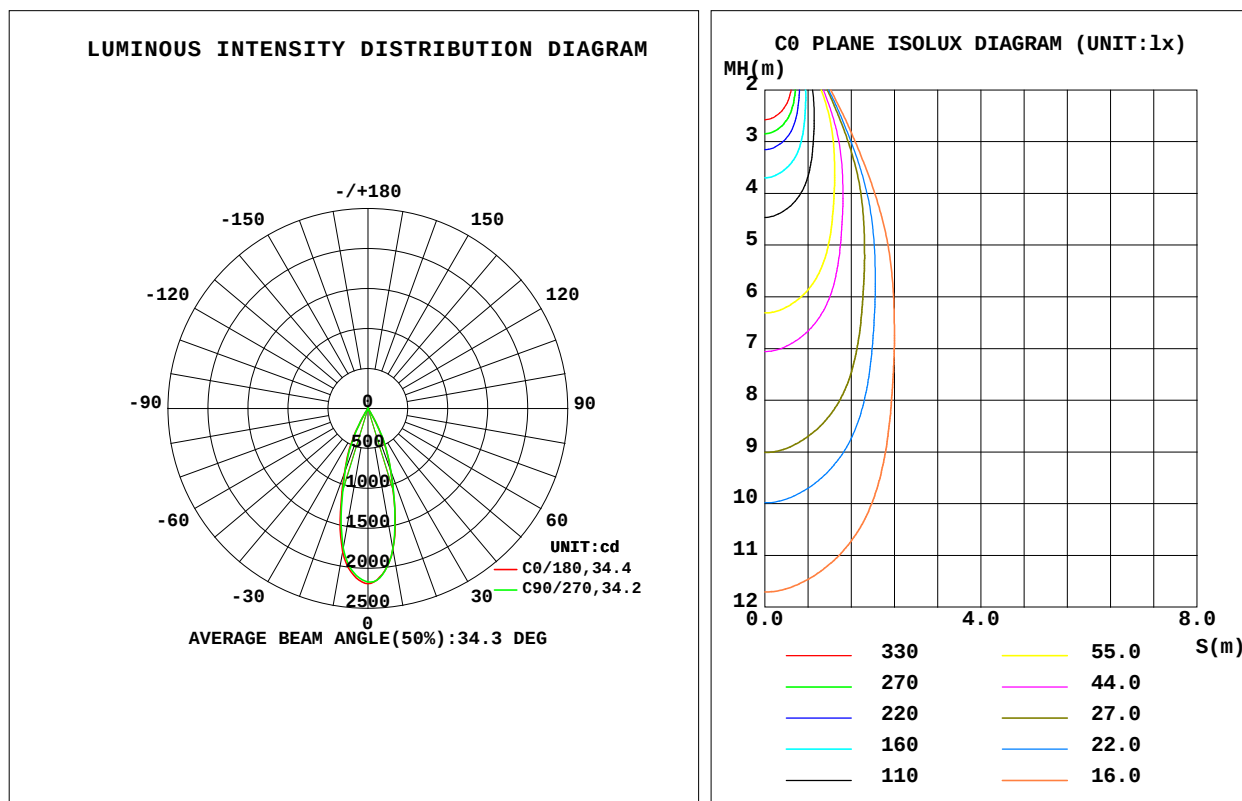


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:48.00V I:0.2480A P:11.90W PF:1.000 Freq:0Hz Lamp Flux:843.58lx1 lm		
NAME: V0TH20G 12W 30°	TYPE:	WEIGHT:
SPEC.:	DIM.: 220*20mm	SERIAL No.:
MFR.:	SUR.:220*20mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 70.89 lm/W			
MODEL		I _{max} (cd)	2192	S/MH(C0/180)	0.56
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	0.57
RATED VOLTAGE(V)	48	TOTAL FLUX(lm)	843.58	h UP, DN(C0-180)	1.9,48.3
NOMINAL FLUX(lm)	843.581	CIE CLASS	DIRECT	h UP, DN(C180-360)	1.6,48.2
LAMPS INSIDE	1	h up(%)	3.5	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	48	h down(%)	96.5	CIBSE SHR MAX	0.60



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2024-04-09

Range: 0 - 180DEG
Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.375m [K=1.0000]
Remarks:



ZONAL FLUX DIAGRAM

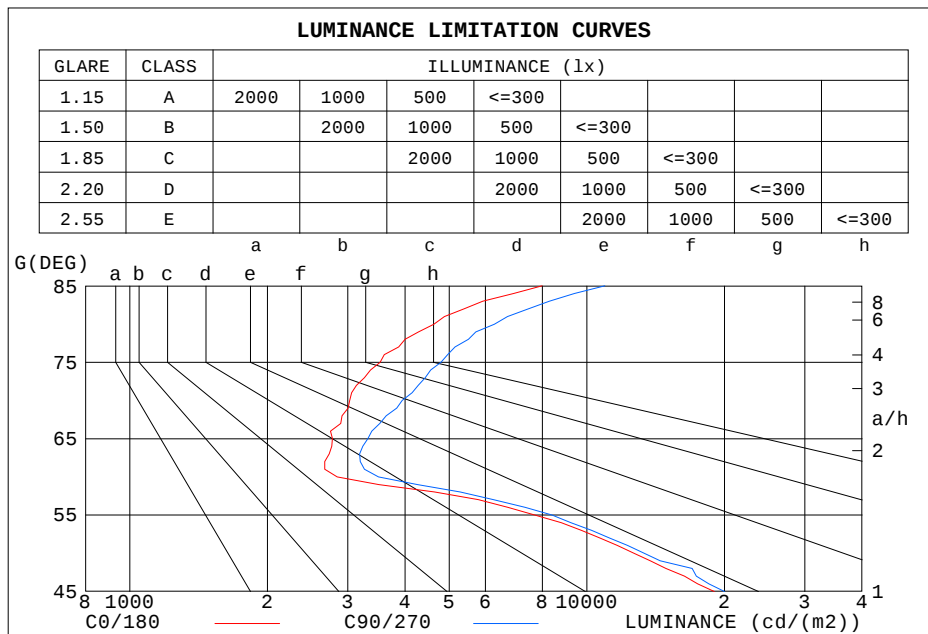
ZONAL FLUX DIAGRAM:

g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum, lamp
10	1795	1804	1793	1789	1820	1785	1781	1765	0- 10	189.3	189.3	22.4, 22.4
20	837.7	858.7	851.2	852.7	876.1	843.8	842.1	833.7	10- 20	356.3	545.7	64.7, 64.7
30	171.3	188.7	187.2	188.7	199.7	185.4	184.0	187.2	20- 30	227.6	773.3	91.7, 91.7
40	10.49	11.31	11.26	11.32	11.44	11.21	11.26	11.16	30- 40	32.28	805.6	95.5, 95.5
50	3.580	3.711	3.772	3.695	4.477	3.728	3.735	3.734	40- 50	5.147	810.7	96.1, 96.1
60	0.6258	0.6411	0.7701	0.6533	0.6772	0.7341	0.6946	0.7505	50- 60	1.870	812.6	96.3, 96.3
70	0.4559	0.4497	0.5937	0.4677	0.4737	0.4978	0.4737	0.5159	60- 70	0.5495	813.1	96.4, 96.4
80	0.3538	0.3535	0.4797	0.3837	0.3298	0.4079	0.3718	0.4378	70- 80	0.4675	813.6	96.4, 96.4
90	0.2639	0.2818	0.3780	0.3239	0.2818	0.3000	0.3118	0.3179	80- 90	0.3706	814.0	96.5, 96.5
100	0.2936	0.3539	0.4497	0.4198	0.3179	0.2938	0.3479	0.3118	90-100	0.3517	814.3	96.5, 96.5
110	0.4734	0.4742	0.4737	0.5037	0.3838	0.3658	0.4018	0.3537	100-110	0.4065	814.7	96.6, 96.6
120	1.168	1.122	1.055	1.106	0.7325	0.7492	0.7990	0.7435	110-120	0.5838	815.3	96.7, 96.7
130	3.865	3.571	3.515	3.519	2.365	2.491	2.532	2.491	120-130	1.609	816.9	96.8, 96.8
140	9.106	8.578	8.512	8.490	6.424	6.691	6.665	6.657	130-140	3.924	820.9	97.3, 97.3
150	15.53	14.83	14.71	14.68	13.12	13.22	13.16	13.13	140-150	6.685	827.5	98.1, 98.1
160	20.24	19.83	19.64	19.63	19.56	19.29	19.24	19.14	150-160	7.798	835.3	99, 99
170	23.16	22.67	22.44	22.45	23.58	22.71	22.73	22.52	160-170	6.011	841.4	99.7, 99.7
180	24.92	24.25	24.00	24.00	25.03	24.16	24.12	23.96	170-180	2.231	843.6	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:2024-04-09

g Range: 0 - 180DEG
Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.375m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES



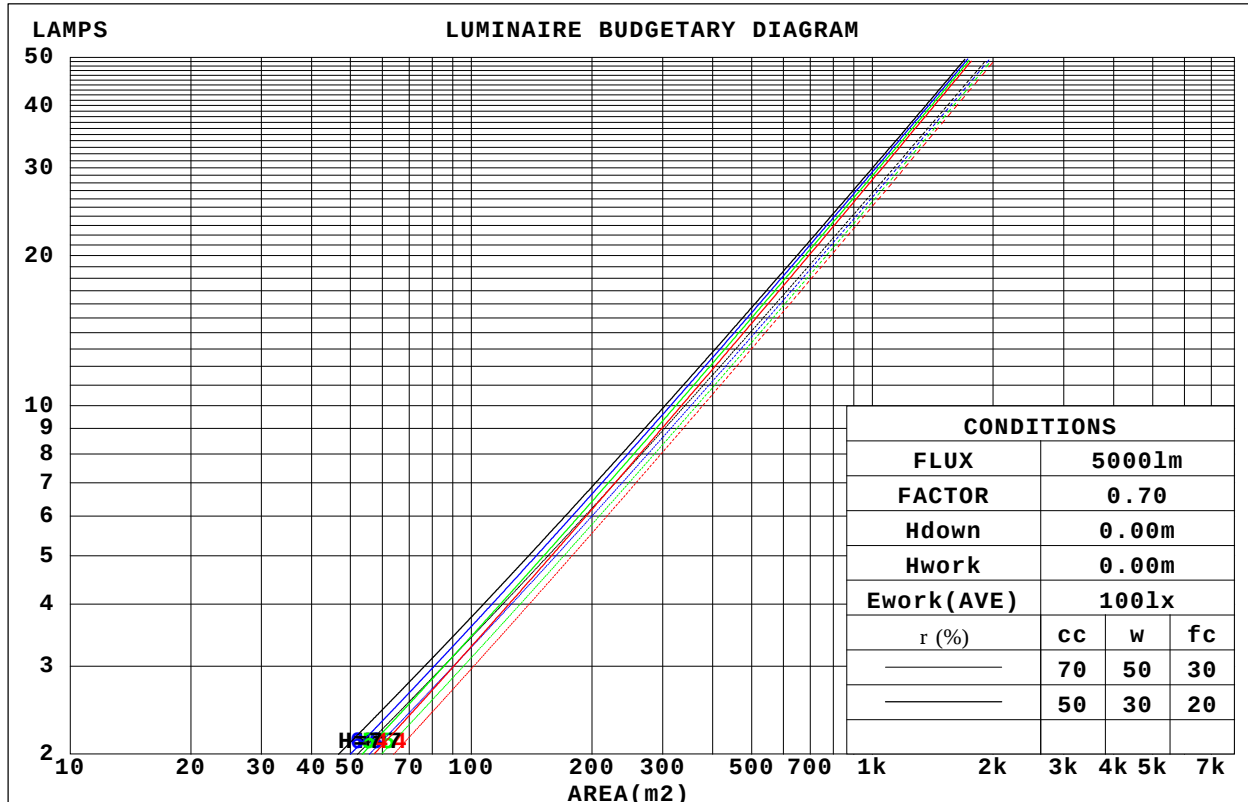
LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	7977	10951
80	4631	6279
75	3528	4792
70	3029	3945
65	2774	3322
60	2844	3500
55	7693	8396
50	12660	13338
45	19018	20003

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JYH
Test Date: 2024-04-09

Range: 0 - 180DEG
Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 10.375m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

r CC	80%			70%			50%			30%			10%			0
r W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r fc	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	.96
1.0	1.11	1.09	1.07	1.09	1.07	1.05	1.04	1.03	1.01	.90	.99	.98	.96	.95	.94	.92
2.0	1.05	1.02	.99	1.03	1.00	.98	.90	.97	.95	.96	.94	.93	.93	.91	.90	.88
3.0	.90	.96	.93	.98	.95	.92	.95	.92	.90	.93	.90	.88	.90	.88	.86	.85
4.0	.95	.91	.87	.94	.90	.87	.91	.88	.85	.89	.86	.84	.87	.85	.83	.81
5.0	.91	.86	.83	.90	.85	.82	.88	.84	.81	.86	.83	.80	.84	.81	.79	.78
6.0	.87	.82	.79	.86	.82	.78	.84	.80	.78	.83	.79	.77	.81	.78	.76	.75
7.0	.83	.79	.75	.83	.78	.75	.81	.77	.74	.80	.76	.74	.78	.75	.73	.72
8.0	.80	.75	.72	.79	.75	.72	.78	.74	.71	.77	.73	.71	.76	.73	.70	.69
9.0	.77	.72	.69	.76	.72	.69	.75	.71	.69	.74	.71	.68	.73	.70	.68	.67
10.0	.74	.70	.67	.74	.69	.66	.73	.69	.66	.72	.68	.66	.71	.68	.65	.64



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JYH
 Test Date: 2024-04-09

g Range: 0 - 180DEG
 Interval: 1.0DEG
 Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 10.375m [K=1.0000]
 Remarks:



WEC AND CCEC

r _{CC}	80%			70%			50%			30%			10%			0
r _W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r _{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.152	.086	.027	.144	.082	.026	.130	.074	.024	.116	.067	.022	.104	.060	.019	
2.0	.142	.078	.024	.135	.074	.023	.123	.068	.021	.112	.063	.020	.101	.057	.018	
3.0	.133	.071	.021	.127	.068	.021	.117	.063	.019	.107	.059	.018	.098	.054	.017	
4.0	.125	.065	.019	.120	.063	.019	.112	.059	.018	.103	.055	.017	.095	.052	.016	
5.0	.119	.060	.018	.114	.059	.017	.107	.055	.016	.099	.052	.016	.092	.049	.015	
6.0	.113	.056	.016	.109	.055	.016	.102	.052	.015	.096	.050	.015	.090	.047	.014	
7.0	.107	.053	.015	.104	.052	.015	.098	.050	.014	.092	.047	.014	.087	.045	.013	
8.0	.103	.050	.014	.100	.049	.014	.094	.047	.013	.089	.045	.013	.084	.043	.013	
9.0	.098	.048	.013	.096	.047	.013	.091	.045	.013	.086	.043	.012	.082	.042	.012	
10.0	.095	.045	.013	.092	.045	.012	.088	.043	.012	.083	.041	.012	.079	.040	.011	

r _{CC}	80%			70%			50%			30%			10%			0
r _W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r _{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Ceiling Cavity Exitance Coefficients(CCEC)												
0.0	.217	.217	.217	.186	.186	.186	.127	.127	.127	.073	.073	.073	.023	.023	.023	
1.0	.196	.184	.174	.168	.158	.150	.115	.109	.103	.066	.063	.060	.021	.020	.019	
2.0	.179	.160	.143	.154	.138	.124	.105	.095	.086	.061	.055	.051	.019	.018	.017	
3.0	.165	.141	.121	.142	.121	.105	.097	.084	.074	.056	.049	.043	.018	.016	.014	
4.0	.154	.126	.104	.132	.109	.090	.091	.076	.064	.052	.044	.038	.017	.014	.012	
5.0	.144	.114	.091	.124	.098	.079	.085	.069	.056	.049	.040	.033	.016	.013	.011	
6.0	.136	.104	.081	.117	.090	.071	.080	.063	.050	.047	.037	.030	.015	.012	.010	
7.0	.129	.096	.073	.111	.083	.064	.076	.058	.045	.044	.034	.027	.014	.011	.009	
8.0	.122	.090	.067	.105	.078	.058	.073	.055	.041	.042	.032	.025	.014	.011	.008	
9.0	.117	.084	.062	.101	.073	.054	.070	.051	.038	.041	.030	.023	.013	.010	.008	
10.0	.112	.080	.058	.097	.069	.050	.067	.049	.036	.039	.029	.021	.013	.009	.007	

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2024-04-09

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE G0-2000A_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	14.2	14.9	14.4	15.1	15.3	14.9	15.6	15.1	15.8	16.0
3H	14.0	14.7	14.3	14.9	15.2	14.8	15.4	15.1	15.7	15.9
4H	14.0	14.6	14.3	14.9	15.1	14.7	15.3	15.0	15.6	15.9
6H	13.9	14.5	14.3	14.8	15.1	14.7	15.3	15.0	15.6	15.9
8H	13.9	14.5	14.2	14.8	15.1	14.7	15.3	15.0	15.6	15.9
12H	13.9	14.4	14.3	14.8	15.1	14.7	15.3	15.1	15.6	15.9
4H 2H	13.9	14.6	14.2	14.8	15.1	14.6	15.3	15.0	15.5	15.8
3H	13.8	14.3	14.1	14.6	15.0	14.5	15.1	14.9	15.4	15.7
4H	13.7	14.2	14.1	14.6	14.9	14.5	15.0	14.9	15.3	15.7
6H	13.7	14.1	14.1	14.5	14.9	14.5	14.9	14.9	15.3	15.7
8H	13.7	14.1	14.1	14.5	15.0	14.5	14.9	14.9	15.3	15.8
12H	13.7	14.1	14.2	14.5	15.0	14.6	14.9	15.0	15.4	15.8
8H 4H	13.6	14.0	14.0	14.4	14.8	14.3	14.7	14.8	15.1	15.6
6H	13.6	13.9	14.1	14.4	14.9	14.4	14.7	14.8	15.1	15.6
8H	13.6	13.9	14.1	14.4	14.9	14.4	14.7	14.9	15.2	15.7
12H	13.7	14.0	14.2	14.5	15.0	14.6	14.8	15.1	15.3	15.9
12H 4H	13.5	13.9	14.0	14.3	14.8	14.3	14.7	14.7	15.1	15.5
6H	13.5	13.9	14.1	14.3	14.8	14.3	14.6	14.8	15.1	15.6
8H	13.6	13.9	14.1	14.4	14.9	14.4	14.6	14.9	15.1	15.7
Variations with the observer position at spacings:										
S = 1.0H	+ 2.4 / - 3.3					+ 2.6 / - 2.9				
1.5H	+ 3.8 / - 2.8					+ 4.1 / - 2.6				
2.0H	+ 3.2 / - 2.5					+ 3.0 / - 2.0				

CIE Pub.117, 843.6 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.6)

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2024-04-09

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.375m [K=1.0000]
Remarks:

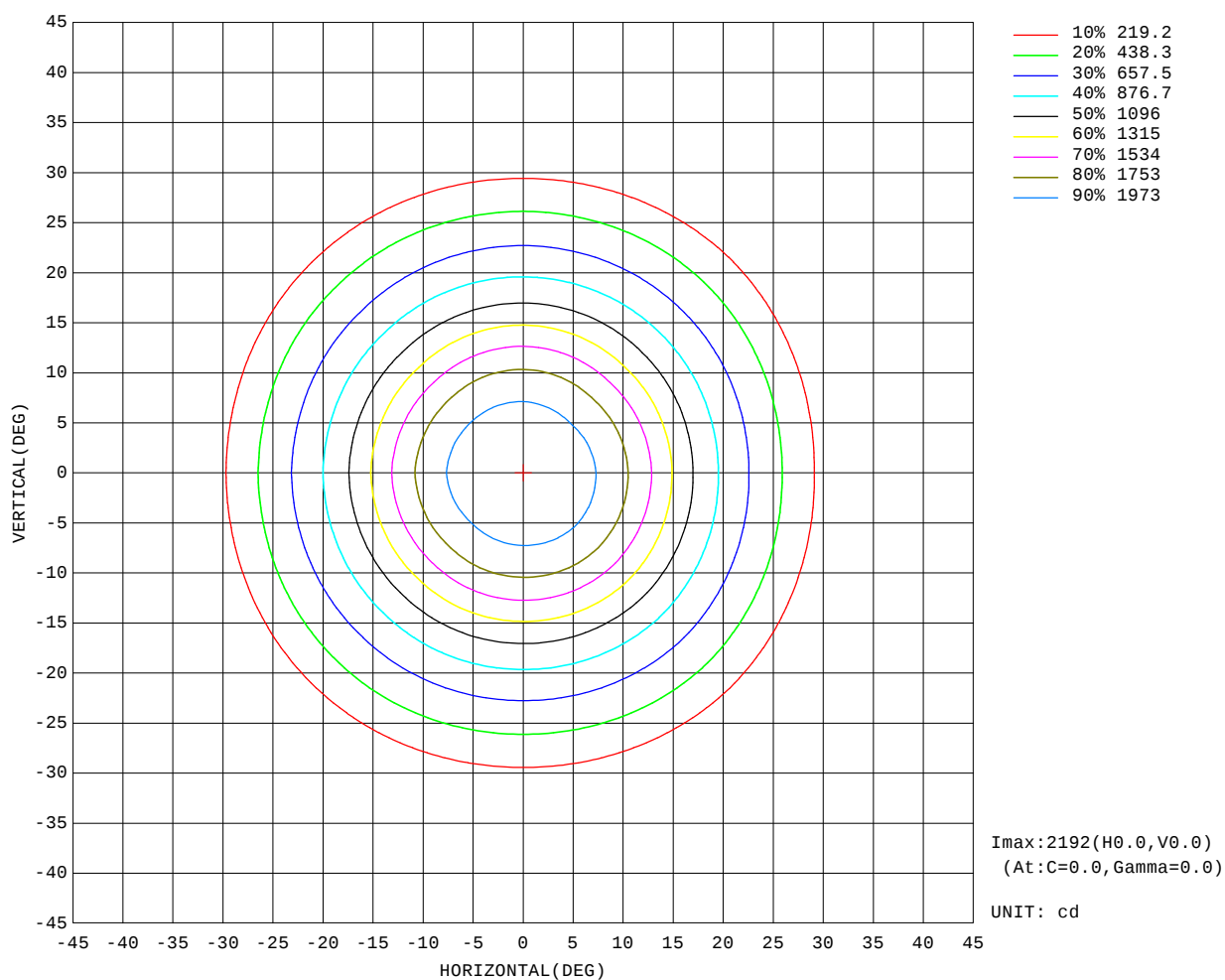
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	89	83	80	88	83	79	87	82	79	76
0.80	96	90	87	95	90	87	94	89	86	83
1.00	100	95	91	99	94	91	97	93	90	86
1.25	103	99	95	102	98	95	100	96	94	89
1.50	106	101	98	104	101	98	102	99	96	91
2.00	108	104	101	107	103	100	103	101	98	93
2.50	110	106	103	108	105	102	104	102	100	93
3.00	111	108	105	109	106	104	105	103	101	94
4.00	113	111	109	111	109	107	107	105	104	96
5.00	115	112	111	112	110	109	107	106	105	96
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: 2024-04-09

Range: 0 - 180DEG
Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 10.375m [K=1.0000]
Remarks:

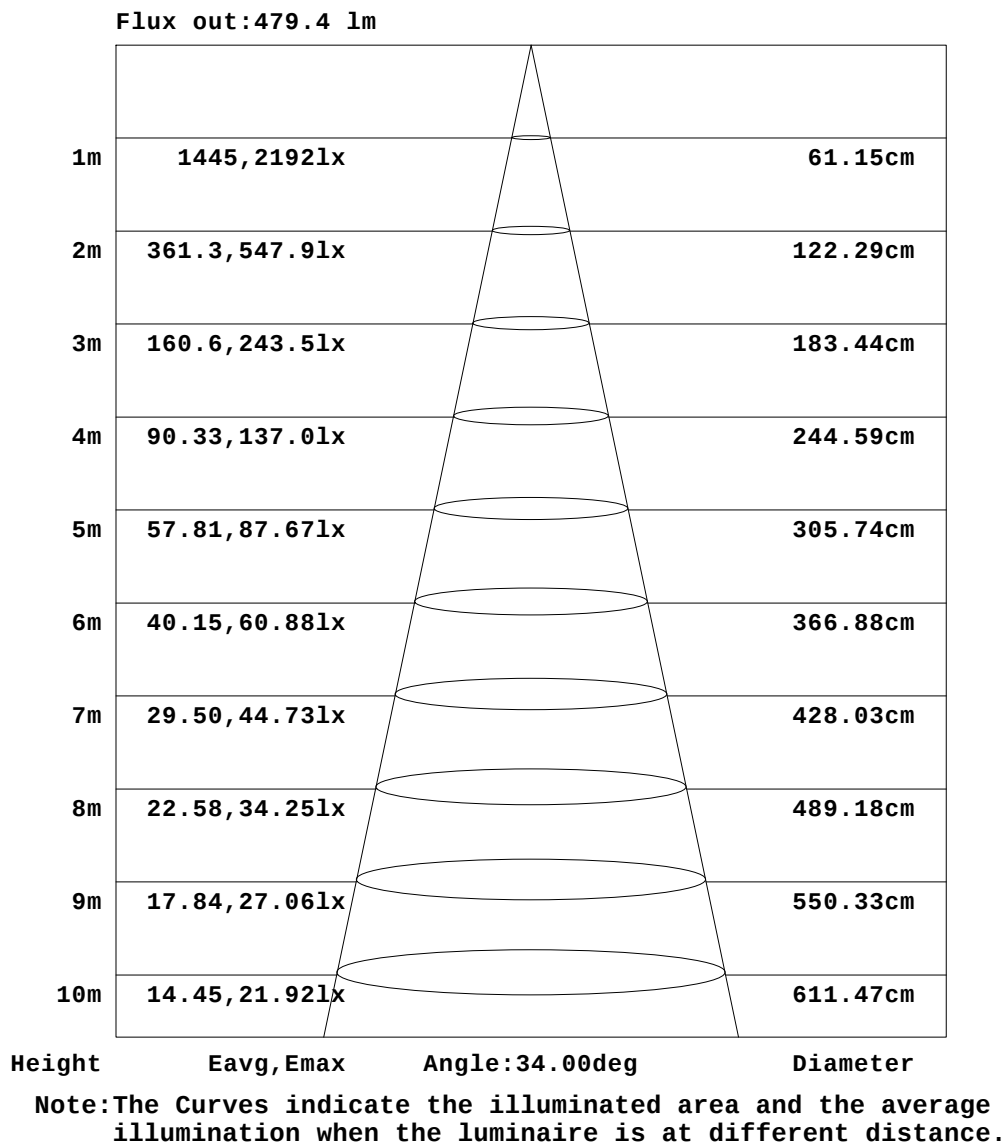
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JYH
Test Date: 2024-04-09

Range: 0 - 180DEG
Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 10.375m [K=1.0000]
Remarks:

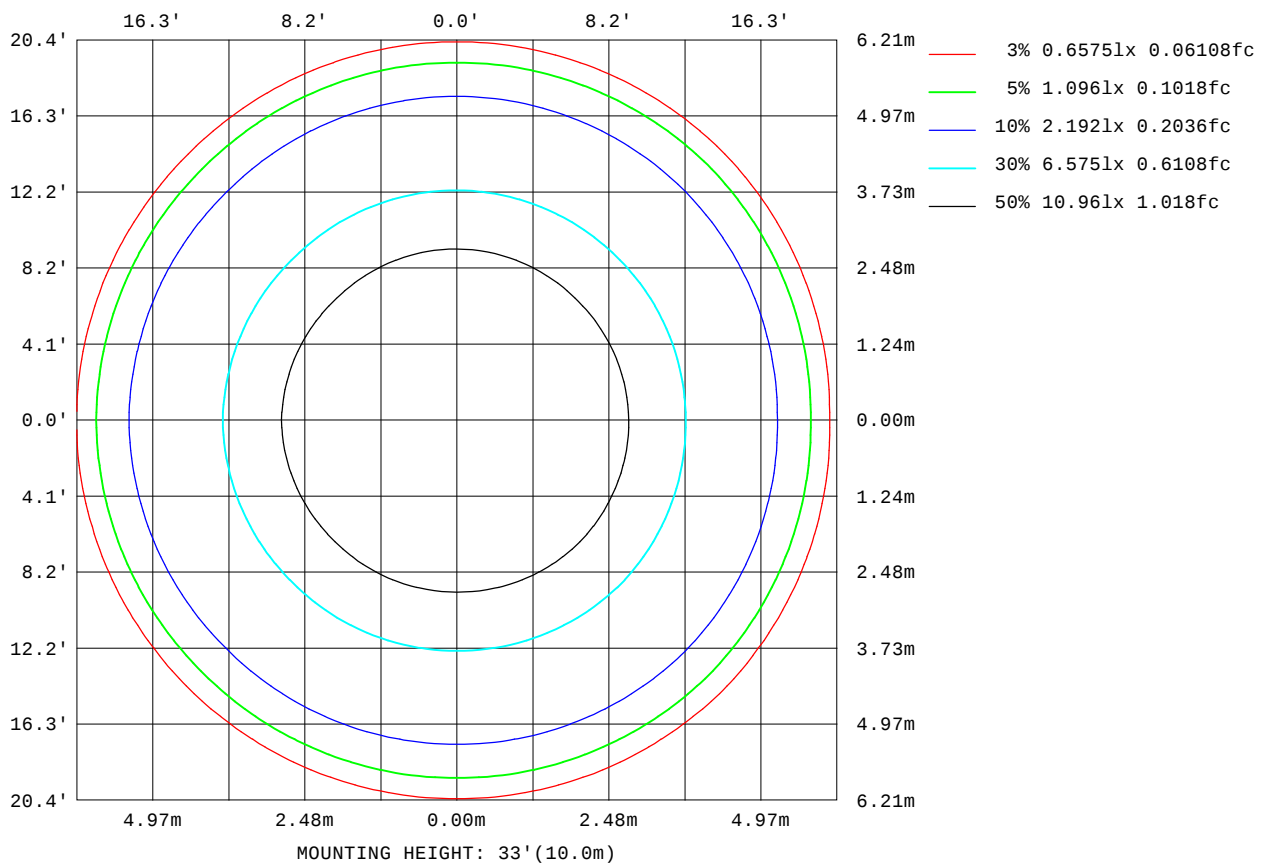
AAI Figure



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JYH
 Test Date:2024-04-09

Range: 0 - 180DEG
 Interval: 1.0DEG
 Test System:EVERFINE G0-2000A_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: 2024-04-09

Range: 0 - 180DEG
Interval: 1.0DEG
Test System: EVERFINE G0-2000A_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:0.2480A P:11.90W PF:1.000 Freq:0Hz Lamp Flux:843.581x1 lm		
NAME: VUTH20G 12W 30°	TYPE:	WEIGHT:
SPEC.:	DIM.: 220*20mm	SERIAL No.:
MFR.:	SUR.:220*20mm	Shielding Angle:

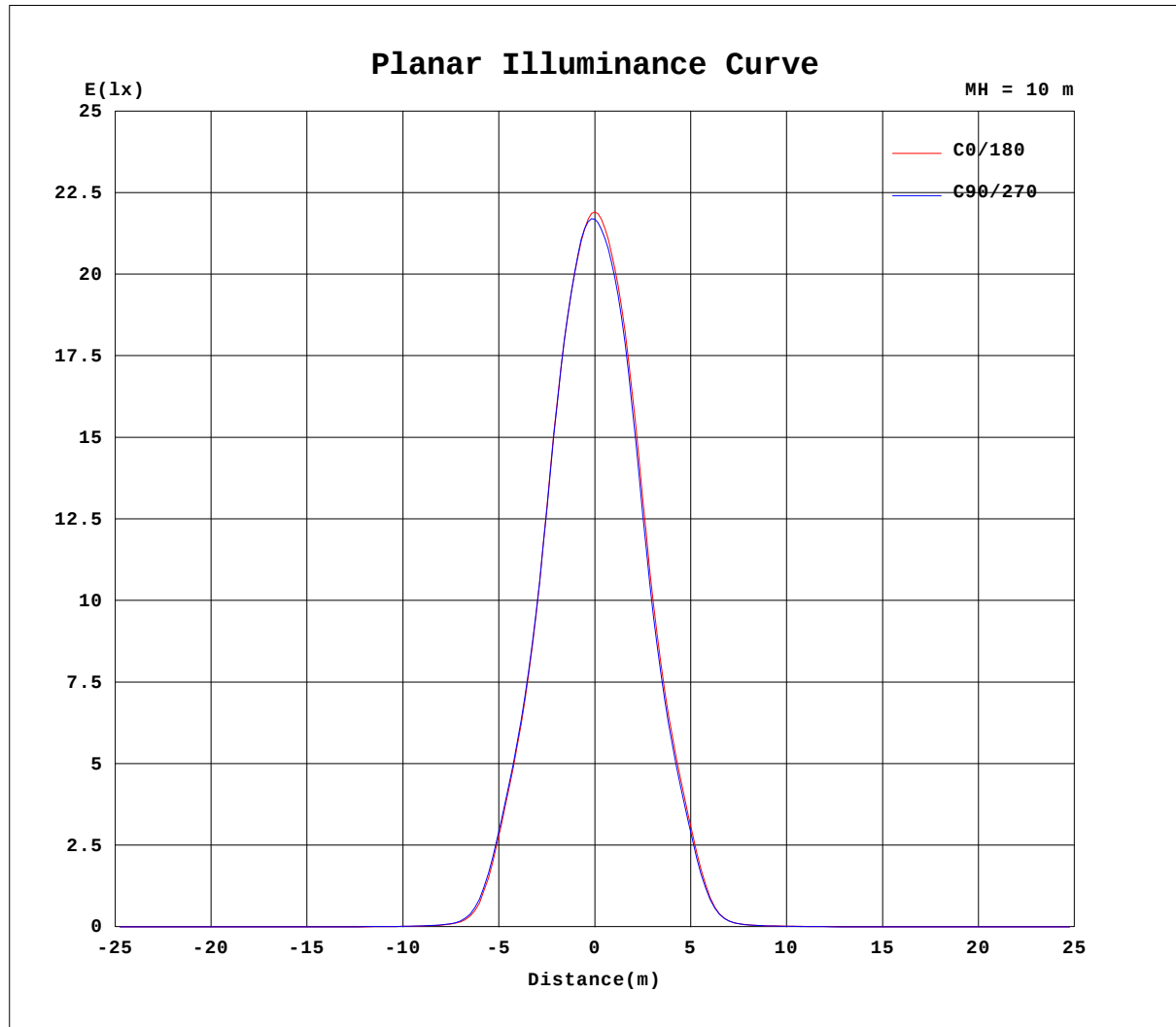
AvgL	cd/m2
L_0~180(65)av	3063
L_0~180(75)av	3370
L_0~180(85)av	7663
L_90~270(65)av	3079
L_90~270(75)av	4423
L_90~270(85)av	9541
L_45(65)av	2822
L_45(75)av	3975
L_45(85)av	8872

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2024-04-09

Range: 0 - 180DEG
Interval: 1.0DEG
Test System:EVERFINE G0-2000A_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: 2024-04-09

Range: 0 - 180DEG
Interval: 1.0DEG
Test System: EVERFINE G0-2000A_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(DEG) g (DEG)	0	45	90	135	180	225	270	315										
0	2192	2181	2169	2160	2192	2181	2169	2160										
5	2081	2097	2086	2080	2090	2071	2062	2052										
10	1795	1804	1793	1789	1820	1785	1781	1765										
15	1302	1314	1301	1302	1340	1291	1288	1275										
20	838	859	851	853	876	844	842	834										
25	500	521	515	519	540	510	510	502										
30	171	189	187	189	200	185	184	187										
35	28.9	33.7	33.4	34.0	33.2	32.6	33.1	32.4										
40	10.5	11.3	11.3	11.3	11.4	11.2	11.3	11.2										
45	5.92	6.27	6.22	6.22	7.90	6.24	6.29	6.24										
50	3.58	3.71	3.77	3.70	4.48	3.73	3.74	3.73										
55	1.94	1.99	2.12	1.99	2.34	2.06	2.06	2.07										
60	0.63	0.64	0.77	0.65	0.68	0.73	0.69	0.75										
65	0.52	0.47	0.62	0.48	0.62	0.55	0.53	0.59										
70	0.46	0.45	0.59	0.47	0.47	0.50	0.47	0.52										
75	0.40	0.38	0.55	0.47	0.37	0.47	0.46	0.50										
80	0.35	0.35	0.48	0.38	0.33	0.41	0.37	0.44										
85	0.31	0.28	0.42	0.35	0.28	0.35	0.31	0.38										
90	0.26	0.28	0.38	0.32	0.28	0.30	0.31	0.32										
95	0.27	0.32	0.38	0.36	0.30	0.29	0.33	0.31										
100	0.29	0.35	0.45	0.42	0.32	0.29	0.35	0.31										
105	0.36	0.41	0.48	0.47	0.34	0.32	0.38	0.31										
110	0.47	0.47	0.47	0.50	0.38	0.37	0.40	0.35										
115	0.63	0.64	0.61	0.65	0.47	0.46	0.50	0.47										
120	1.17	1.12	1.05	1.11	0.73	0.75	0.80	0.74										
125	2.22	2.04	1.99	2.02	1.33	1.39	1.42	1.39										
130	3.87	3.57	3.51	3.52	2.36	2.49	2.53	2.49										
135	6.21	5.78	5.71	5.71	4.04	4.25	4.25	4.23										
140	9.11	8.58	8.51	8.49	6.42	6.69	6.66	6.66										
145	12.3	11.7	11.6	11.6	9.54	9.80	9.75	9.74										
150	15.5	14.8	14.7	14.7	13.1	13.2	13.2	13.1										
155	18.2	17.7	17.5	17.5	16.6	16.6	16.5	16.4										
160	20.2	19.8	19.6	19.6	19.6	19.3	19.2	19.1										
165	21.9	21.5	21.3	21.3	22.0	21.4	21.4	21.2										
170	23.2	22.7	22.4	22.4	23.6	22.7	22.7	22.5										
175	24.1	23.6	23.3	23.3	24.5	23.6	23.6	23.4										
180	24.9	24.2	24.0	24.0	25.0	24.2	24.1	24.0										

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2024-04-09

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.375m [K=1.0000]
Remarks: