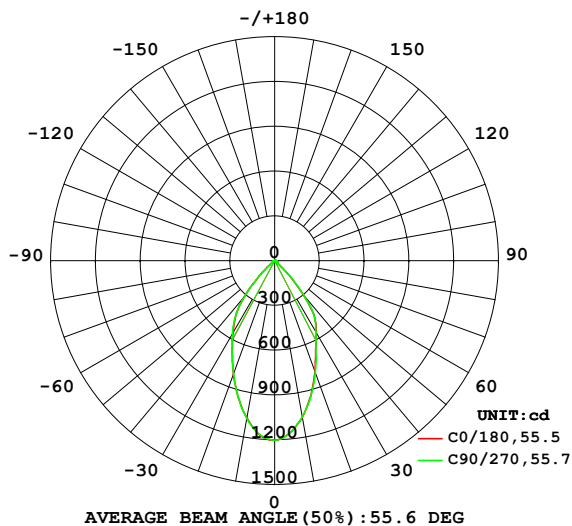


LUMINAIRE PHOTOMETRIC TEST REPORT

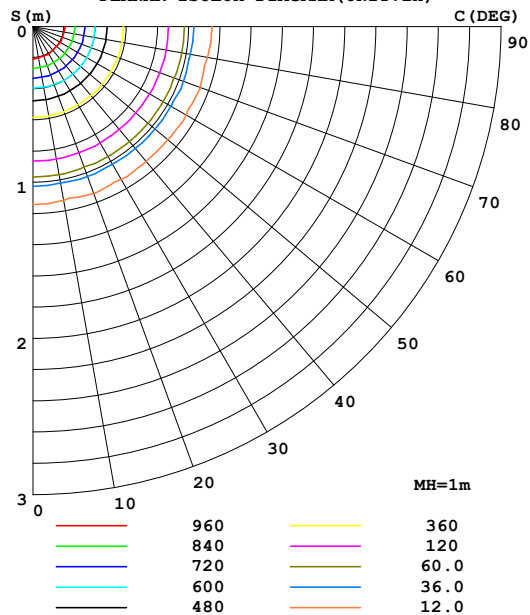
Test:U:240.4V I:0.0443A P:9.9W PF:0.9313 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.96% KDisp:0.9482		Lamp Flux:1109.15x1 lm
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 60D	LOWTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 111.75 lm/W
MODEL		Imax (cd)	1204	S/MH(C0/180)		0.81
NOMINAL POWER(W)	10	LOR(%)	100.0	S/MH(C90/270)		0.81
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1109.1	η UP,DN(C0-180)		0.0,49.7
NOMINAL FLUX(lm)	1109.15	CIE CLASS	DIRECT	η UP,DN(C180-360)		0.0,50.3
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM		0.75
TEST VOLTAGE(V)	240.38	η down (%)	100.0	CIBSE SHR MAX		0.95

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



PLANAR ISOLUX DIAGRAM(UNIT:lx)



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [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	1067	1066	1063	1069	1073	1075	1075	1070	0- 10	108.1	108.1	9.74,9.74
20	790.2	797.9	800.4	803.2	809.2	809.8	807.6	795.4	10- 20	262.4	370.5	33.4,33.4
30	558.4	556.4	553.0	561.0	560.5	564.7	566.8	564.2	20- 30	307.4	677.9	61.1,61.1
40	300.4	306.0	312.0	320.8	319.3	319.7	315.1	303.3	30- 40	282.7	960.6	86.6,86.6
50	27.27	27.05	26.08	26.80	29.86	30.13	29.82	27.34	40- 50	109.9	1070	96.5,96.5
60	16.20	15.94	15.58	15.41	14.90	14.40	14.78	15.52	50- 60	16.98	1087	98,98
70	10.06	9.636	9.317	9.263	9.963	10.45	10.47	10.09	60- 70	12.62	1100	99.2,99.2
80	4.464	4.148	3.728	3.507	3.755	4.091	4.359	4.362	70- 80	7.197	1107	99.8,99.8
90	0.0411	0.0360	0.0456	0.0383	0.0427	0.0388	0.0382	0.0367	80- 90	1.893	1109	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): 1041.7 lm

%lum = 93.9%

%lamp = 93.9%

Conical surface Flux(120deg): 1087.4 lm

%lum = 98.0%

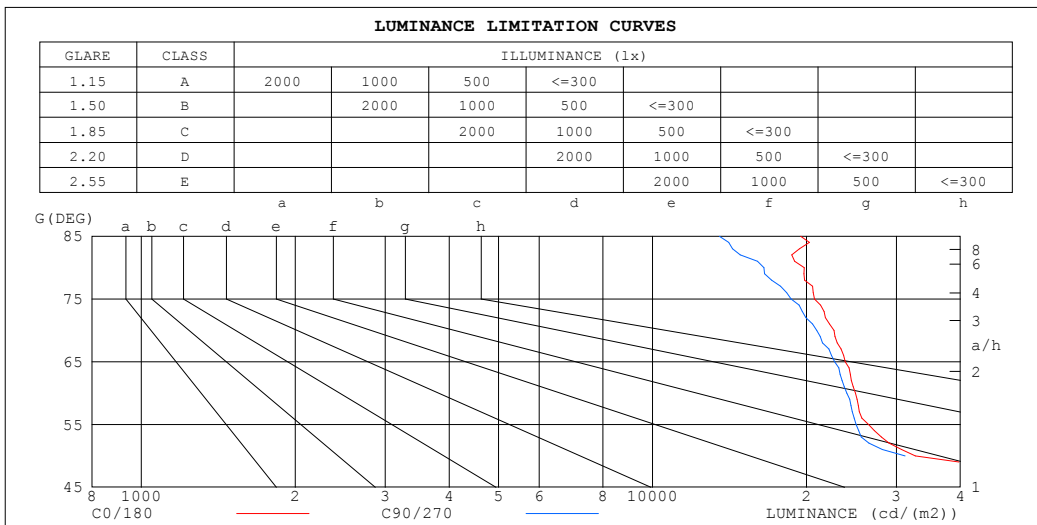
%lamp = 98.0%

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
 Humidity:65.0%
 Test Distance:3.090m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:240.4V I:0.0443A P:9.9W PF:0.9313 Freq:49.99Hz			Lamp Flux:1109.15x1 lm		
UTHDi:0.17% ITHDi:18.96% KDisp:0.9482					
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 60D			LOWTYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.: Norming lighting			SUR.: 41mm		Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	19504	13507
80	19801	16519
75	20729	18666
70	22651	20959
65	23813	22720
60	24955	23975
55	26482	25002
50	32677	31213
45	130492	137827

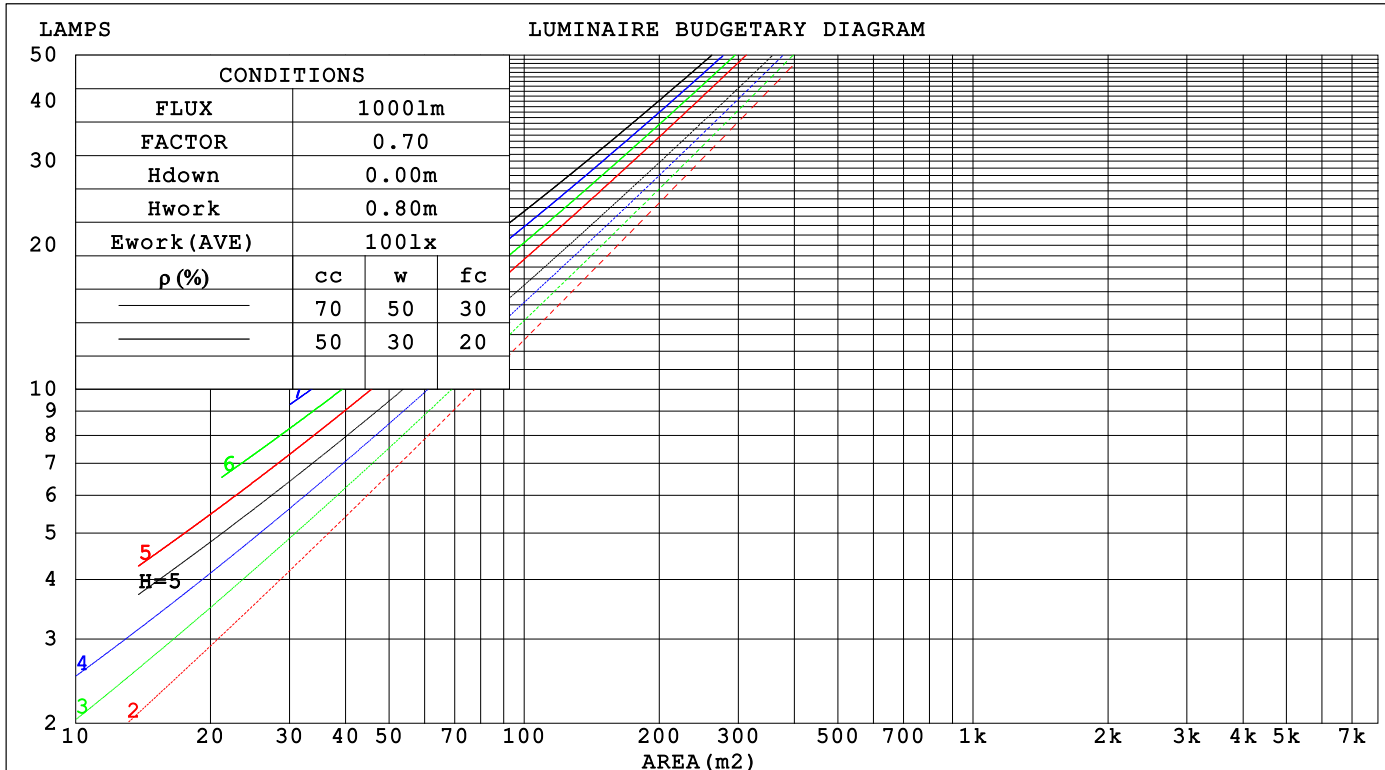
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.4V I:0.0443A P:9.9W PF:0.9313 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.96% KDisp:0.9482		Lamp Flux:1109.15x1 lm
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 60D	10WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	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															



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:240.4V I:0.0443A P:9.9W PF:0.9313 Freq:49.99Hz			UTHDi:0.17% ITHDi:18.96% KDisp:0.9482			Lamp Flux:1109.15x1 lm		
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 60D			LOTTYPE:			WEIGHT:		
SPEC.:			DIM.:			SERIAL No.:		
MFR.: Norming lighting			SUR.: 41mm			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	.192	.109	.035	.185	.106	.034	.173	.099	.032	.161	.093	.030	.150	.087	.028		
2.0	.184	.101	.031	.179	.098	.030	.168	.093	.029	.158	.089	.028	.149	.084	.027		
3.0	.176	.093	.028	.171	.091	.028	.162	.088	.027	.153	.084	.026	.145	.080	.025		
4.0	.167	.087	.026	.163	.085	.025	.155	.082	.025	.147	.079	.024	.141	.076	.023		
5.0	.159	.081	.023	.155	.080	.023	.148	.077	.023	.142	.075	.022	.136	.073	.022		
6.0	.152	.076	.022	.148	.075	.022	.142	.073	.021	.136	.071	.021	.131	.069	.020		
7.0	.145	.071	.020	.142	.071	.020	.136	.069	.020	.131	.067	.020	.126	.066	.019		
8.0	.138	.067	.019	.135	.067	.019	.131	.065	.019	.126	.064	.018	.122	.062	.018		
9.0	.132	.064	.018	.130	.063	.018	.125	.062	.018	.121	.061	.017	.117	.059	.017		
10.0	.126	.061	.017	.124	.060	.017	.120	.059	.017	.116	.058	.016	.113	.057	.016		

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	.172	.157	.144	.147	.135	.124	.101	.093	.086	.058	.054	.050	.019	.017	.016		
2.0	.158	.132	.111	.135	.114	.096	.093	.079	.067	.053	.046	.039	.017	.015	.013		
3.0	.146	.114	.088	.125	.098	.076	.086	.068	.053	.050	.040	.031	.016	.013	.010		
4.0	.137	.099	.071	.117	.086	.061	.081	.060	.043	.047	.035	.026	.015	.011	.008		
5.0	.128	.088	.058	.110	.076	.050	.076	.053	.035	.044	.031	.021	.014	.010	.007		
6.0	.121	.079	.048	.104	.068	.042	.072	.048	.030	.042	.028	.018	.013	.009	.006		
7.0	.115	.071	.041	.099	.062	.035	.068	.043	.025	.040	.026	.015	.013	.008	.005		
8.0	.109	.065	.035	.094	.056	.030	.065	.040	.022	.038	.023	.013	.012	.008	.004		
9.0	.104	.060	.030	.090	.052	.026	.062	.037	.019	.036	.022	.011	.012	.007	.004		
10.0	.100	.056	.026	.086	.048	.023	.060	.034	.016	.035	.020	.010	.011	.007	.003		

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:240.4V I:0.0443A P:9.9W PF:0.9313 Freq:49.99Hz UTHDi:0.17% ITHDi:18.96% KDisp:0.9482 Lamp Flux:1109.15x1 lm										
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 60D						LOWTYPE:			WEIGHT:	
SPEC.:						DIM.:			SERIAL No.:	
MFR.: Norming lighting						SUR.: 41mm			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				
x = 2H y = 2H						26.0	27.0	26.2	27.2	27.3
3H						25.9	26.9	26.2	27.1	27.3
4H						25.9	26.8	26.2	27.0	27.2
6H						25.9	26.7	26.2	27.0	27.2
8H						25.8	26.6	26.2	26.9	27.2
12H						25.8	26.6	26.1	26.9	27.1
4H 2H						25.8	26.6	26.0	26.9	27.1
3H						25.7	26.5	26.1	26.8	27.1
4H						25.8	26.5	26.1	26.8	27.1
6H						25.8	26.4	26.1	26.7	27.1
8H						25.8	26.3	26.1	26.7	27.0
12H						25.8	26.3	26.2	26.7	27.1
8H 4H						25.7	26.2	26.1	26.6	27.0
6H						25.7	26.2	26.1	26.6	27.0
8H						25.7	26.1	26.2	26.5	27.0
12H						25.8	26.1	26.2	26.5	27.0
12H 4H						25.6	26.2	26.0	26.5	26.9
6H						25.7	26.1	26.1	26.5	27.0
8H						25.7	26.1	26.2	26.5	26.9
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H						+ 2.5 / - 6.1				
1.5H						+ 4.8 / - 6.1				
2.0H						+ 5.4 / - 1.7				

CIE Pub.117, 1109 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 0.4)
Area: 0.0013 m2

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.4V I:0.0443A P:9.9W PF:0.9313 Freq:49.99Hz			UTHDi:0.17% ITHDi:18.96% KDisp:0.9482			Lamp Flux:1109.15x1 lm		
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 60D			LOWTYPE:			WEIGHT:		
SPEC.:			DIM.:			SERIAL No.:		
MFR.: Norming lighting			SUR.: 41mm			Shielding Angle:		

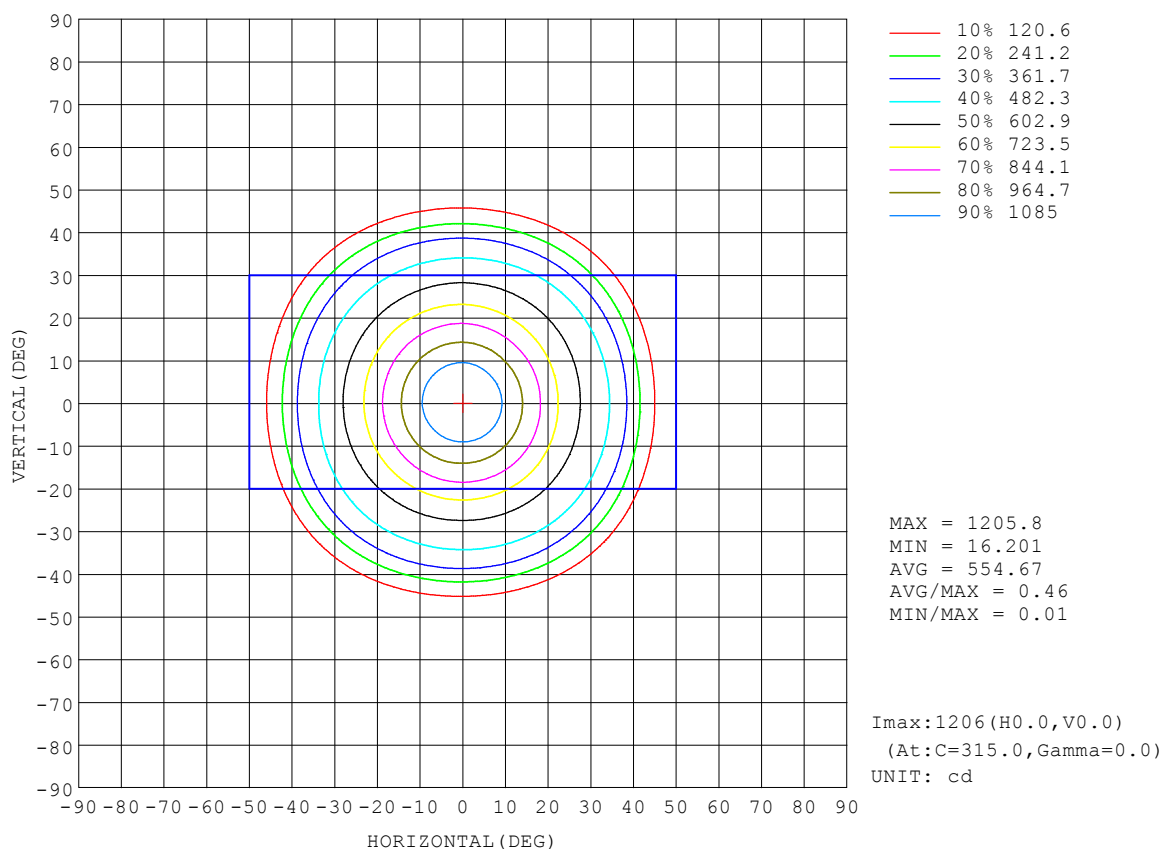
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	83	76	72	83	76	72	82	76	72	68
0.80	91	85	80	91	84	80	89	84	80	76
1.00	96	90	86	96	90	86	94	90	85	81
1.25	101	95	91	100	95	91	98	93	90	86
1.50	104	99	95	103	98	94	100	96	93	89
2.00	107	103	99	106	102	98	103	100	97	91
2.50	109	105	102	107	104	101	104	101	99	93
3.00	111	107	104	109	106	103	106	103	101	94
4.00	113	110	107	111	108	106	107	105	103	96
5.00	114	112	110	112	110	108	108	106	105	97
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
 Humidity: 65.0%
 Test Distance: 3.090m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:240.4V I:0.0443A P:9.9W PF:0.9313 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.96% KDisp:0.9482 Lamp Flux:1109.15x1 lm		
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 60D	10WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

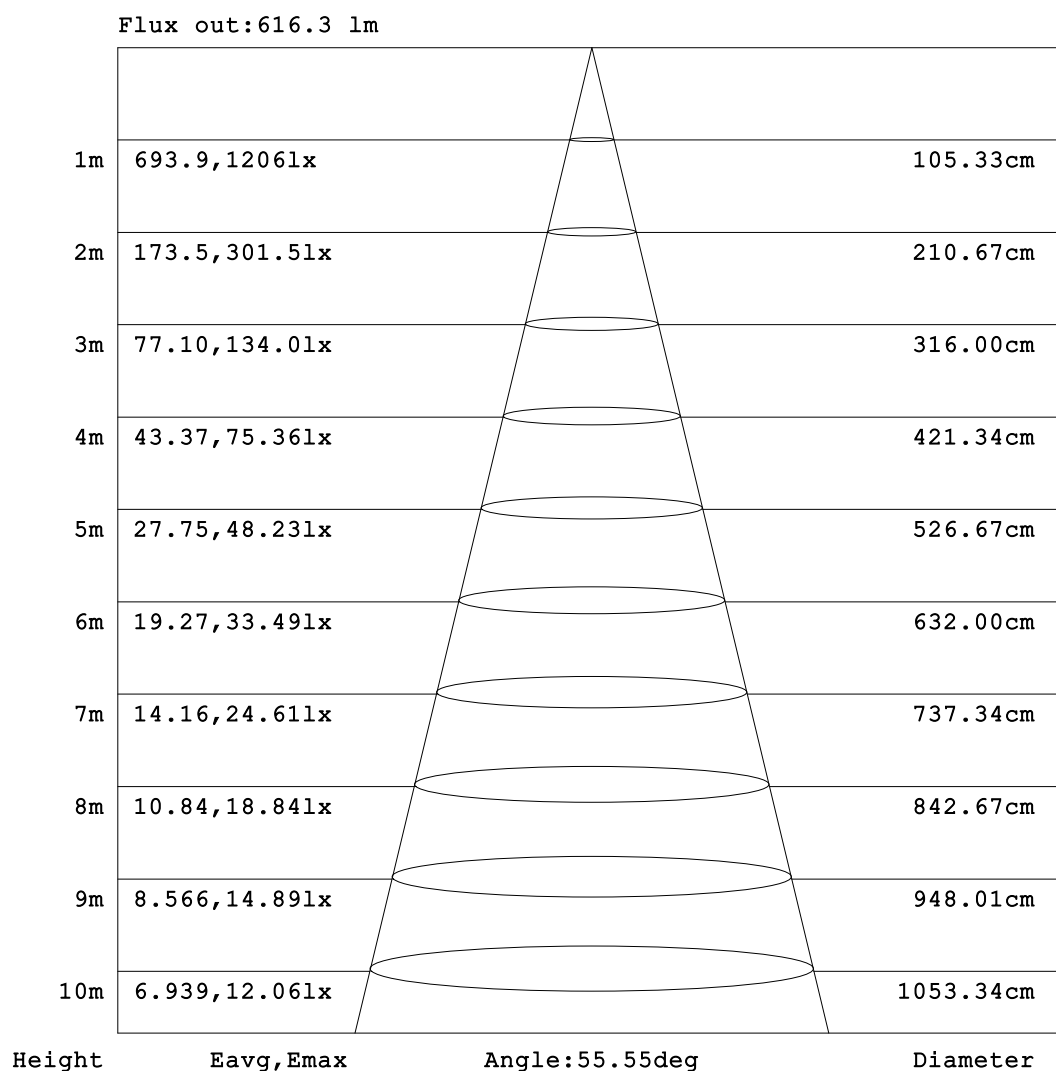


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

AAI Figure

Test:U:240.4V I:0.0443A P:9.9W PF:0.9313 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.96% KDisp:0.9482		Lamp Flux:1109.15x1 lm
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 60D	LOWTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



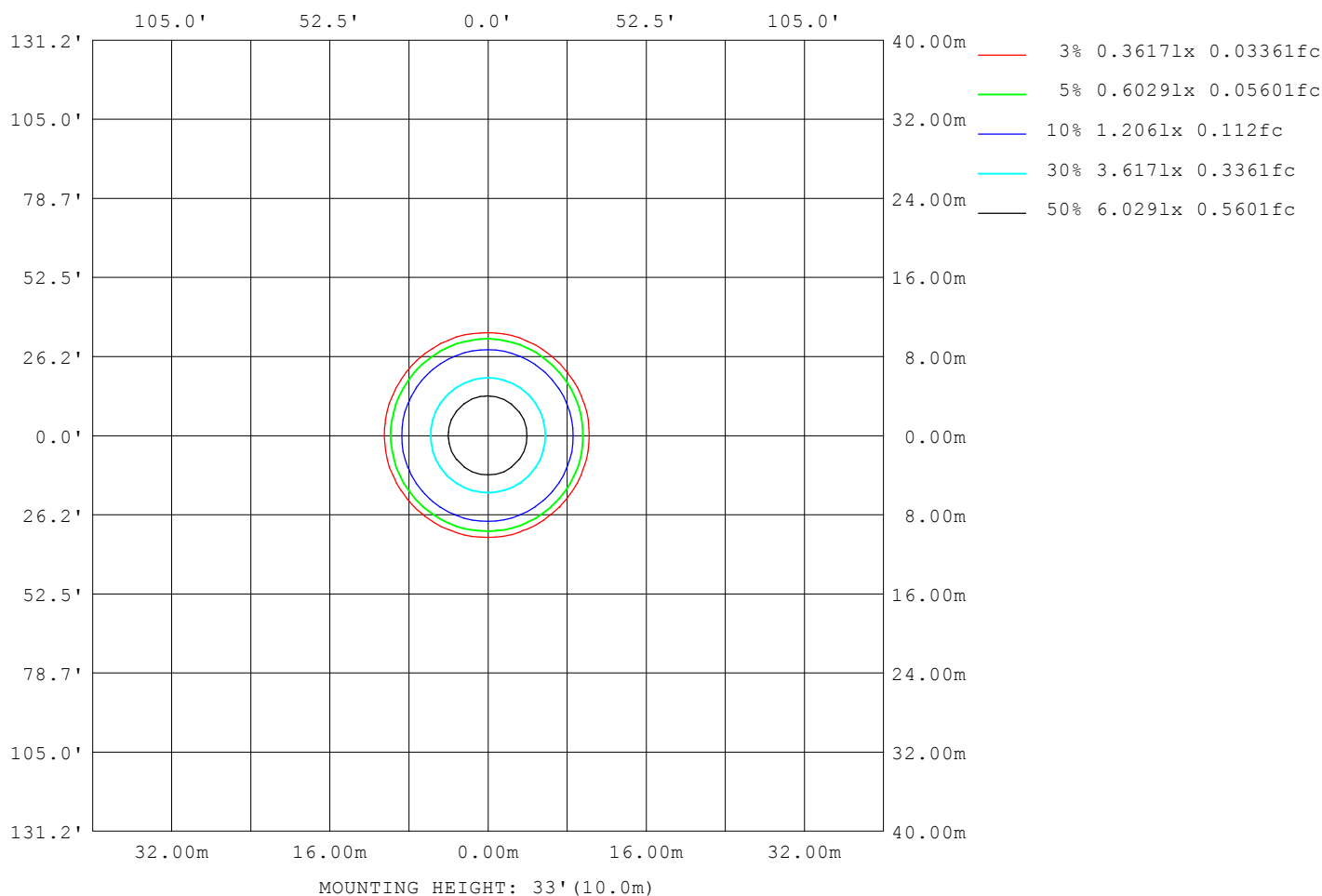
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
 Humidity: 65.0%
 Test Distance: 3.090m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:240.4V I:0.0443A P:9.9W PF:0.9313 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.96% KDisp:0.9482		Lamp Flux:1109.15x1 lm
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 60D	LOWTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:240.4V I:0.0443A P:9.9W PF:0.9313 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.96% KDisp:0.9482		Lamp Flux:1109.15x1 lm
NAME: FUSION-MD23-AHD-013-COB-02SC 3000K RA90 60D	LOWTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

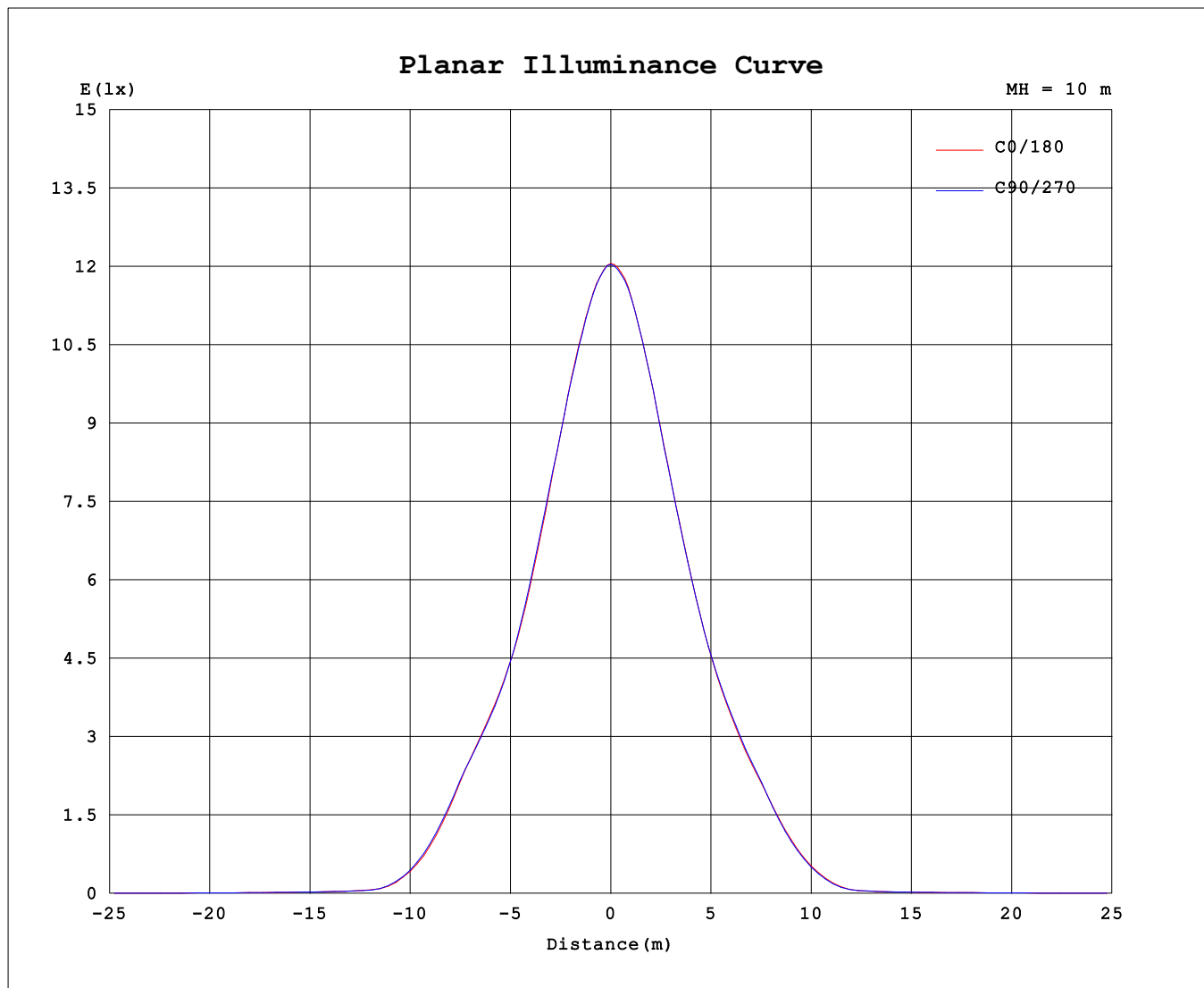
AvgL	cd/m2
L_0~180 (65) av	23616
L_0~180 (75) av	20167
L_0~180 (85) av	16556
L_90~270 (65) av	23315
L_90~270 (75) av	19993
L_90~270 (85) av	16501
L_45 (65) av	23290
L_45 (75) av	19903
L_45 (85) av	16329

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
 Humidity: 65.0%
 Test Distance: 3.090m [K=1.0000]
 Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

```

Photometric Data Table [cd]

G/C	0.0	45.0	90.0	135.0	180.0	225.0	270.0	315.0
0.0	1204	1204	1204	1204	1204	1204	1204	1204
3.0	1185	1186	1185	1188	1192	1193	1189	1187
6.0	1144	1144	1144	1150	1155	1156	1156	1149
9.0	1088	1087	1085	1091	1095	1096	1097	1091
12.0	1018	1017	1018	1025	1026	1027	1027	1019
15.0	936.5	937.5	939.2	946.3	946.6	947.7	944.4	937.0
18.0	849.0	855.8	858.2	860.5	864.3	865.4	863.8	851.5
21.0	761.3	768.8	770.8	774.8	781.1	783.2	780.6	767.3
24.0	677.9	685.2	684.6	690.2	700.3	702.8	700.7	687.7
27.0	612.3	615.1	611.6	618.8	625.5	629.5	628.5	621.3
30.0	558.4	556.4	553.0	561.0	560.5	564.7	566.8	564.2
33.0	508.1	506.6	503.9	506.7	497.1	502.4	504.7	507.4
36.0	444.9	447.1	447.8	448.1	434.3	437.0	441.0	441.0
39.0	339.1	345.7	350.4	358.3	353.0	354.4	350.2	341.5
42.0	222.8	228.3	234.3	243.3	250.4	248.1	243.9	228.6
45.0	119.8	120.7	126.7	137.8	149.6	146.9	143.6	128.1
48.0	45.93	46.47	49.47	57.21	66.74	64.18	61.73	52.77
51.0	25.09	24.45	23.04	21.32	22.03	22.26	23.53	24.43
54.0	20.73	20.13	19.33	18.83	17.78	17.30	18.23	19.85
57.0	17.94	17.69	17.40	17.35	16.15	15.32	15.84	17.23
60.0	16.20	15.94	15.58	15.41	14.90	14.40	14.78	15.52
63.0	14.36	13.97	13.73	13.64	13.66	13.46	13.77	14.12
66.0	12.49	12.15	11.84	11.77	12.35	12.45	12.66	12.55
69.0	10.58	10.26	9.917	9.851	10.58	11.00	11.07	10.62
72.0	8.743	8.385	8.008	7.901	8.607	9.109	9.130	8.711
75.0	6.965	6.623	6.279	6.132	6.606	7.156	7.175	6.876
78.0	5.351	4.965	4.622	4.572	4.884	5.341	5.435	5.227
81.0	3.851	3.561	3.261	3.177	3.325	3.685	3.937	3.899
84.0	2.750	2.301	1.916	1.749	1.872	2.140	2.534	2.767
87.0	0.6558	0.5280	0.3958	0.4981	0.6131	0.7215	0.8262	0.7212
90.0	0.0411	0.0360	0.0456	0.0383	0.0427	0.0388	0.0382	0.0367

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks: