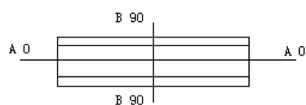
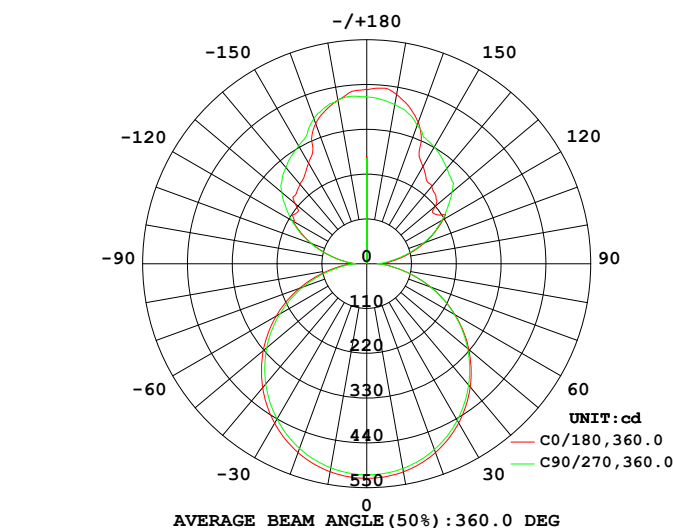


LUMINAIRE PHOTOMETRIC TEST REPORT

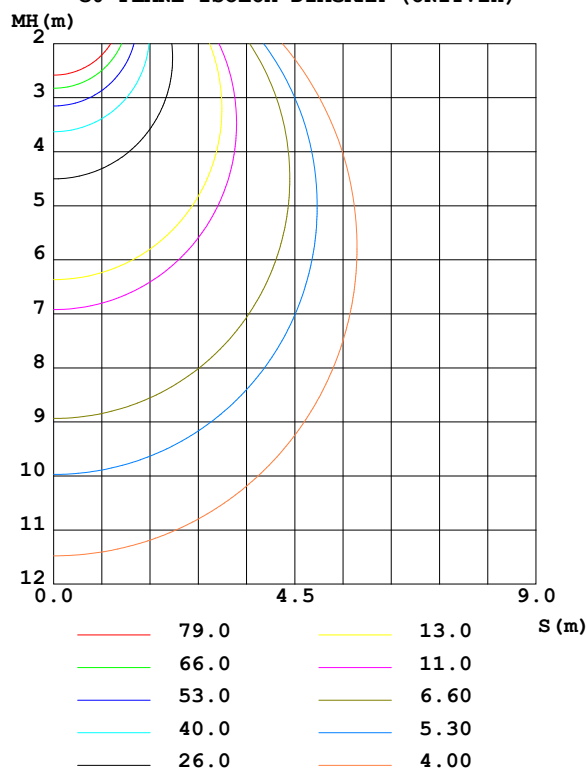
Test:U:220.12V I:0.2412A P:50.119W PF:0.9439 Freq:50.00Hz		
Lamp Flux:2816.21x1 lm		
NAME: SB-U101 A50WSZ 50W		WEIGHT:
TYPE: SPEC.: 4000K	DIM.: 39.37"	SERIAL No.:
MFR.: SNOWBALL	SUR.: 1000mm	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 56.19 lm/W			
MODEL		I _{max} (cd)	526.9	S/MH (C0/180)	1.28
NOMINAL POWER(W)		LOR (%)	100.0	S/MH (C90/270)	1.26
RATED VOLTAGE (V)	--	TOTAL FLUX (lm)	2816.2	η UP,DN (C0-180)	21.6,28.5
NOMINAL FLUX (lm)	2816.21	CIE CLASS	DIFFUSE	η UP,DN (C180-360)	21.6,28.4
LAMPS INSIDE	1	η up (%)	43.1	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	--	η down (%)	56.9	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: 10.0deg/s
Temperature:25.3°C
Operators:DAMIN
Test Date:2023-09-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-3000H_V1 SYSTEM V2.00.463
Humidity:65.0%
Test Distance:9.000m [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	518.7	515.2	510.5	506.0	518.5	513.6	508.8	505.8	0~ 10	49.19	49.19	1.75,1.75
20	493.4	490.2	485.6	481.1	493.4	487.5	482.6	480.6	10~ 20	141.3	190.5	6.76,6.76
30	451.6	448.8	444.3	440.2	452.2	445.4	440.5	439.9	20~ 30	215.2	405.7	14.4,14.4
40	395.2	392.5	389.0	386.0	397.5	390.3	385.7	385.4	30~ 40	261.7	667.5	23.7,23.7
50	327.3	325.6	323.2	320.3	332.0	323.5	321.0	320.4	40~ 50	275.9	943.3	33.5,33.5
60	249.8	249.6	248.5	247.1	256.6	249.7	246.3	245.6	50~ 60	256.5	1200	42.6,42.6
70	166.4	167.3	166.8	167.2	175.2	168.7	165.7	164.7	60~ 70	206.3	1406	49.9,49.9
80	84.95	85.51	85.79	88.54	94.43	89.38	86.08	85.26	70~ 80	133.7	1540	54.7,54.7
90	35.24	31.04	25.39	34.16	36.42	34.30	27.33	27.63	80~ 90	61.33	1601	56.9,56.9
100	85.21	77.68	77.41	73.54	75.47	68.68	76.89	68.49	90~100	53.63	1655	58.8,58.8
110	151.5	137.2	147.2	132.9	142.9	126.7	144.9	127.6	100~110	111.3	1766	62.7,62.7
120	216.2	180.3	213.2	167.2	209.1	164.0	212.7	159.2	110~120	164.5	1930	68.5,68.5
130	220.0	248.5	273.2	247.2	230.0	246.6	272.3	245.4	120~130	192.6	2123	75.4,75.4
140	248.4	289.7	306.2	262.8	255.4	276.1	308.9	293.9	130~140	203.4	2327	82.6,82.6
150	276.5	331.4	331.3	293.7	286.0	310.9	334.5	336.3	140~150	184.7	2511	89.2,89.2
160	369.7	389.8	362.9	351.9	366.6	366.2	379.3	388.0	150~160	156.1	2667	94.7,94.7
170	422.2	398.3	396.8	384.7	408.3	409.3	407.8	397.7	160~170	110.1	2777	98.6,98.6
180	427.3	412.5	409.5	405.5	428.9	413.8	410.6	406.6	170~180	38.89	2816	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 805.77 lm

%lum = 28.6%

%lamp = 28.6%

Conical surface Flux(120deg): 1199.9 lm

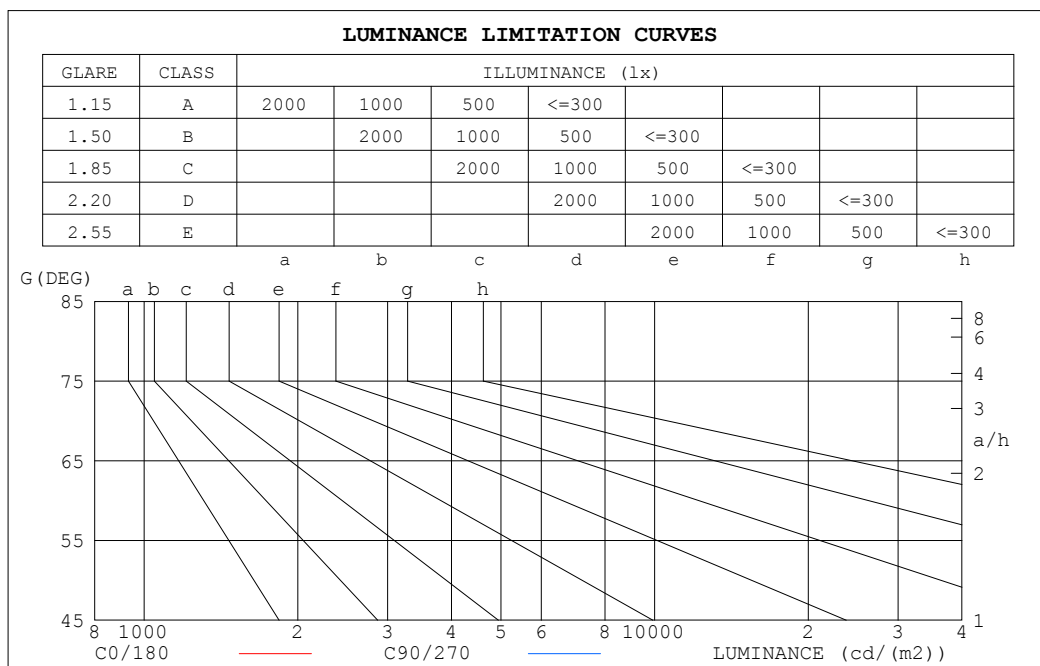
%lum = 42.6%

%lamp = 42.6%

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: 10.0deg/s
 Temperature:25.3℃
 Operators:DAMIN
 Test Date:2023-09-21

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-3000H_V1 SYSTEM V2.00.463
 Humidity:65.0%
 Test Distance:9.000m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES



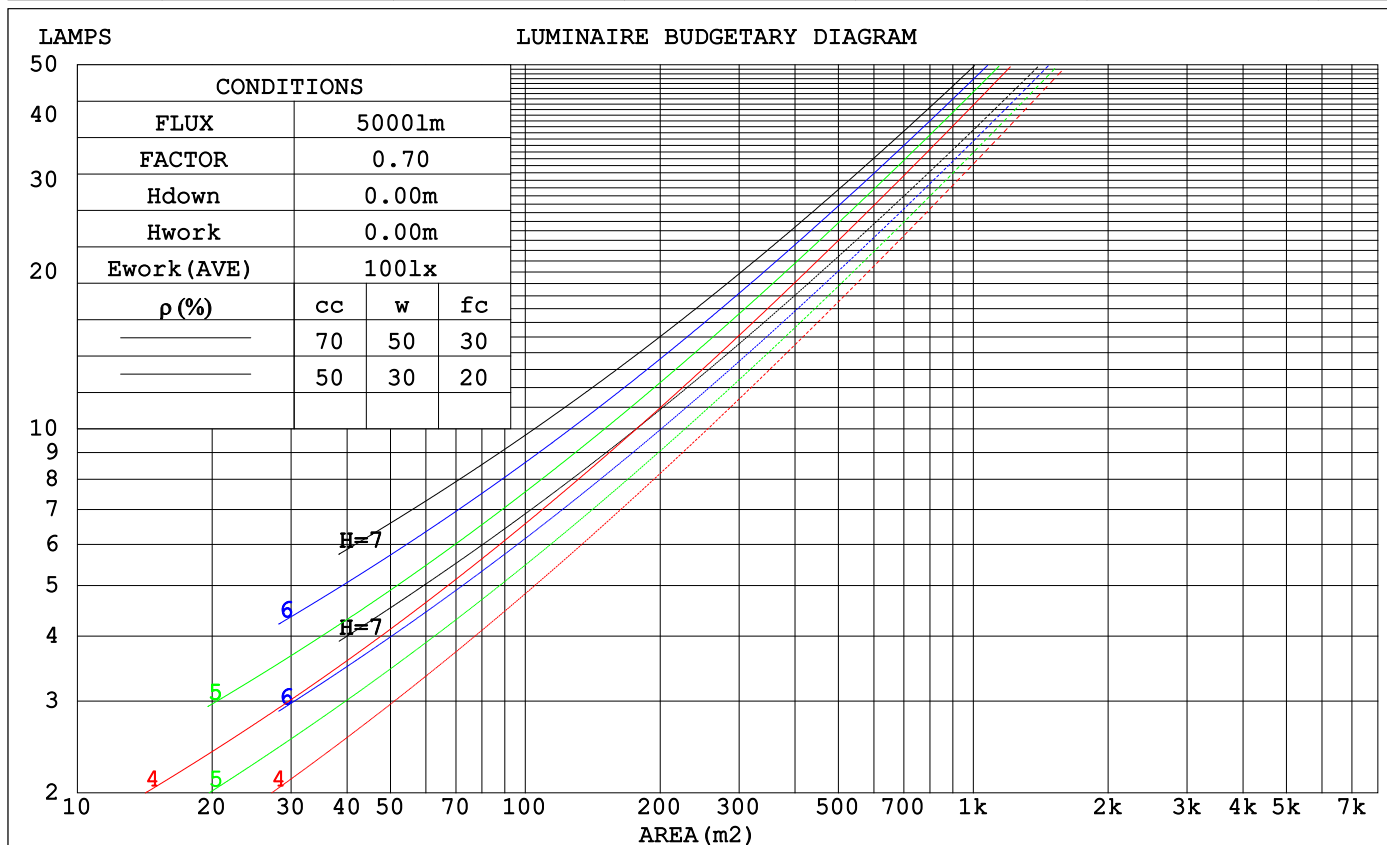
LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	784	771
80	623	629
75	612	616
70	620	621
65	629	628
60	636	633
55	644	637
50	649	641
45	653	644

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: 10.0deg/s
Temperature: 25.3°C
Operators: DAMIN
Test Date: 2023-09-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-3000H_V1 SYSTEM V2.00.463
Humidity: 65.0%
Test Distance: 9.000m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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	1.09	1.09	1.09	1.01	1.01	1.01	.87	.87	.87	.74	.74	.74	.62	.62	.62	.57
1.0	.94	.90	.86	.87	.84	.80	.75	.73	.70	.64	.62	.60	.54	.53	.51	.46
2.0	.81	.75	.69	.76	.70	.65	.65	.61	.57	.56	.53	.50	.47	.45	.42	.38
3.0	.71	.63	.57	.66	.60	.54	.57	.52	.48	.49	.45	.42	.41	.38	.36	.32
4.0	.63	.55	.48	.59	.51	.46	.51	.45	.40	.43	.39	.35	.37	.33	.30	.27
5.0	.56	.47	.41	.52	.45	.39	.45	.39	.35	.39	.34	.30	.33	.29	.26	.23
6.0	.50	.42	.36	.47	.39	.34	.41	.35	.30	.35	.30	.27	.30	.26	.23	.20
7.0	.45	.37	.31	.42	.35	.29	.37	.31	.26	.32	.27	.23	.27	.23	.20	.18
8.0	.41	.33	.27	.38	.31	.26	.34	.28	.23	.29	.24	.21	.25	.21	.18	.16
9.0	.37	.30	.24	.35	.28	.23	.31	.25	.21	.27	.22	.19	.23	.19	.16	.14
10.0	.34	.27	.22	.32	.25	.21	.28	.23	.19	.25	.20	.17	.21	.17	.15	.13



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: 10.0deg/s
Temperature:25.3℃
Operators:DAMIN
Test Date:2023-09-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-3000H_V1 SYSTEM V2.00.463
Humidity:65.0%
Test Distance:9.000m [K=1.0000]
Remarks:

WEC AND CCEC

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	.304	.173	.055	.284	.162	.051	.246	.141	.045	.211	.122	.039	.179	.104	.034	
2.0	.278	.152	.047	.260	.143	.044	.226	.125	.039	.194	.109	.034	.165	.093	.029	
3.0	.255	.136	.041	.238	.128	.038	.207	.112	.034	.178	.098	.030	.151	.084	.026	
4.0	.234	.122	.036	.219	.115	.034	.190	.101	.030	.164	.088	.027	.139	.075	.023	
5.0	.216	.110	.032	.202	.104	.030	.176	.092	.027	.151	.080	.024	.128	.069	.021	
6.0	.200	.100	.029	.187	.095	.027	.163	.084	.024	.140	.073	.021	.119	.063	.019	
7.0	.186	.092	.026	.174	.087	.025	.152	.077	.022	.131	.067	.020	.111	.058	.017	
8.0	.174	.085	.024	.163	.080	.023	.142	.071	.020	.122	.062	.018	.104	.053	.016	
9.0	.163	.079	.022	.153	.074	.021	.133	.066	.019	.115	.058	.016	.098	.050	.014	
10.0	.153	.073	.020	.144	.069	.019	.125	.061	.017	.108	.054	.015	.092	.046	.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	.519	.519	.519	.444	.444	.444	.303	.303	.303	.174	.174	.174	.056	.056	.056		
1.0	.511	.488	.466	.438	.419	.401	.299	.288	.278	.172	.167	.161	.055	.054	.052		
2.0	.504	.466	.433	.432	.401	.375	.296	.277	.261	.171	.161	.153	.055	.052	.050		
3.0	.497	.450	.412	.426	.388	.357	.293	.269	.250	.169	.157	.148	.054	.051	.048		
4.0	.490	.438	.397	.421	.378	.345	.289	.264	.243	.167	.154	.144	.054	.050	.047		
5.0	.483	.428	.387	.415	.370	.337	.286	.259	.238	.166	.152	.141	.053	.050	.047		
6.0	.477	.421	.380	.410	.364	.331	.283	.255	.234	.164	.150	.139	.053	.049	.046		
7.0	.471	.414	.375	.405	.359	.327	.280	.252	.231	.163	.148	.138	.053	.049	.046		
8.0	.465	.409	.371	.400	.355	.323	.277	.249	.229	.161	.147	.137	.052	.048	.045		
9.0	.459	.405	.368	.396	.351	.321	.274	.247	.228	.160	.146	.136	.052	.048	.045		
10.0	.454	.401	.365	.391	.348	.319	.271	.245	.226	.158	.145	.135	.051	.048	.045		

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: 10.0deg/s
Temperature:25.3℃
Operators:DAMIN
Test Date:2023-09-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-3000H_V1 SYSTEM V2.00.463
Humidity:65.0%
Test Distance:9.000m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

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	8.7	9.7	9.5	10.5	11.5	8.6	9.7	9.4	10.5	11.5
3H	10.3	11.2	11.1	12.0	13.1	10.3	11.2	11.1	12.0	13.1
4H	11.0	11.8	11.8	12.7	13.7	11.0	11.9	11.8	12.7	13.7
6H	11.6	12.4	12.4	13.2	14.3	11.6	12.4	12.4	13.2	14.3
8H	11.8	12.6	12.6	13.4	14.5	11.8	12.6	12.7	13.4	14.5
12H	12.0	12.8	12.9	13.6	14.7	12.0	12.8	12.9	13.6	14.7
4H 2H	9.2	10.1	10.0	10.9	11.9	9.2	10.0	10.0	10.9	11.9
3H	11.0	11.7	11.8	12.6	13.7	11.0	11.7	11.8	12.6	13.7
4H	11.8	12.5	12.7	13.4	14.5	11.8	12.5	12.7	13.4	14.5
6H	12.5	13.1	13.4	14.0	15.2	12.5	13.1	13.4	14.0	15.2
8H	12.8	13.4	13.7	14.3	15.4	12.8	13.4	13.8	14.3	15.5
12H	13.1	13.6	14.0	14.5	15.7	13.1	13.6	14.1	14.6	15.7
8H 4H	12.0	12.6	13.0	13.5	14.7	12.0	12.6	13.0	13.5	14.7
6H	12.9	13.4	13.9	14.3	15.5	12.9	13.4	13.9	14.3	15.5
8H	13.3	13.7	14.3	14.7	15.9	13.4	13.8	14.3	14.7	15.9
12H	13.8	14.1	14.8	15.1	16.3	13.8	14.1	14.8	15.1	16.4
12H 4H	12.0	12.5	13.0	13.5	14.6	12.0	12.5	13.0	13.5	14.6
6H	13.0	13.4	13.9	14.3	15.6	13.0	13.4	14.0	14.4	15.6
8H	13.5	13.8	14.4	14.8	16.0	13.5	13.8	14.5	14.8	16.0
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.3					+ 0.1 / - 0.3				

CIE Pub.117, 2816 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 3.6$)
Area: 0.785 m²

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: 10.0deg/s
Temperature:25.3°C
Operators:DAMIN
Test Date:2023-09-21

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-3000H_V1 SYSTEM V2.00.463
Humidity:65.0%
Test Distance:9.000m [K=1.0000]
Remarks:

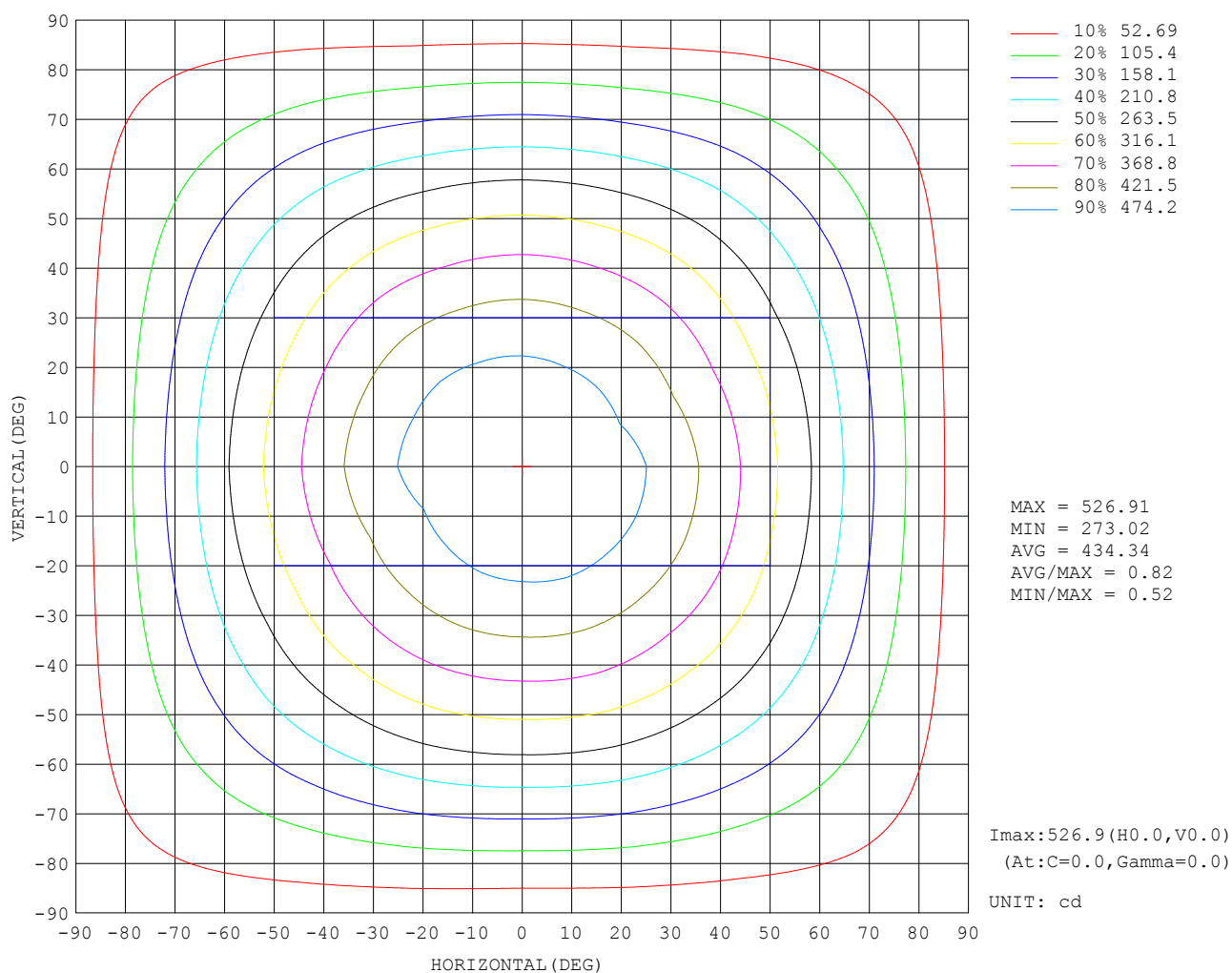
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	45	33	27	42	32	26	39	30	25	17
0.80	54	42	35	51	40	34	46	37	31	22
1.00	62	50	42	58	48	41	52	45	38	27
1.25	69	57	50	65	55	48	57	49	44	31
1.50	74	63	55	69	60	53	61	54	48	34
2.00	81	71	64	76	67	61	66	60	55	38
2.50	86	77	70	80	72	66	70	64	59	40
3.00	89	81	75	83	76	71	72	67	63	43
4.00	94	87	81	87	82	77	76	71	68	46
5.00	96	91	86	90	85	81	78	74	71	48
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: 10.0deg/s
 Temperature: 25.3°C
 Operators: DAMIN
 Test Date: 2023-09-21

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-3000H_V1 SYSTEM V2.00.463
 Humidity: 65.0%
 Test Distance: 9.000m [K=1.0000]
 Remarks:

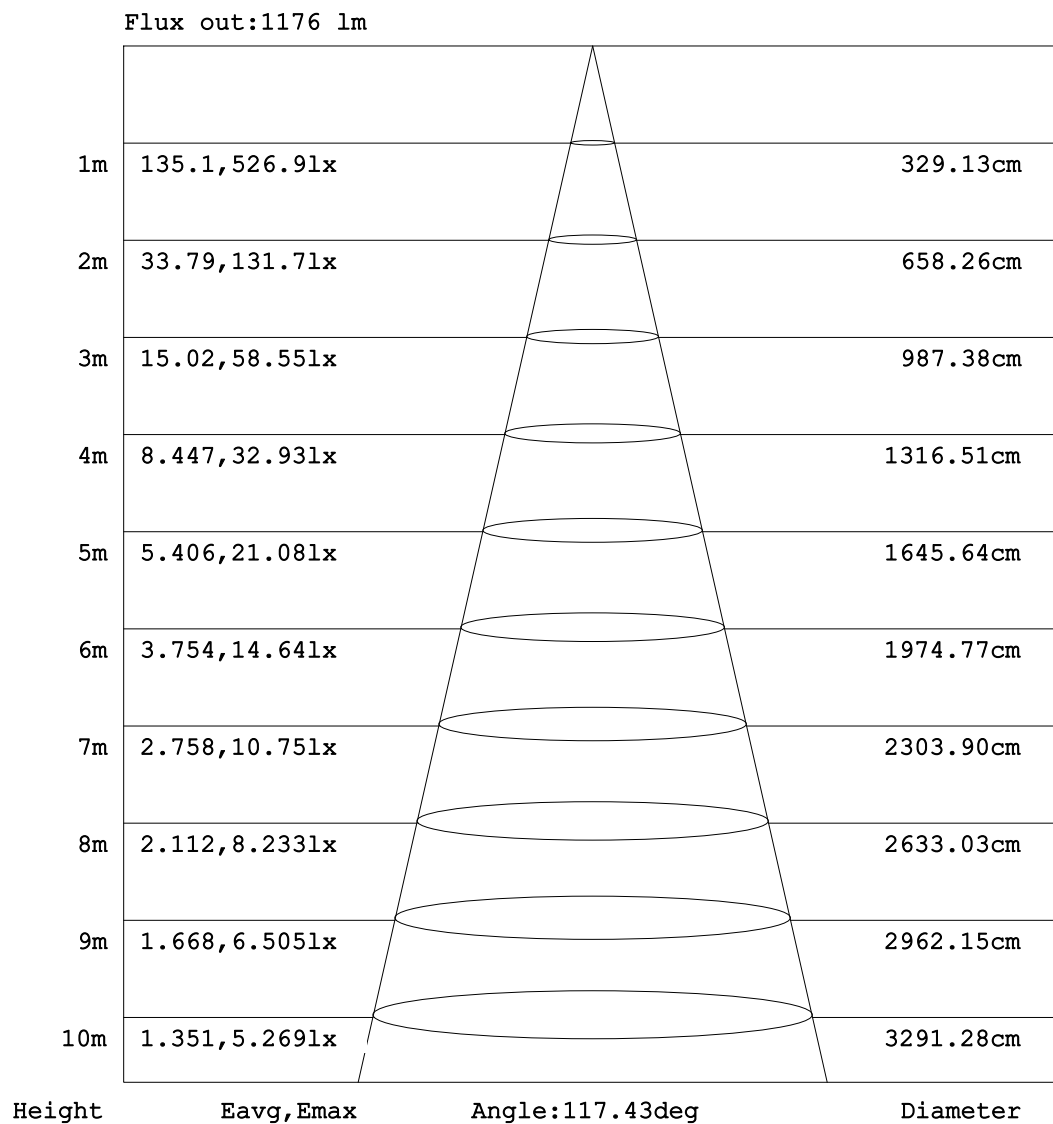
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: 10.0deg/s
Temperature:25.3°C
Operators:DAMIN
Test Date:2023-09-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-3000H_V1 SYSTEM V2.00.463
Humidity:65.0%
Test Distance:9.000m [K=1.0000]
Remarks:

AAI Figure

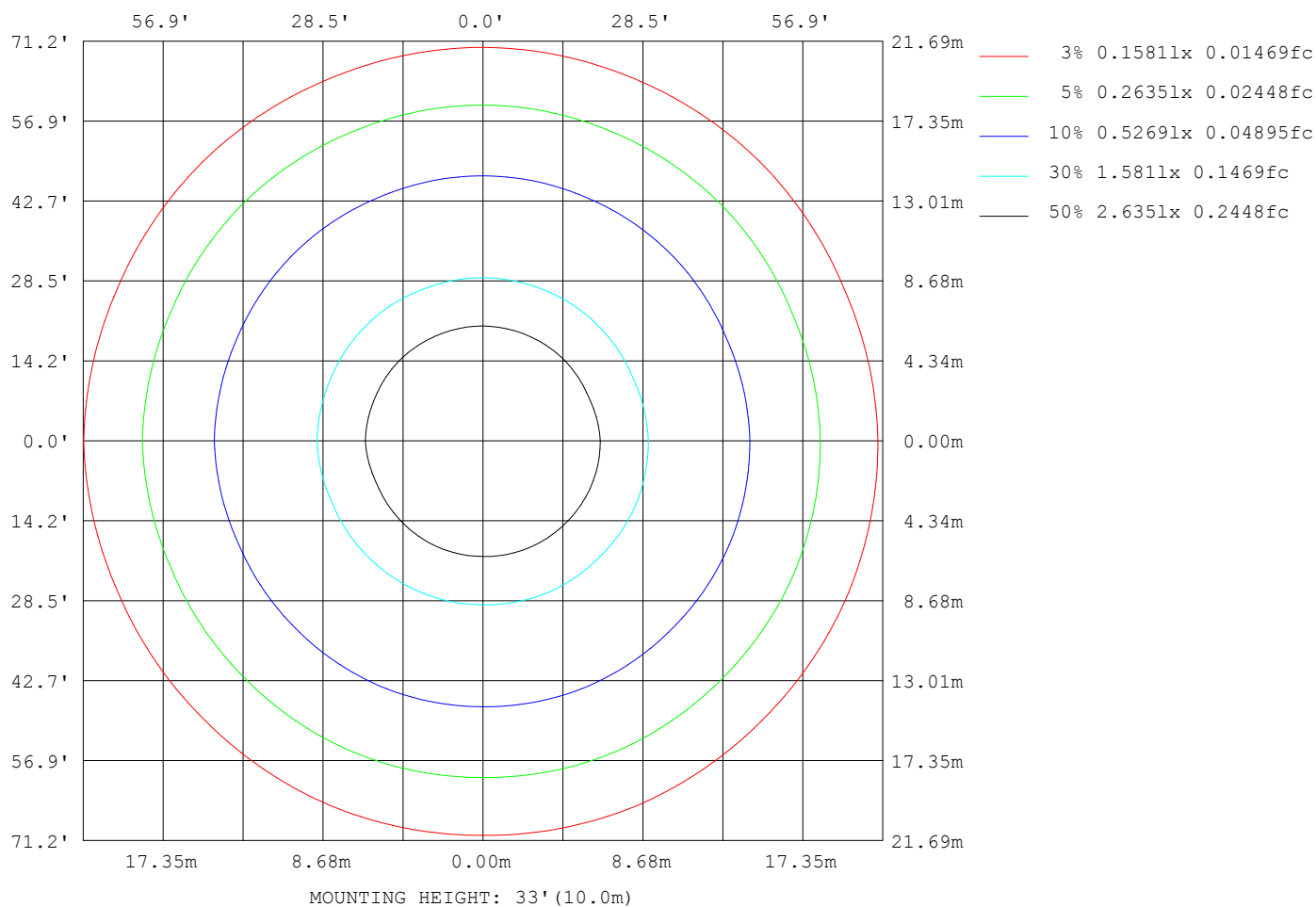


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: 10.0deg/s
Temperature: 25.3°C
Operators: DAMIN
Test Date: 2023-09-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-3000H_V1 SYSTEM V2.00.463
Humidity: 65.0%
Test Distance: 9.000m [K=1.0000]
Remarks:

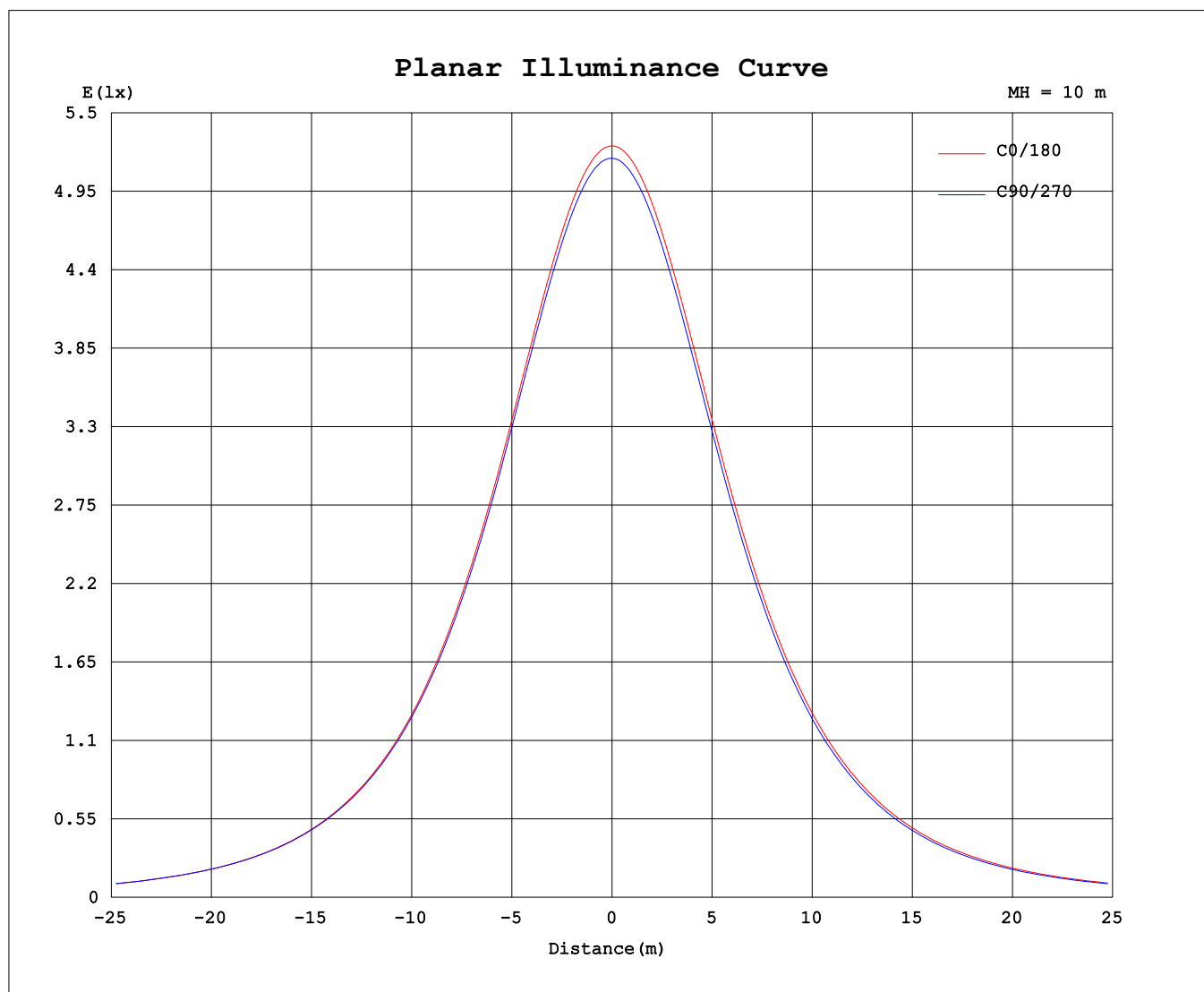
ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: 10.0deg/s
Temperature: 25.3°C
Operators: DAMIN
Test Date: 2023-09-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-3000H_V1 SYSTEM V2.00.463
Humidity: 65.0%
Test Distance: 9.000m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: 10.0deg/s
Temperature: 25.3°C
Operators: DAMIN
Test Date: 2023-09-21

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-3000H_V1 SYSTEM V2.00.463
Humidity: 65.0%
Test Distance: 9.000m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	527	525	523	520	518	516	514	512	527	525	523	520	518	516	514	512			
5	525	523	521	519	517	514	512	510	525	522	520	518	516	514	512	510			
10	519	518	515	513	510	509	506	504	519	515	514	510	509	507	506	504			
15	508	507	505	503	500	498	496	494	508	504	503	499	498	496	495	494			
20	493	493	490	489	486	484	481	479	493	489	488	484	483	481	481	479			
25	474	474	471	470	467	466	463	461	475	470	468	465	463	462	462	460			
30	452	451	449	448	444	443	440	439	452	447	445	441	441	439	440	438			
35	425	425	422	422	418	417	414	414	426	421	419	415	414	413	414	413			
40	395	396	392	393	389	389	386	385	397	391	390	386	386	384	385	384			
45	362	364	360	361	357	357	355	354	366	359	358	354	354	353	354	352			
50	327	328	326	327	323	323	320	321	332	325	324	321	321	319	320	319			
55	290	291	289	290	287	287	285	285	295	288	288	284	285	283	284	282			
60	250	251	250	251	248	249	247	248	257	250	250	246	246	244	246	243			
65	209	210	209	211	208	210	208	209	216	211	210	206	206	205	206	203			
70	166	168	167	169	167	169	167	169	175	170	169	165	166	164	165	163			
75	124	126	125	127	125	128	127	129	134	130	128	124	125	123	124	122			
80	84.9	86.6	85.5	87.3	85.8	88.3	88.5	91.0	94.4	90.8	89.4	85.7	86.1	84.1	85.3	83.3			
85	53.6	54.1	52.7	53.8	52.7	54.9	56.0	58.4	61.0	58.4	56.8	53.7	54.1	52.6	53.3	52.2			
90	35.2	33.2	31.0	26.6	25.4	32.9	34.2	35.0	36.4	35.0	34.3	25.6	27.3	28.9	27.6	32.9			
95	57.0	51.6	49.0	46.6	48.5	44.1	45.5	46.3	50.0	47.6	44.0	45.6	48.4	47.9	46.0	51.4			
100	85.2	77.7	77.7	75.4	77.4	73.0	73.5	70.3	75.5	71.8	68.7	69.4	76.9	72.2	68.5	77.5			
105	118	107	109	107	112	103	104	99.1	108	103	98.3	104	110	106	99.3	109			
110	151	141	137	139	147	135	133	132	143	138	127	135	145	132	128	139			
115	185	174	162	168	183	165	162	165	177	171	157	163	181	161	153	168			
120	216	207	180	189	213	186	167	197	209	202	164	187	213	189	159	194			
125	210	182	221	221	243	221	213	184	214	195	211	223	242	218	209	181			
130	220	227	248	257	273	256	247	227	230	238	247	255	272	253	245	226			
135	239	249	264	287	294	270	254	240	245	252	260	265	294	283	270	245			
140	248	262	290	310	306	280	263	249	255	266	276	280	309	306	294	255			
145	255	282	311	321	320	291	277	263	266	282	295	299	323	325	318	281			
150	276	307	331	335	331	301	294	282	286	302	311	313	335	336	336	307			
155	304	329	342	347	340	310	305	302	313	341	345	348	349	363	371	347			
160	370	395	390	367	363	360	352	352	367	375	366	380	379	374	388	393			
165	401	419	395	385	385	381	370	365	390	389	392	397	398	391	395	409			
170	422	418	398	402	397	393	385	379	408	400	409	409	408	403	398	407			
175	433	419	410	409	405	403	397	394	425	405	414	413	413	410	406	410			
180	427	416	413	412	409	409	406	409	429	414	414	410	411	408	407	408			

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: 10.0deg/s
Temperature:25.3℃
Operators:DAMIN
Test Date:2023-09-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-3000H_V1 SYSTEM V2.00.463
Humidity:65.0%
Test Distance:9.000m [K=1.0000]
Remarks: