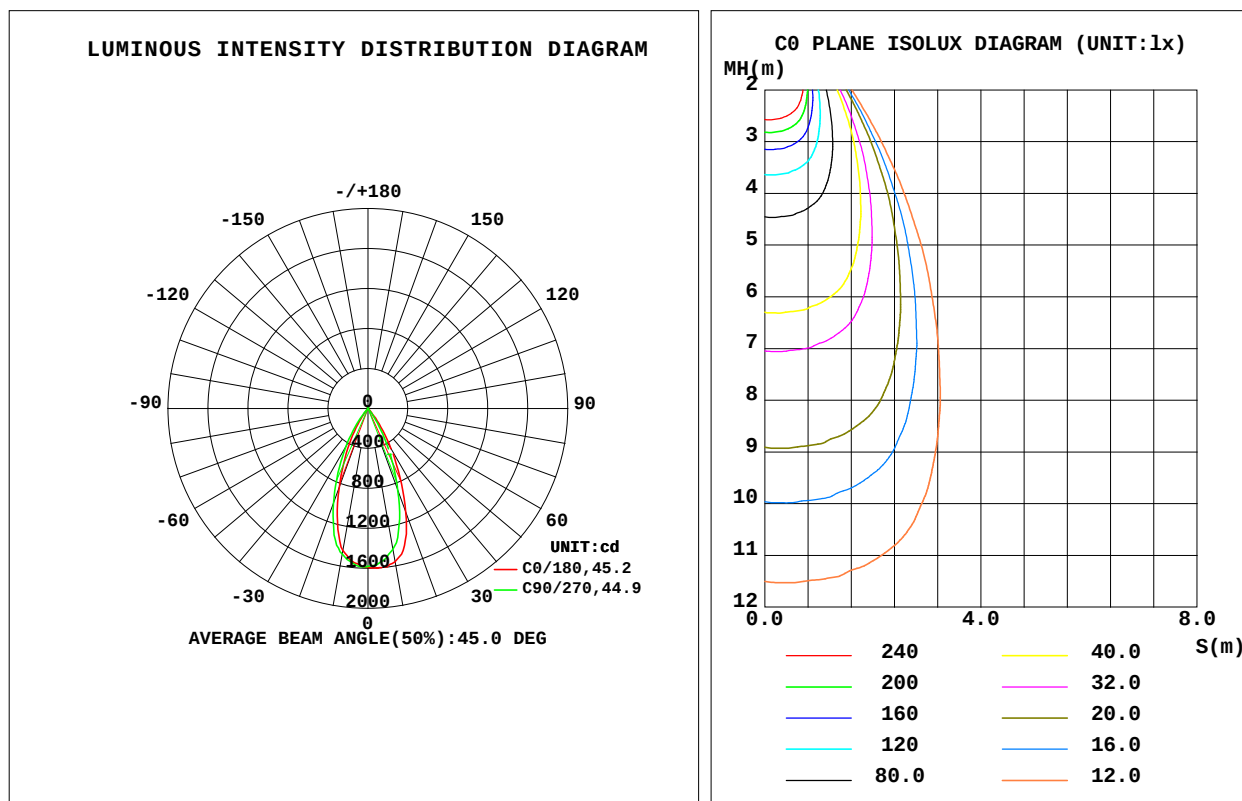


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:48.00V I:0.2520A P:12.05W PF:0.5429 Freq:0Hz Lamp Flux:957.598x1 lm		
NAME: VUTH20SZ65 45°	TYPE:	WEIGHT:
SPEC.:	DIM.: 65mm	SERIAL No.:
MFR.:	SUR.:65mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 79.47 lm/W			
MODEL		I _{max} (cd)	1599	S/MH(C0/180)	0.75
NOMINAL POWER(W)	12.3	LOR(%)	100.0	S/MH(C90/270)	0.74
RATED VOLTAGE(V)	48	TOTAL FLUX(lm)	957.60	h UP, DN(C0-180)	1.9,46.8
NOMINAL FLUX(lm)	957.598	CIE CLASS	DIRECT	h UP, DN(C180-360)	1.5,49.8
LAMPS INSIDE	1	h up(%)	3.4	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	48	h down(%)	96.6	CIBSE SHR MAX	0.75



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JYH
Test Date: 2023-09-04

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

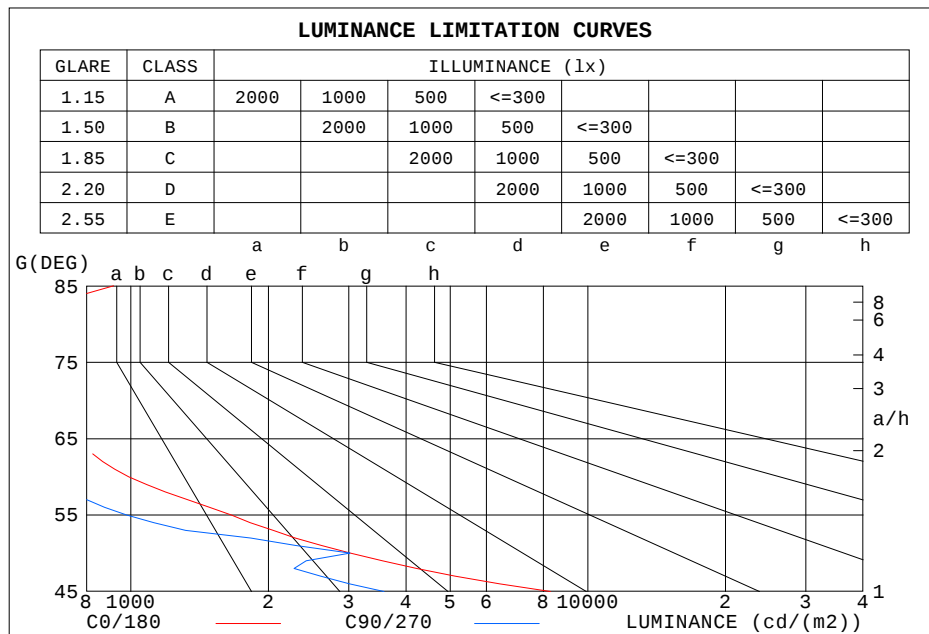
ZONAL FLUX DIAGRAM:

g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum, lamp
10	1557	1517	1436	1415	1443	1461	1481	1508	0- 10	146.3	146.3	15.3, 15.3
20	1113	1018	876.3	796.5	850.0	916.1	1019	1119	10- 20	348.1	494.5	51.6, 51.6
30	466.5	391.2	302.5	252.8	307.5	371.5	450.9	517.0	20- 30	295.7	790.2	82.5, 82.5
40	79.42	50.37	28.68	19.70	30.83	52.95	83.91	107.7	30- 40	116.1	906.2	94.6, 94.6
50	6.417	4.828	6.401	2.932	3.554	4.382	6.260	7.865	40- 50	14.73	921.0	96.2, 96.2
60	1.634	1.209	0.9902	0.7178	1.217	1.201	1.456	2.028	50- 60	2.403	923.4	96.4, 96.4
70	0.5938	0.4617	0.4560	0.3533	0.5396	0.5098	0.4972	0.6728	60- 70	0.7892	924.2	96.5, 96.5
80	0.3299	0.2279	0.2520	0.2399	0.2938	0.3298	0.3177	0.4019	70- 80	0.4163	924.6	96.6, 96.6
90	0.2638	0.2819	0.2638	0.3058	0.3119	0.2878	0.2999	0.2938	80- 90	0.3068	924.9	96.6, 96.6
100	0.3057	0.3601	0.3538	0.4139	0.3598	0.2938	0.3418	0.2938	90-100	0.3379	925.2	96.6, 96.6
110	0.4736	0.6005	0.6287	0.7868	0.5279	0.4723	0.4259	0.3718	100-110	0.4370	925.7	96.7, 96.7
120	1.444	1.722	2.014	2.395	1.417	1.157	0.9912	0.8327	110-120	0.8951	926.6	96.8, 96.8
130	4.334	4.752	5.330	6.105	4.077	3.566	2.947	2.611	120-130	2.382	928.9	97, 97
140	9.276	9.769	10.43	11.63	8.999	8.088	6.917	6.481	130-140	4.938	933.9	97.5, 97.5
150	15.14	15.53	16.32	17.38	15.17	14.05	12.63	12.21	140-150	7.375	941.3	98.3, 98.3
160	20.22	20.45	21.02	21.52	20.17	19.08	18.16	17.89	150-160	8.008	949.3	99.1, 99.1
170	23.75	23.43	23.51	23.73	23.62	22.39	21.82	21.83	160-170	6.059	955.3	99.8, 99.8
180	25.79	24.89	24.55	24.67	25.79	24.85	24.56	24.68	170-180	2.272	957.6	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:2023-09-04

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



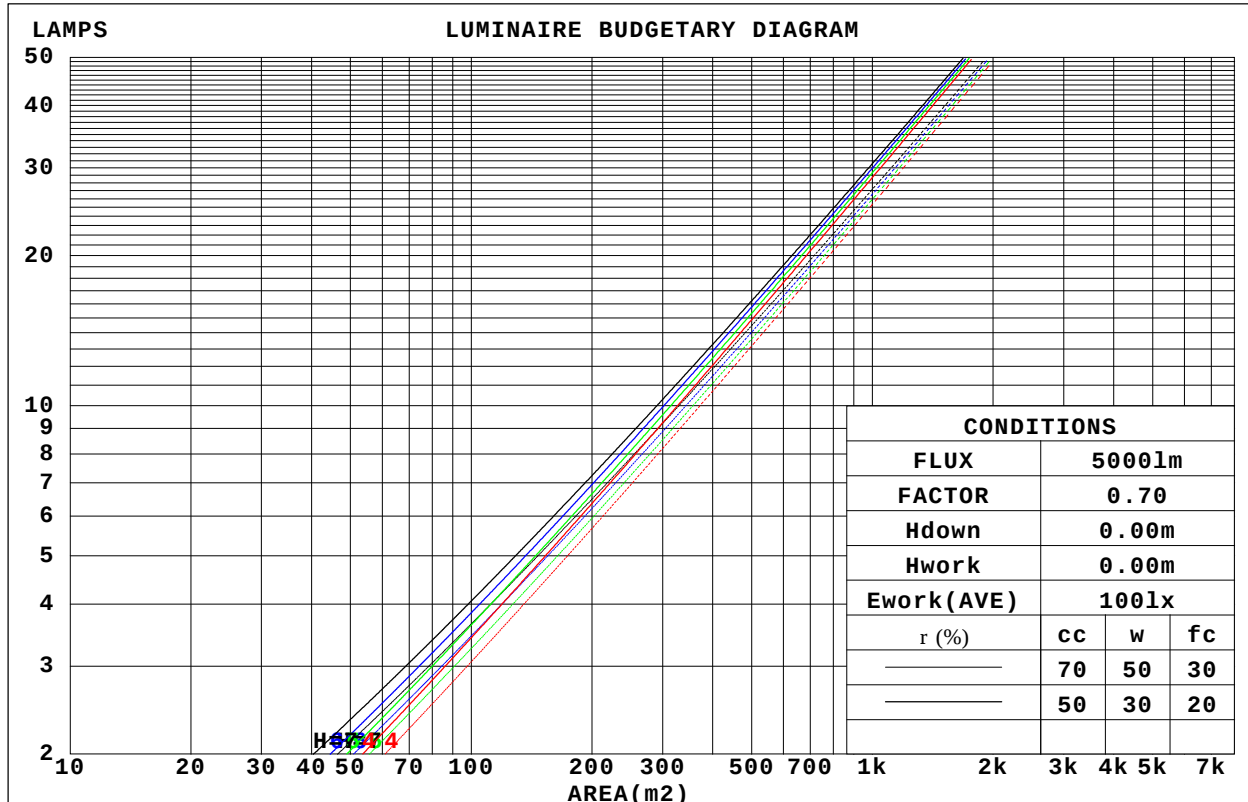
LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	918	813
80	576	440
75	576	372
70	526	404
65	697	408
60	990	600
55	1660	979
50	3025	3018
45	8282	3580

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JYH
Test Date: 2023-09-04

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	.97
1.0	1.11	1.08	1.06	1.08	1.06	1.04	1.04	1.02	1.00	.99	.98	.97	.95	.94	.94	.92
2.0	1.04	1.00	.97	1.02	.99	.96	.98	.96	.93	.95	.93	.91	.92	.90	.88	.87
3.0	.98	.93	.90	.96	.92	.89	.93	.90	.87	.90	.88	.85	.88	.85	.84	.82
4.0	.92	.87	.84	.91	.86	.83	.88	.85	.82	.86	.83	.80	.84	.81	.79	.78
5.0	.87	.82	.78	.86	.81	.78	.84	.80	.77	.82	.79	.76	.80	.77	.75	.74
6.0	.83	.78	.74	.82	.77	.73	.80	.76	.73	.78	.75	.72	.77	.74	.71	.70
7.0	.79	.73	.70	.78	.73	.69	.76	.72	.69	.75	.71	.68	.74	.70	.68	.66
8.0	.75	.70	.66	.74	.69	.66	.73	.68	.65	.72	.68	.65	.71	.67	.64	.63
9.0	.71	.66	.63	.71	.66	.62	.70	.65	.62	.69	.65	.62	.68	.64	.61	.60
10.0	.68	.63	.60	.68	.63	.60	.67	.62	.59	.66	.62	.59	.65	.61	.59	.57



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JYH
 Test Date: 2023-09-04

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	.164	.093	.030	.156	.089	.028	.142	.081	.026	.129	.074	.024	.116	.067	.022	
2.0	.155	.085	.026	.148	.082	.025	.136	.076	.024	.125	.070	.022	.114	.065	.020	
3.0	.146	.078	.023	.141	.075	.023	.130	.071	.021	.121	.066	.020	.112	.062	.019	
4.0	.139	.072	.021	.134	.070	.021	.125	.066	.020	.116	.063	.019	.109	.059	.018	
5.0	.132	.067	.019	.128	.066	.019	.120	.062	.018	.112	.059	.018	.105	.056	.017	
6.0	.126	.063	.018	.122	.062	.018	.115	.059	.017	.108	.056	.017	.102	.054	.016	
7.0	.120	.060	.017	.117	.058	.017	.111	.056	.016	.105	.054	.016	.099	.052	.015	
8.0	.115	.056	.016	.112	.055	.016	.107	.053	.015	.101	.051	.015	.096	.049	.014	
9.0	.111	.053	.015	.108	.053	.015	.103	.051	.014	.098	.049	.014	.093	.047	.014	
10.0	.106	.051	.014	.104	.050	.014	.099	.049	.014	.095	.047	.013	.090	.045	.013	

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	.216	.216	.216	.185	.185	.185	.126	.126	.126	.073	.073	.073	.023	.023	.023	
1.0	.196	.184	.172	.168	.158	.148	.115	.108	.102	.066	.063	.060	.021	.020	.019	
2.0	.180	.159	.141	.155	.137	.122	.106	.095	.085	.061	.055	.050	.020	.018	.016	
3.0	.167	.140	.118	.143	.121	.103	.098	.084	.072	.057	.049	.042	.018	.016	.014	
4.0	.156	.125	.101	.134	.108	.088	.092	.075	.062	.053	.044	.037	.017	.014	.012	
5.0	.147	.113	.089	.126	.098	.077	.087	.069	.054	.050	.040	.032	.016	.013	.011	
6.0	.139	.104	.079	.120	.090	.068	.083	.063	.048	.048	.037	.029	.015	.012	.010	
7.0	.133	.096	.071	.114	.083	.062	.079	.059	.044	.046	.034	.026	.015	.011	.009	
8.0	.127	.090	.065	.109	.078	.056	.076	.055	.040	.044	.032	.024	.014	.011	.008	
9.0	.122	.085	.060	.105	.074	.052	.073	.052	.037	.042	.031	.022	.014	.010	.007	
10.0	.117	.080	.056	.101	.070	.049	.070	.049	.035	.041	.029	.021	.013	.010	.007	

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2023-09-04

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	17.0	17.8	17.3	18.1	18.3	14.4	15.2	14.7	15.5	15.7
3H	16.8	17.6	17.1	17.8	18.1	14.2	15.0	14.5	15.2	15.5
4H	16.8	17.5	17.1	17.7	18.0	14.2	14.9	14.5	15.1	15.4
6H	16.7	17.3	17.0	17.6	17.9	14.1	14.7	14.4	15.0	15.3
8H	16.6	17.3	17.0	17.6	17.9	14.0	14.7	14.4	15.0	15.3
12H	16.6	17.2	16.9	17.5	17.8	14.0	14.6	14.3	14.9	15.2
4H 2H	16.8	17.5	17.1	17.7	18.0	14.2	14.9	14.5	15.1	15.4
3H	16.6	17.2	16.9	17.5	17.8	14.0	14.6	14.3	14.9	15.2
4H	16.5	17.0	16.9	17.4	17.7	13.9	14.4	14.3	14.8	15.1
6H	16.4	16.8	16.8	17.2	17.6	13.8	14.3	14.2	14.6	15.1
8H	16.3	16.8	16.8	17.2	17.6	13.7	14.2	14.2	14.6	15.0
12H	16.3	16.7	16.7	17.1	17.6	13.7	14.1	14.1	14.5	15.0
8H 4H	16.3	16.8	16.7	17.2	17.6	13.7	14.2	14.2	14.6	15.0
6H	16.2	16.6	16.7	17.0	17.5	13.6	14.0	14.1	14.4	14.9
8H	16.1	16.5	16.6	16.9	17.4	13.5	13.9	14.0	14.3	14.9
12H	16.1	16.4	16.6	16.9	17.4	13.5	13.8	14.0	14.3	14.8
12H 4H	16.2	16.7	16.7	17.1	17.5	13.6	14.1	14.1	14.5	15.0
6H	16.1	16.5	16.6	16.9	17.4	13.5	13.9	14.0	14.3	14.9
8H	16.1	16.4	16.6	16.8	17.4	13.5	13.8	14.0	14.3	14.8
Variations with the observer position at spacings:										
S = 1.0H	+ 4.8 / -14.7					+ 3.5 / -12.3				
1.5H	+ 7.5 / -13.6					+ 6.1 / -10.6				
2.0H	+ 7.3 / - 5.5					+ 4.6 / - 4.0				

CIE Pub.117, 957.6 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.2)

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2023-09-04

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:

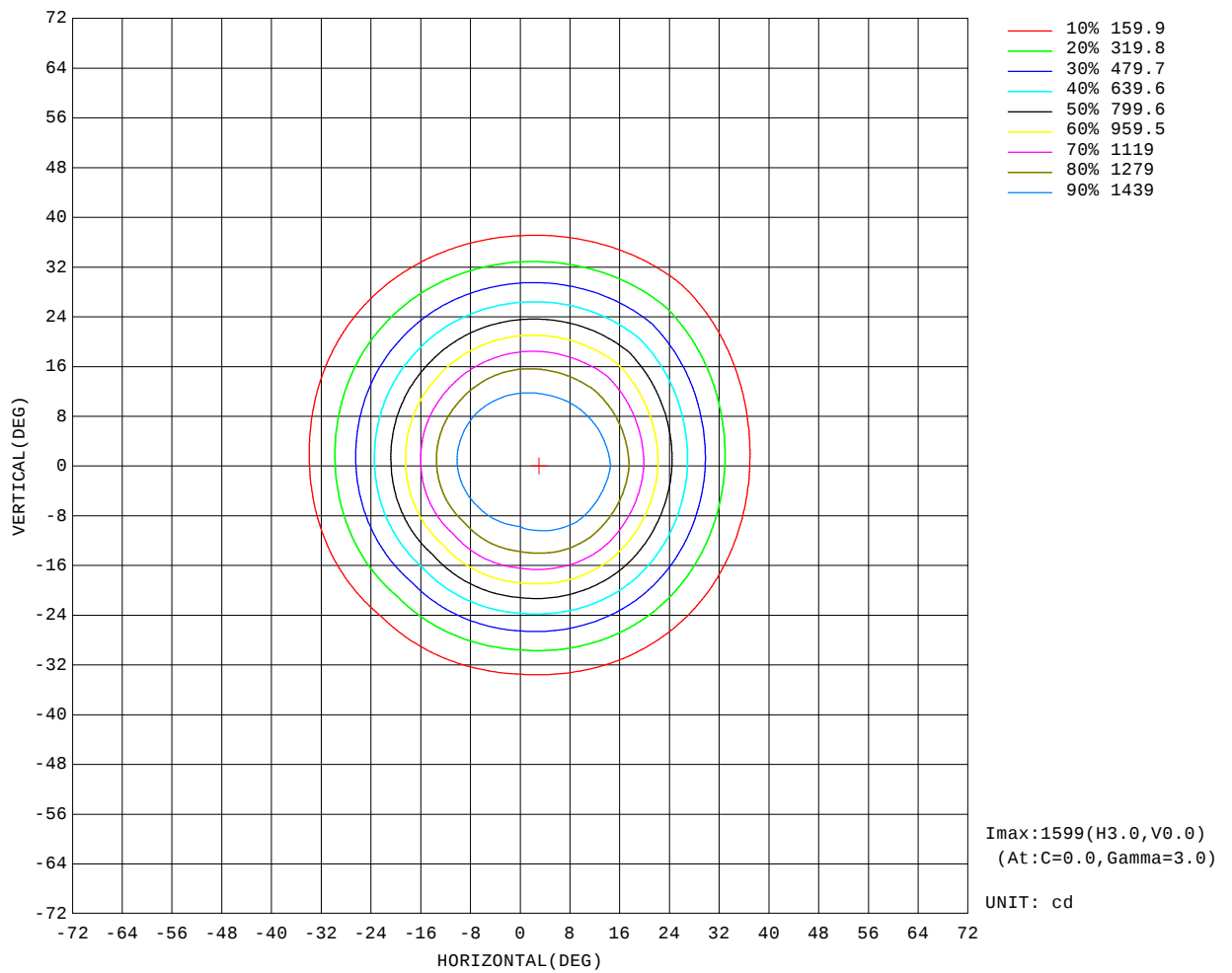
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	88	82	79	88	82	79	87	82	78	75
0.80	95	90	86	95	89	86	93	89	86	82
1.00	99	94	91	98	94	90	96	93	90	85
1.25	103	98	95	102	97	94	100	96	93	89
1.50	106	101	98	104	100	97	102	98	96	91
2.00	108	104	101	106	103	100	103	100	98	92
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	108	111	109	107	107	105	104	95
5.00	114	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: 2023-09-04

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:

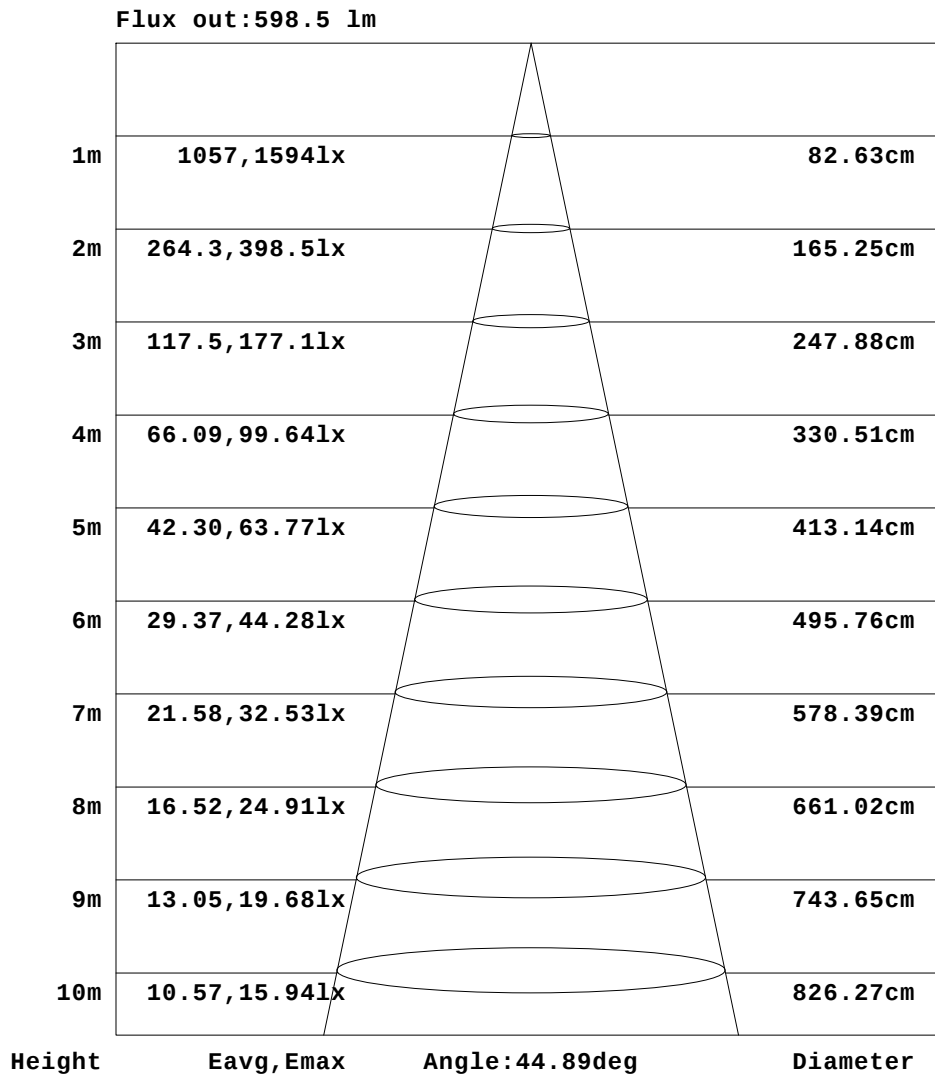
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JYH
Test Date: 2023-09-04

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

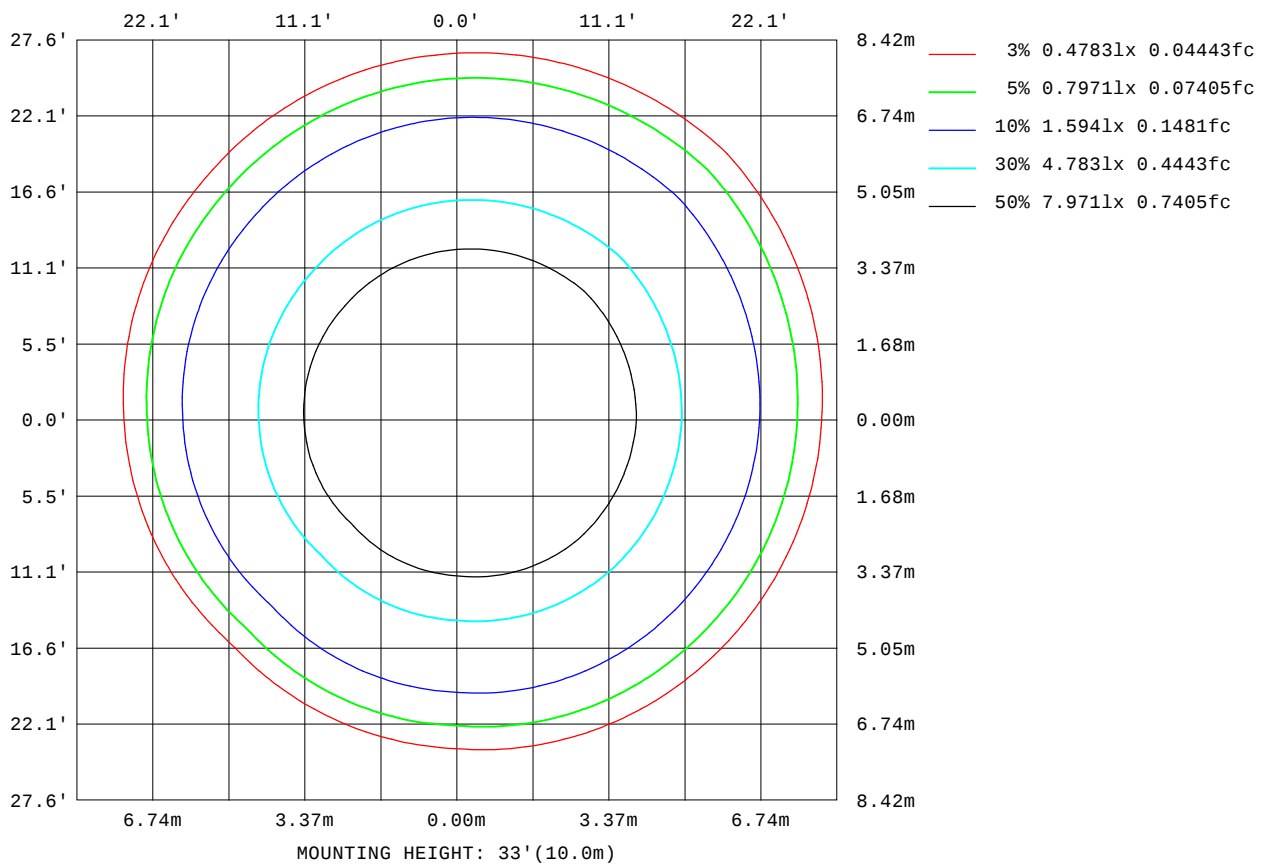


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2023-09-04

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: 2023-09-04

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:0.2520A P:12.05W PF:0.5429 Freq:0Hz Lamp Flux:957.598x1 lm		
NAME: VUTH20SZ65 45°	TYPE:	WEIGHT:
SPEC.:	DIM.: 65mm	SERIAL No.:
MFR.:	SUR.:65mm	Shielding Angle:

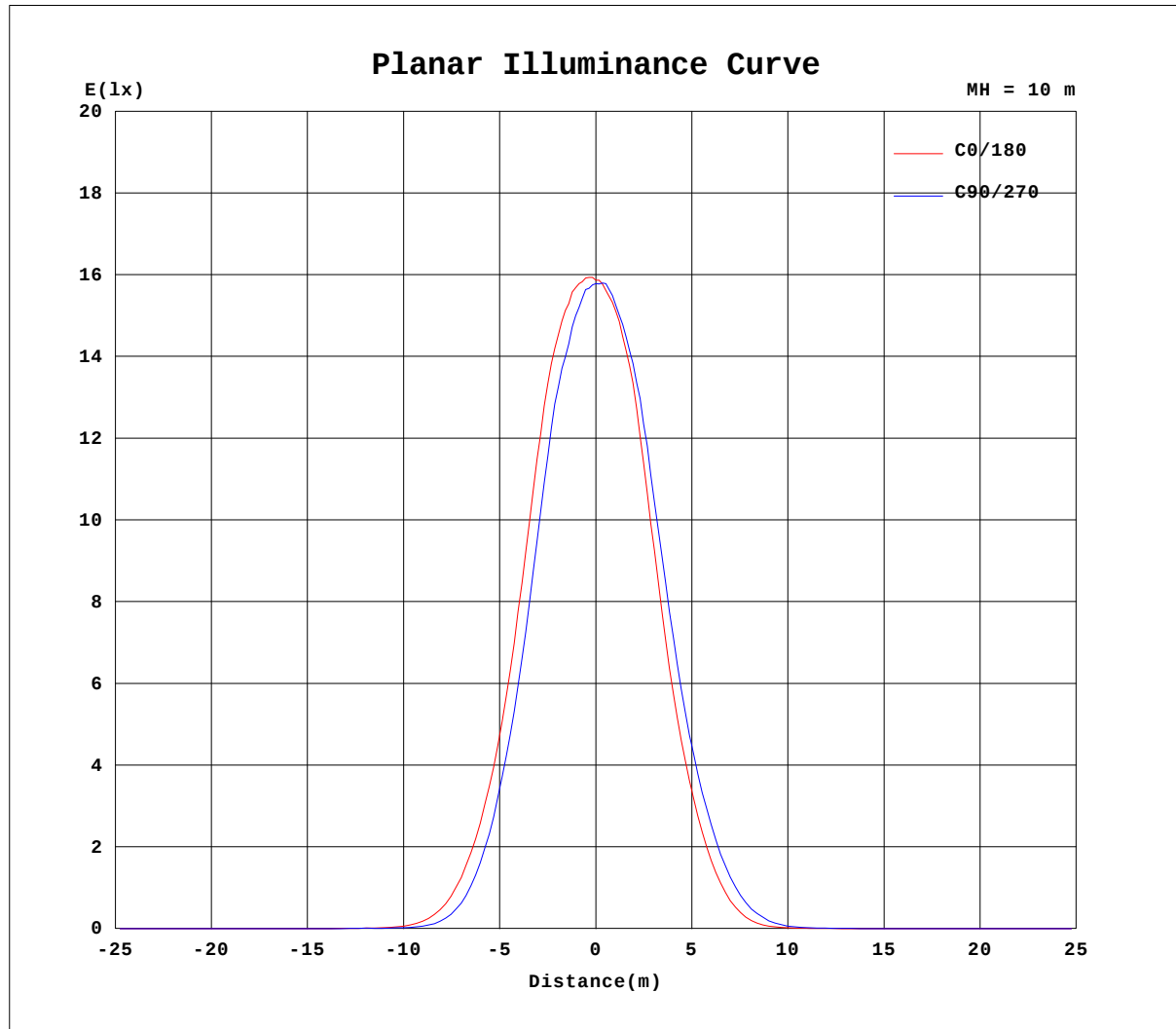
AvgL	cd/m2
L_0~180(65)av	600
L_0~180(75)av	491
L_0~180(85)av	990
L_90~270(65)av	502
L_90~270(75)av	452
L_90~270(85)av	907
L_45(65)av	527
L_45(75)av	456
L_45(85)av	949

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JYH
 Test Date:2023-09-04

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: 2023-09-04

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	1587	1584	1578	1581	1587	1584	1578	1581										
5	1597	1578	1538	1542	1550	1553	1567	1568										
10	1557	1517	1436	1415	1443	1461	1481	1508										
15	1419	1346	1210	1138	1182	1233	1311	1366										
20	1113	1018	876	796	850	916	1019	1119										
25	762	678	566	501	552	616	712	805										
30	467	391	302	253	308	371	451	517										
35	228	170	115	90.3	125	175	231	279										
40	79.4	50.4	28.7	19.7	30.8	52.9	83.9	108										
45	19.3	13.0	8.35	6.05	7.51	11.4	19.4	28.1										
50	6.42	4.83	6.40	2.93	3.55	4.38	6.26	7.87										
55	3.14	2.16	1.85	1.40	1.90	2.11	2.96	3.97										
60	1.63	1.21	0.99	0.72	1.22	1.20	1.46	2.03										
65	0.97	0.64	0.57	0.43	0.70	0.70	0.83	1.18										
70	0.59	0.46	0.46	0.35	0.54	0.51	0.50	0.67										
75	0.49	0.34	0.32	0.25	0.35	0.43	0.45	0.53										
80	0.33	0.23	0.25	0.24	0.29	0.33	0.32	0.40										
85	0.26	0.23	0.23	0.26	0.31	0.29	0.29	0.31										
90	0.26	0.28	0.26	0.31	0.31	0.29	0.30	0.29										
95	0.27	0.31	0.26	0.36	0.34	0.29	0.32	0.29										
100	0.31	0.36	0.35	0.41	0.36	0.29	0.34	0.29										
105	0.36	0.43	0.45	0.52	0.41	0.36	0.37	0.32										
110	0.47	0.60	0.63	0.79	0.53	0.47	0.43	0.37										
115	0.82	0.99	1.12	1.37	0.82	0.65	0.60	0.47										
120	1.44	1.72	2.01	2.40	1.42	1.16	0.99	0.83										
125	2.57	2.96	3.42	3.97	2.48	2.10	1.74	1.49										
130	4.33	4.75	5.33	6.10	4.08	3.57	2.95	2.61										
135	6.77	7.07	7.70	8.74	6.26	5.60	4.66	4.25										
140	9.28	9.77	10.4	11.6	9.00	8.09	6.92	6.48										
145	12.2	12.6	13.4	14.6	12.1	11.0	9.64	9.20										
150	15.1	15.5	16.3	17.4	15.2	14.0	12.6	12.2										
155	17.9	18.2	18.9	19.7	17.9	16.8	15.6	15.2										
160	20.2	20.5	21.0	21.5	20.2	19.1	18.2	17.9										
165	22.2	22.2	22.5	22.8	22.0	20.9	20.2	20.1										
170	23.7	23.4	23.5	23.7	23.6	22.4	21.8	21.8										
175	25.0	24.4	24.2	24.5	25.0	23.8	23.3	23.4										
180	25.8	24.9	24.5	24.7	25.8	24.8	24.6	24.7										

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JYH
Test Date: 2023-09-04

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: