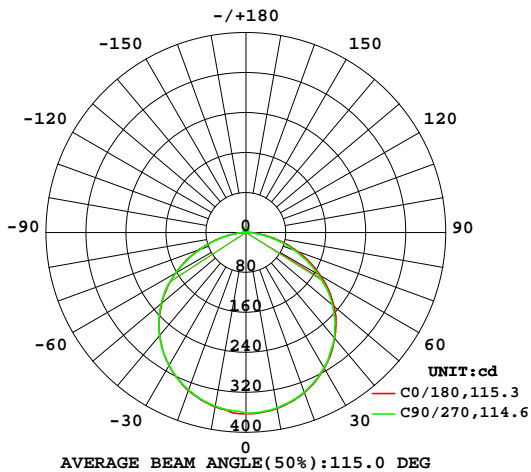


## LUMINAIRE PHOTOMETRIC TEST REPORT

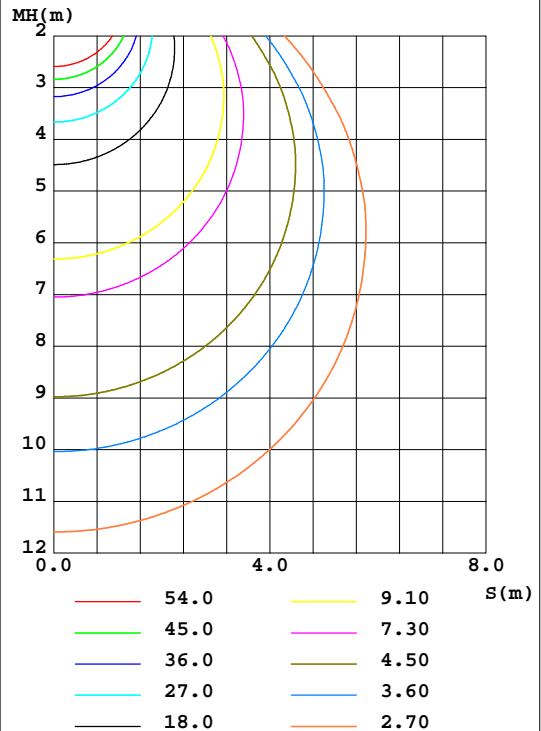
Test:U:48.00V I:0.2200A P:10.56W PF:1.000 Freq:0Hz Lamp Flux:1094.31x1 lm		
NAME: DS81504810NO	TYPE:	WEIGHT:
SPEC.:DS81504810NO-9SWCDW020WC0100	DIM.: 1000*10*1.5mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*10mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 103.63 lm/W			
MODEL	DS81504810NO	I <sub>max</sub> (cd)	362.7	S/MH(C0/180)	1.29
NOMINAL POWER(W)	10	LOR(%)	100.0	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	48	TOTAL FLUX(lm)	1094.3	h UP,DN(C0-180)	1.6,48.8
NOMINAL FLUX(lm)	1094.31	CIE CLASS	DIRECT	h UP,DN(C180-360)	1.5,48.1
LAMPS INSIDE	1	h up(%)	3.1	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	48	h down(%)	96.9	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2023-11-27

g Range: 0 - 180DEG  
Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.375m [K=1.0000]  
Remarks:

## ZONAL FLUX DIAGRAM

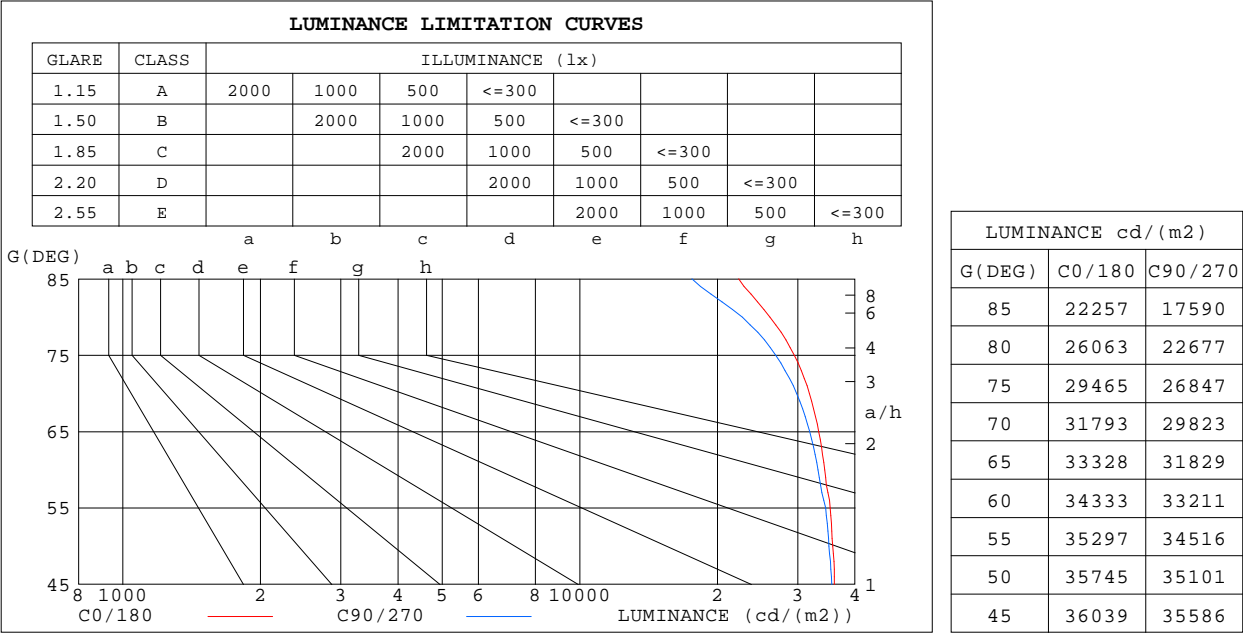
## ZONAL FLUX DIAGRAM:

g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum,lamp
10	357.4	355.0	356.3	353.2	354.0	355.5	352.7	356.2	0- 10	34.18	34.18	3.12,3.12
20	341.0	338.9	340.0	336.0	336.5	337.6	335.5	339.5	10- 20	98.25	132.4	12.1,12.1
30	313.8	312.0	312.5	307.6	307.8	309.0	307.5	312.2	20- 30	150.1	282.5	25.8,25.8
40	276.4	274.4	275.3	268.7	268.8	269.8	269.3	274.4	30- 40	182.9	465.4	42.5,42.5
50	229.8	227.0	225.6	219.8	220.3	221.1	221.7	227.3	40- 50	192.3	657.8	60.1,60.1
60	171.7	170.4	166.1	161.9	162.9	162.6	162.4	170.0	50- 60	175.2	833.0	76.1,76.1
70	108.7	107.0	102.0	98.10	99.08	99.40	96.30	107.7	60- 70	133.0	966.0	88.3,88.3
80	45.26	43.63	39.38	36.51	36.64	37.62	37.11	45.19	70- 80	74.29	1040	95.1,95.1
90	4.755	4.665	1.728	3.571	2.682	3.383	2.675	5.719	80- 90	19.88	1060	96.9,96.9
100	2.692	2.693	2.768	2.885	2.423	2.494	2.399	2.372	90-100	2.668	1063	97.1,97.1
110	3.890	3.893	4.033	4.097	3.574	3.613	3.586	3.345	100-110	3.338	1066	97.4,97.4
120	5.181	5.164	5.360	5.380	4.871	4.892	4.968	4.586	110-120	4.351	1071	97.8,97.8
130	6.558	6.496	6.614	6.669	6.237	6.271	6.278	5.954	120-130	5.131	1076	98.3,98.3
140	7.837	7.796	7.759	7.899	7.508	7.560	7.594	7.279	130-140	5.432	1081	98.8,98.8
150	8.881	8.828	8.802	8.851	8.708	8.736	8.827	8.455	140-150	5.157	1086	99.3,99.3
160	9.792	9.673	9.587	9.642	9.744	9.647	9.626	9.390	150-160	4.252	1090	99.7,99.7
170	10.54	10.36	10.25	10.28	10.54	10.35	10.25	10.09	160-170	2.826	1093	99.9,99.9
180	10.94	10.75	10.55	10.57	10.94	10.75	10.60	10.55	170-180	1.002	1094	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2023-11-27

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.375m [K=1.0000]  
Remarks:

LUMINANCE LIMITATION CURVES

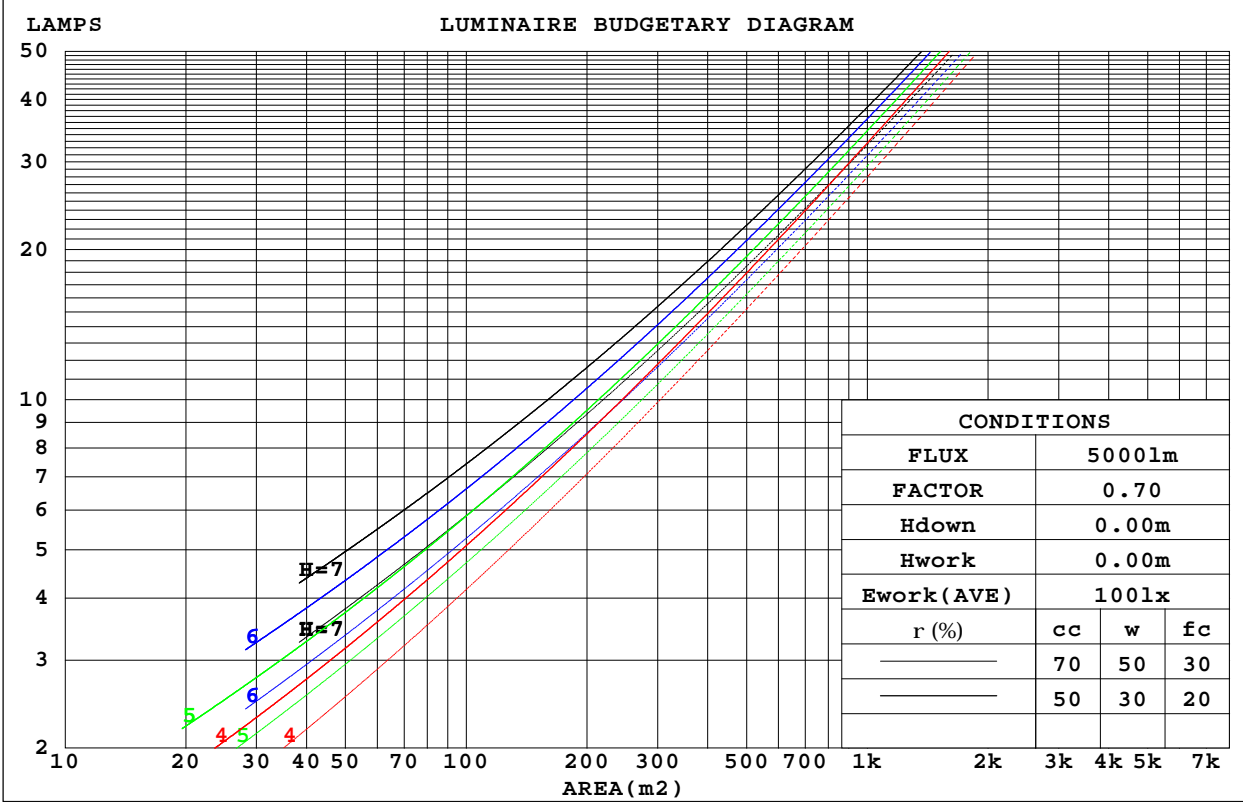


C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2023-11-27

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.375m [K=1.0000]  
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio                      Coefficients of Utilization(CU)															
0.0	1.18	1.18	1.18	1.15	1.15	1.15	1.09	1.09	1.09	1.04	1.04	1.04	.99	.99	.99	.97
1.0	1.03	.99	.95	1.01	.97	.93	.96	.93	.90	.91	.89	.86	.87	.85	.83	.81
2.0	.90	.83	.77	.88	.81	.76	.84	.78	.74	.80	.75	.72	.76	.73	.69	.67
3.0	.79	.70	.64	.77	.69	.63	.73	.67	.62	.70	.65	.60	.67	.63	.59	.56
4.0	.70	.61	.54	.68	.60	.53	.65	.58	.52	.62	.56	.51	.60	.55	.50	.48
5.0	.62	.53	.46	.61	.52	.46	.58	.51	.45	.56	.49	.44	.54	.48	.44	.41
6.0	.56	.47	.40	.55	.46	.40	.53	.45	.39	.51	.44	.39	.49	.43	.38	.36
7.0	.50	.42	.36	.50	.41	.35	.48	.40	.35	.46	.39	.34	.44	.38	.34	.32
8.0	.46	.37	.32	.45	.37	.31	.44	.36	.31	.42	.35	.31	.41	.35	.30	.28
9.0	.42	.34	.28	.41	.34	.28	.40	.33	.28	.39	.32	.28	.38	.32	.27	.25
10.0	.39	.31	.26	.38	.31	.26	.37	.30	.25	.36	.30	.25	.35	.29	.25	.23



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:JYH  
 Test Date:2023-11-27

g Range: 0 - 180DEG  
 g Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:65.0%  
 Test Distance:10.375m [K=1.0000]  
 Remarks:

## WEC AND CCEC

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.309	.176	.056	.301	.172	.055	.286	.164	.052	.273	.157	.050	.260	.151	.049	
2.0	.291	.160	.049	.284	.157	.048	.271	.151	.047	.259	.145	.045	.247	.140	.044	
3.0	.270	.144	.043	.263	.141	.042	.252	.136	.041	.241	.132	.040	.230	.128	.039	
4.0	.249	.129	.038	.243	.127	.038	.233	.123	.037	.223	.120	.036	.214	.116	.035	
5.0	.230	.117	.034	.225	.116	.034	.216	.112	.033	.207	.109	.032	.199	.106	.032	
6.0	.213	.107	.031	.209	.106	.030	.200	.103	.030	.193	.100	.029	.185	.097	.029	
7.0	.199	.098	.028	.195	.097	.028	.187	.095	.027	.180	.092	.027	.173	.090	.026	
8.0	.185	.091	.025	.182	.090	.025	.175	.087	.025	.168	.085	.025	.162	.083	.024	
9.0	.174	.084	.023	.171	.083	.023	.164	.081	.023	.158	.079	.023	.153	.078	.022	
10.0	.163	.078	.022	.160	.077	.022	.155	.076	.021	.149	.074	.021	.144	.073	.021	

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Ceiling Cavity Exitance Coefficients(CCEC)												
0.0	.214	.214	.214	.183	.183	.183	.125	.125	.125	.072	.072	.072	.023	.023	.023	
1.0	.204	.180	.158	.175	.155	.136	.120	.106	.094	.069	.062	.055	.022	.020	.018	
2.0	.196	.156	.122	.168	.134	.106	.115	.093	.074	.066	.054	.043	.021	.017	.014	
3.0	.189	.139	.099	.162	.120	.085	.111	.083	.060	.064	.048	.035	.021	.016	.012	
4.0	.181	.125	.083	.155	.108	.072	.107	.075	.051	.062	.044	.030	.020	.014	.010	
5.0	.174	.115	.072	.149	.100	.062	.103	.070	.044	.060	.041	.026	.019	.013	.009	
6.0	.167	.107	.064	.143	.092	.055	.099	.065	.039	.057	.038	.023	.019	.012	.008	
7.0	.160	.100	.058	.138	.087	.050	.095	.061	.036	.055	.036	.021	.018	.012	.007	
8.0	.154	.094	.053	.132	.082	.047	.091	.057	.033	.053	.034	.020	.017	.011	.007	
9.0	.147	.089	.050	.127	.077	.044	.088	.054	.031	.051	.032	.018	.017	.011	.006	
10.0	.142	.085	.047	.122	.074	.041	.085	.052	.029	.049	.031	.017	.016	.010	.006	

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: JYH  
 Test Date: 2023-11-27

g Range: 0 - 180DEG  
 g Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity: 65.0%  
 Test Distance: 10.375m [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	24.9	26.4	25.2	26.6	26.9	24.8	26.3	25.1	26.5	26.8
3H	26.5	27.8	26.8	28.1	28.4	26.3	27.6	26.6	27.9	28.2
4H	27.1	28.4	27.4	28.7	29.0	26.8	28.1	27.2	28.4	28.8
6H	27.5	28.7	27.9	29.1	29.4	27.2	28.4	27.6	28.7	29.1
8H	27.6	28.8	28.0	29.2	29.5	27.3	28.5	27.7	28.8	29.2
12H	27.7	28.8	28.1	29.2	29.6	27.3	28.5	27.7	28.8	29.2
4H 2H	25.5	26.8	25.9	27.1	27.4	25.4	26.7	25.8	27.0	27.3
3H	27.2	28.4	27.6	28.7	29.1	27.1	28.2	27.5	28.6	28.9
4H	28.0	29.0	28.4	29.4	29.8	27.8	28.8	28.2	29.2	29.6
6H	28.5	29.4	29.0	29.9	30.3	28.2	29.2	28.7	29.6	30.0
8H	28.7	29.6	29.2	30.0	30.4	28.4	29.2	28.8	29.7	30.1
12H	28.8	29.6	29.3	30.0	30.5	28.5	29.2	28.9	29.7	30.2
8H 4H	28.2	29.1	28.7	29.5	30.0	28.0	28.9	28.5	29.3	29.8
6H	28.9	29.6	29.4	30.1	30.6	28.6	29.4	29.1	29.8	30.3
8H	29.2	29.8	29.7	30.3	30.8	28.9	29.5	29.4	30.0	30.5
12H	29.4	29.9	29.9	30.4	30.9	29.0	29.5	29.5	30.0	30.6
12H 4H	28.2	29.0	28.7	29.4	29.9	28.0	28.8	28.5	29.3	29.7
6H	29.0	29.6	29.5	30.1	30.6	28.7	29.3	29.2	29.8	30.3
8H	29.2	29.8	29.8	30.3	30.8	29.0	29.5	29.5	30.0	30.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 1094 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 0.3$ )

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2023-11-27

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.375m [K=1.0000]  
Remarks:

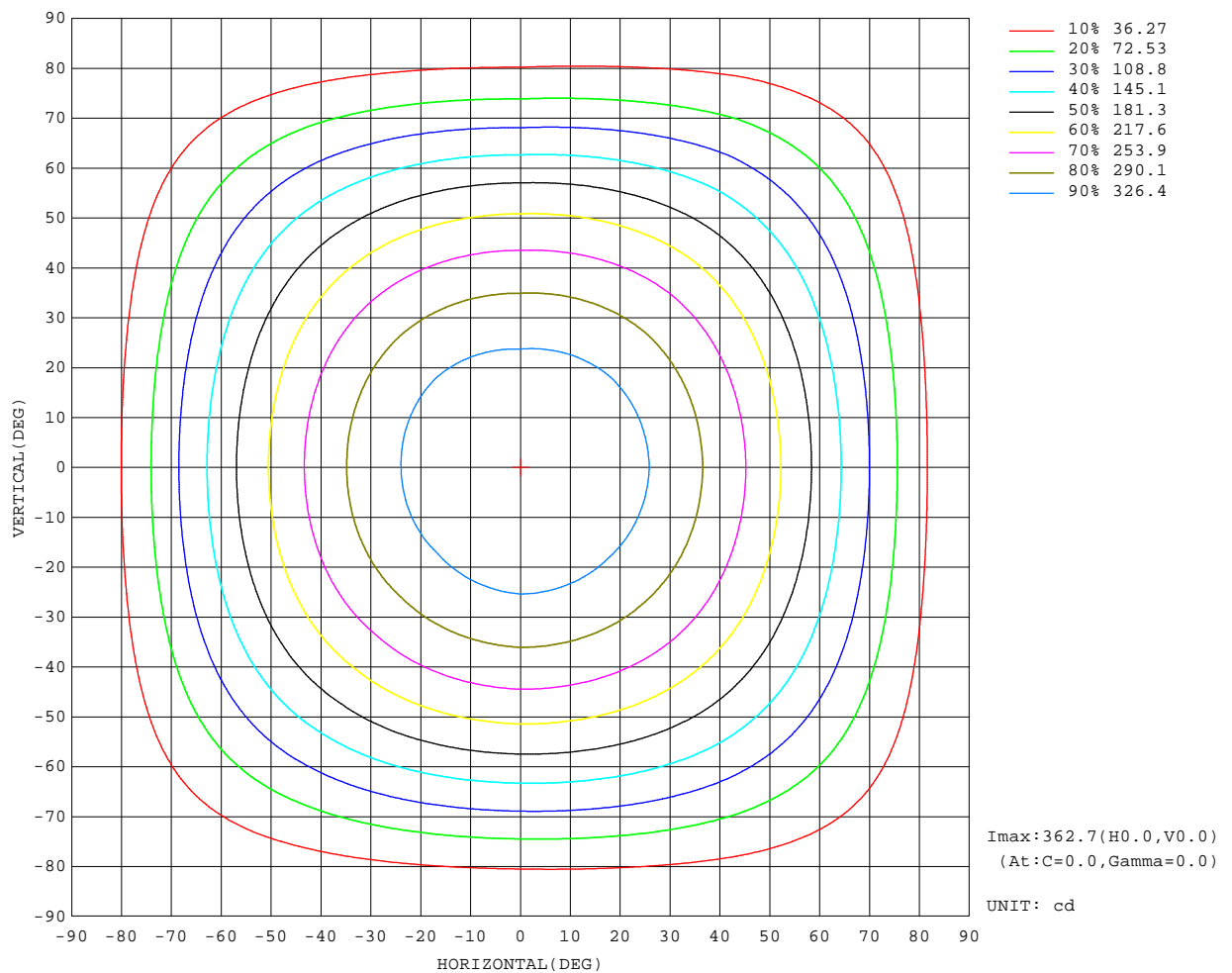
## UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	56	45	38	55	44	37	54	44	37	31
0.80	66	55	47	65	54	47	63	53	46	39
1.00	75	63	56	73	63	56	71	64	55	48
1.25	82	71	64	80	70	63	77	69	62	55
1.50	87	77	70	85	76	69	82	74	68	60
2.00	94	85	79	92	84	78	88	81	76	67
2.50	98	90	84	96	88	83	91	85	80	71
3.00	101	94	89	99	92	87	94	89	85	75
4.00	105	99	95	103	97	93	98	94	90	80
5.00	108	103	99	105	101	97	100	96	93	83
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: JYH  
Test Date: 2023-11-27

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity: 65.0%  
Test Distance: 10.375m [K=1.0000]  
Remarks:

## ISOCANDELA DIAGRAM

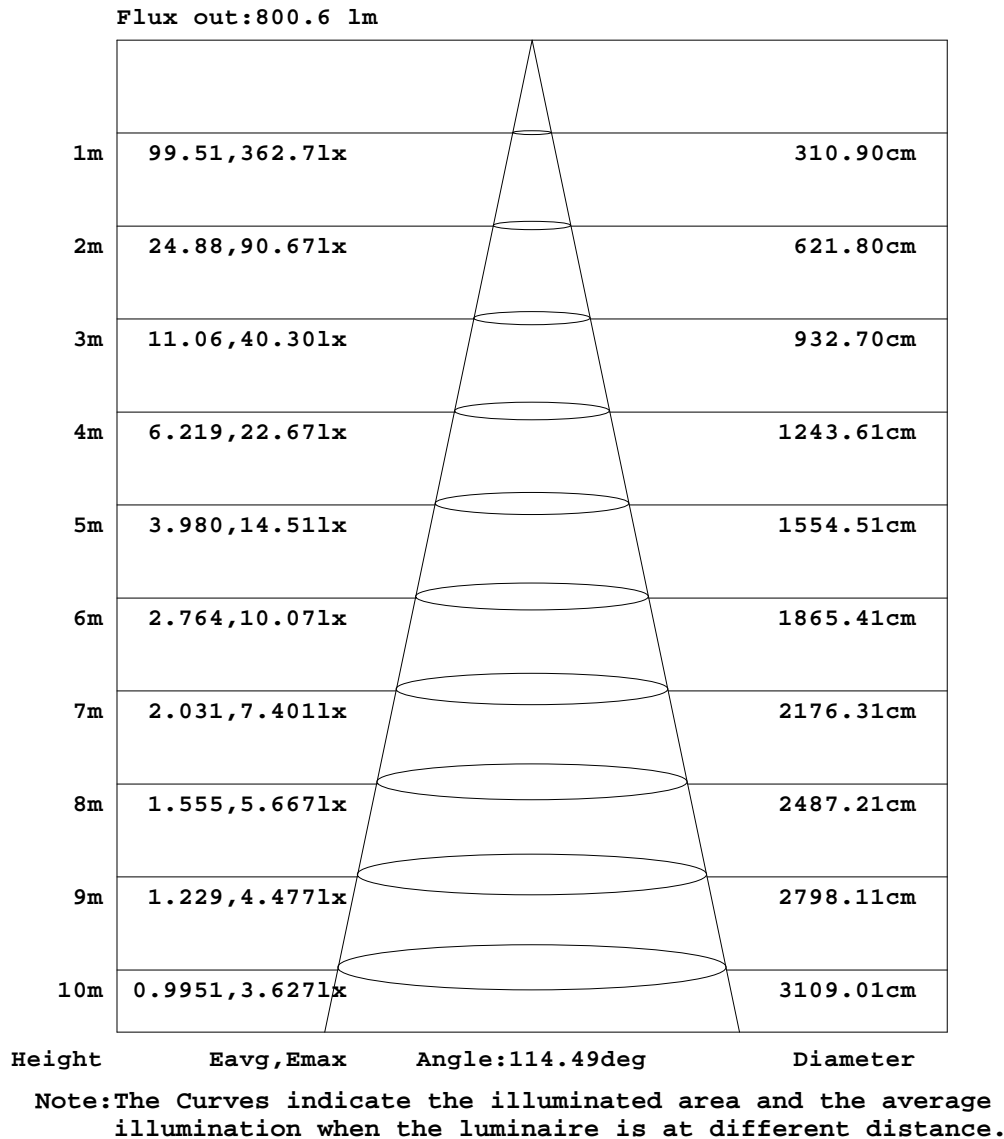


C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: JYH  
Test Date: 2023-11-27

deg Range: 0 - 180DEG  
Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity: 65.0%  
Test Distance: 10.375m [K=1.0000]  
Remarks:



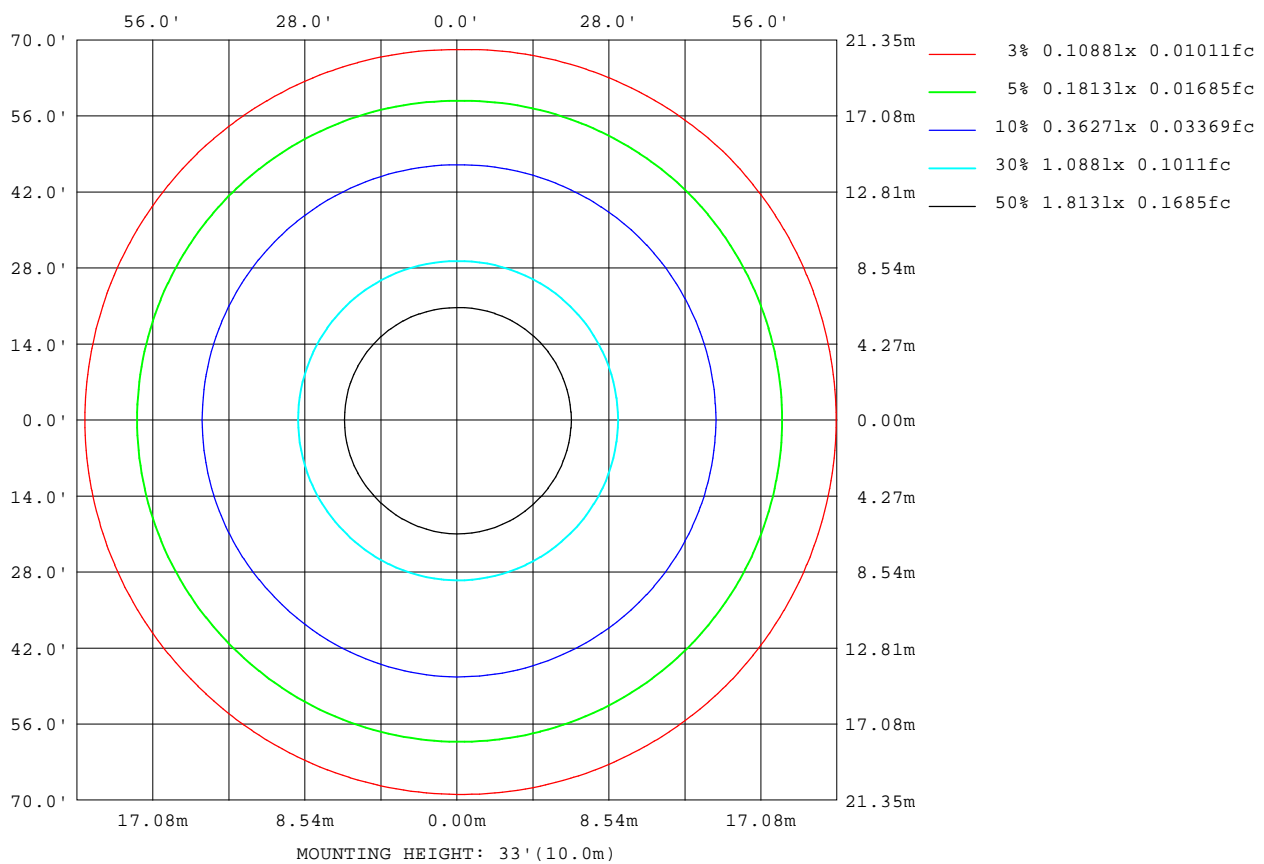
## AAI Figure



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2023-11-27

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.375m [K=1.0000]  
Remarks:

## ISOLUX DIAGRAM



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: JYH  
Test Date: 2023-11-27

g Range: 0 - 180DEG  
Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity: 65.0%  
Test Distance: 10.375m [K=1.0000]  
Remarks:

## LED Avg.L Report

Test:U:48.00V I:0.2200A P:10.56W PF:1.000 Freq:0Hz Lamp Flux:1094.31x1 lm		
NAME: DS81504810NO	TYPE:	WEIGHT:
SPEC.:DS81504810NO-9SWCDW020WC0100	DIM.: 1000*10*1.5mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*10mm	Shielding Angle:

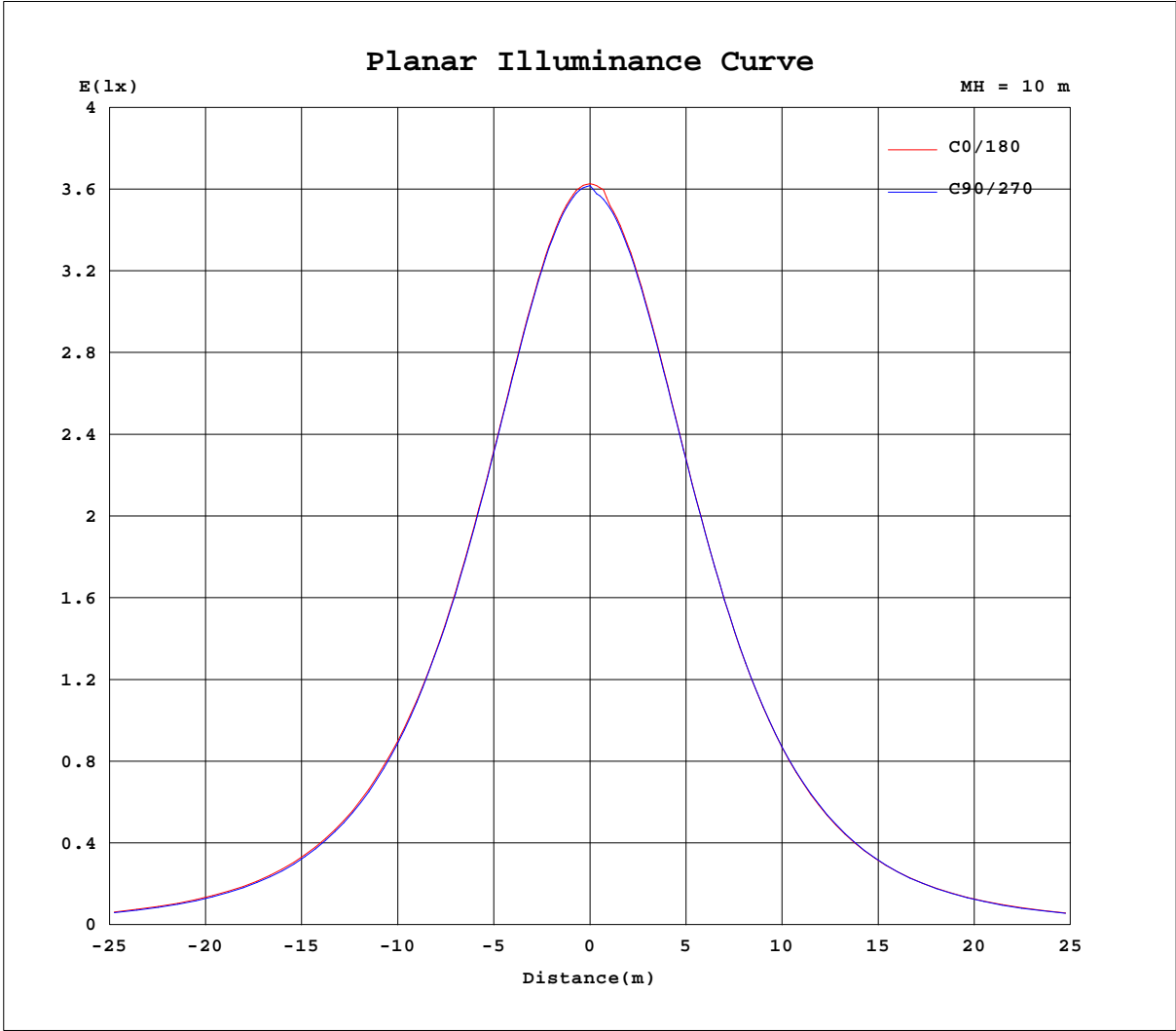
AvgL	cd/m2
L_0~180(65)av	32212
L_0~180(75)av	27584
L_0~180(85)av	18711
L_90~270(65)av	31179
L_90~270(75)av	26003
L_90~270(85)av	18240
L_45(65)av	31981
L_45(75)av	27342
L_45(85)av	19275

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2023-11-27

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.375m [K=1.0000]  
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JYH  
Test Date:2023-11-27

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.375m [K=1.0000]  
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: cd

C(°) g (°)	0	45	90	135	180	225	270	315										
0	363	362	362	362	363	362	362	362										
5	361	360	360	358	360	360	357	360										
10	357	355	356	353	354	356	353	356										
15	351	348	350	346	347	348	345	349										
20	341	339	340	336	336	338	336	340										
25	329	327	328	323	323	325	323	327										
30	314	312	312	308	308	309	307	312										
35	296	294	294	289	290	291	290	294										
40	276	274	275	269	269	270	269	274										
45	255	253	252	246	246	247	247	252										
50	230	227	226	220	220	221	222	227										
55	202	200	198	192	193	194	194	200										
60	172	170	166	162	163	163	162	170										
65	141	139	135	130	131	131	129	139										
70	109	107	102	98.1	99.1	99.4	96.3	108										
75	76.3	74.3	69.5	65.9	66.5	67.4	65.1	75.4										
80	45.3	43.6	39.4	36.5	36.6	37.6	37.1	45.2										
85	19.4	18.6	15.3	13.9	13.2	14.4	16.5	20.4										
90	4.75	4.66	1.73	3.57	2.68	3.38	2.68	5.72										
95	2.39	2.30	2.19	2.41	2.02	2.20	1.83	2.34										
100	2.69	2.69	2.77	2.88	2.42	2.49	2.40	2.37										
105	3.25	3.28	3.44	3.48	2.98	3.03	2.98	2.84										
110	3.89	3.89	4.03	4.10	3.57	3.61	3.59	3.35										
115	4.55	4.53	4.69	4.73	4.20	4.22	4.25	3.93										
120	5.18	5.16	5.36	5.38	4.87	4.89	4.97	4.59										
125	5.88	5.84	6.00	6.03	5.56	5.60	5.63	5.27										
130	6.56	6.50	6.61	6.67	6.24	6.27	6.28	5.95										
135	7.24	7.17	7.22	7.31	6.88	6.93	6.95	6.63										
140	7.84	7.80	7.76	7.90	7.51	7.56	7.59	7.28										
145	8.40	8.34	8.30	8.41	8.13	8.19	8.33	7.89										
150	8.88	8.83	8.80	8.85	8.71	8.74	8.83	8.45										
155	9.36	9.27	9.20	9.27	9.25	9.23	9.23	8.96										
160	9.79	9.67	9.59	9.64	9.74	9.65	9.63	9.39										
165	10.2	10.1	9.95	9.99	10.2	10.0	9.97	9.77										
170	10.5	10.4	10.2	10.3	10.5	10.3	10.2	10.1										
175	10.8	10.6	10.4	10.5	10.8	10.5	10.5	10.4										
180	10.9	10.7	10.6	10.6	10.9	10.7	10.6	10.5										

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: JYH  
 Test Date: 2023-11-27

g Range: 0 - 180DEG  
 g Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity: 65.0%  
 Test Distance: 10.375m [K=1.0000]  
 Remarks: