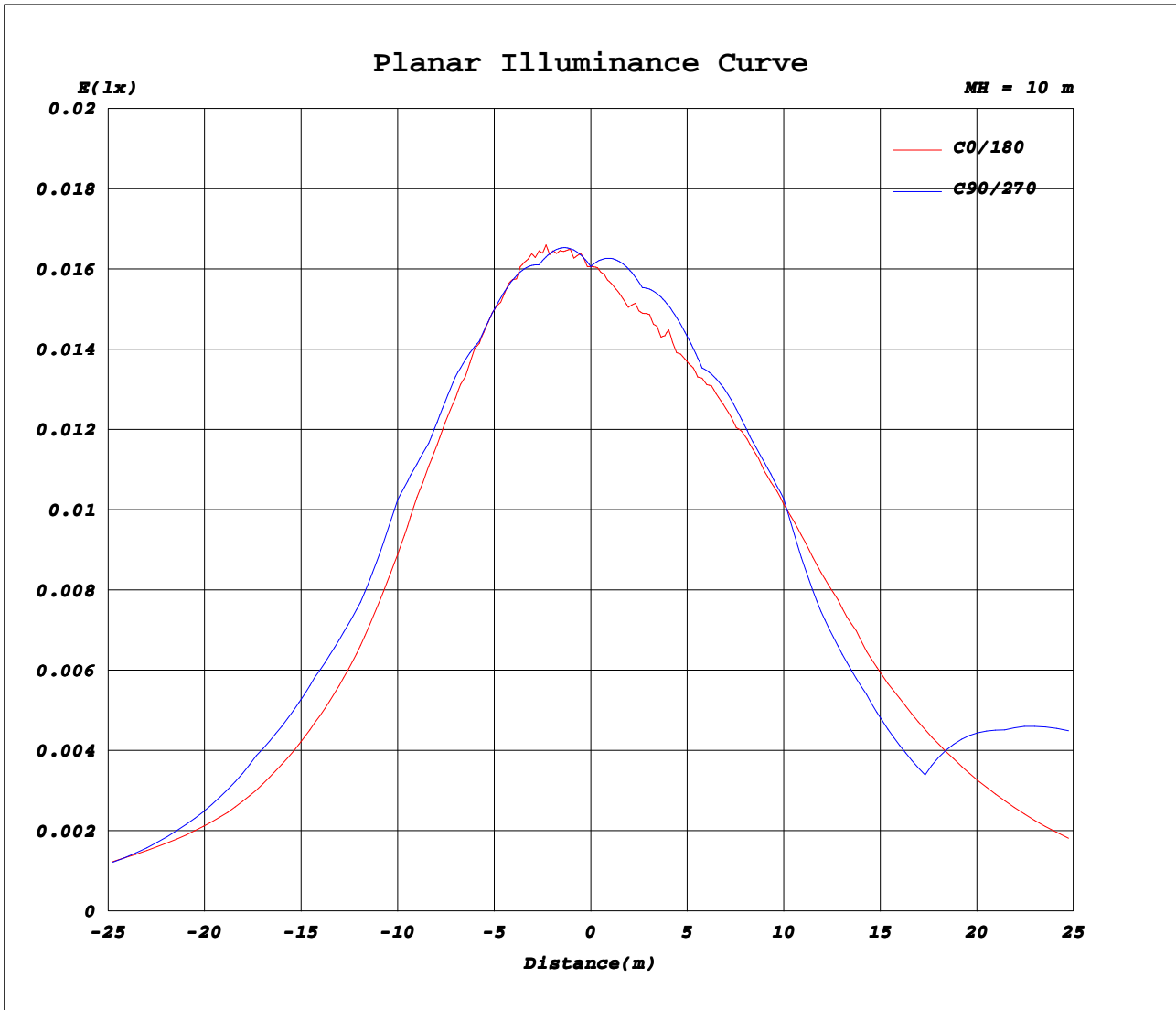
AvgL	cd/m2
L_0~180(65)av	3570
L_0~180(75)av	5072
L_0~180(85)av	32848
L_90~270(65)av	5117
L_90~270(75)av	13410
L_90~270(85)av	0
L_45(65)av	3587
L_45(75)av	11313
L_45(85)av	0

Standard: GB/T 29293-2012

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2022-08-09

V(B) Range:-75 - 75DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
Humidity:65.0%
Test Distance:9.200m [K=1.0000]
Remarks:

Planar Illuminance Curve



H(β) Range:-90 - 90DEG
 H(β) Interval: 1.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2022-08-09

V(B) Range:-75 - 75DEG
 V(B) Interval: 5.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.400
 Humidity:65.0%
 Test Distance:9.200m [K=1.0000]
 Remarks:

