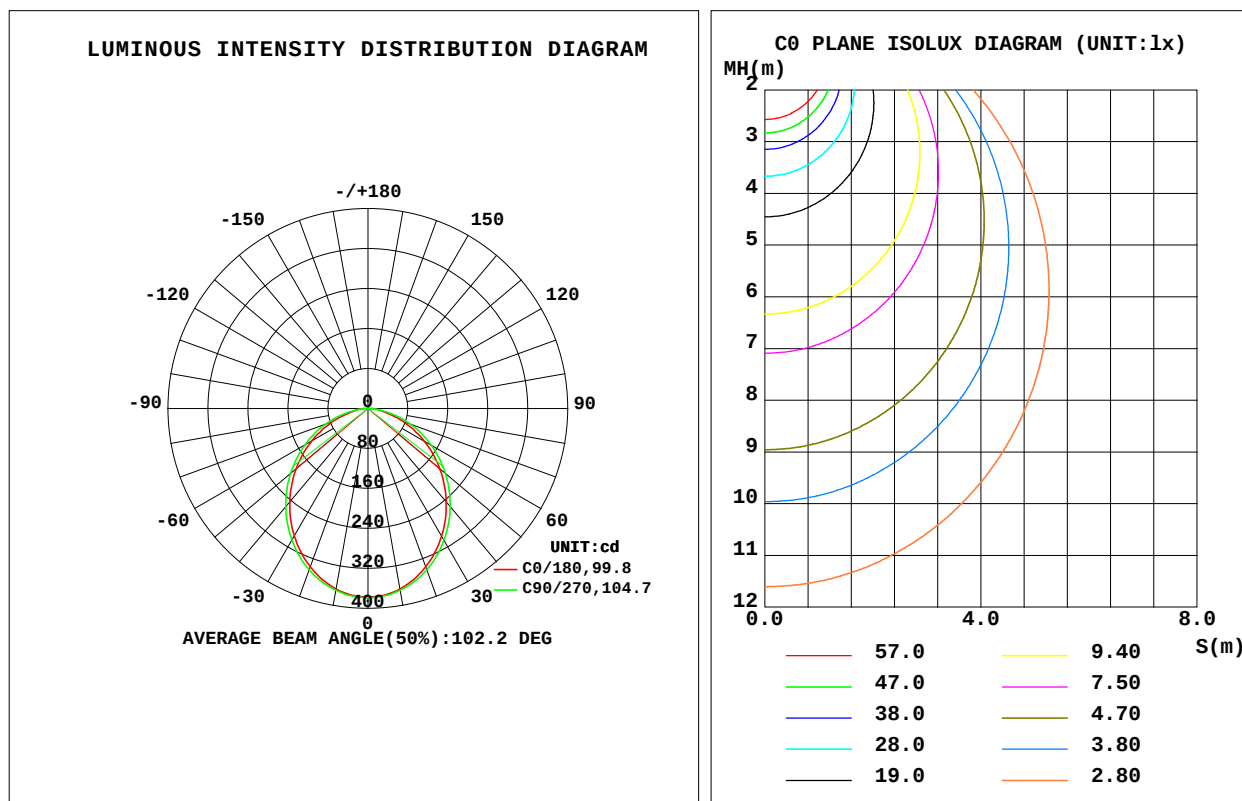


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:48.00V I:0.2800A P:13.40W PF:1.000 Freq:0Hz Lamp Flux:953.03x1 lm		
NAME: VUTH20FD600	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:23*600mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 71.12 lm/W			
MODEL		I _{max} (cd)	378.7	S/MH(C0/180)	1.17
NOMINAL POWER(W)	13.4	LOR(%)	100.0	S/MH(C90/270)	1.20
RATED VOLTAGE(V)	48	TOTAL FLUX(lm)	953.03	h UP, DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	953.03	CIE CLASS	DIRECT	h UP, DN(C180-360)	0.0,50.0
LAMPS INSIDE	1	h up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	48	h down(%)	100.0	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2022-12-14

Range: 0 - 180DEG
Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:



ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

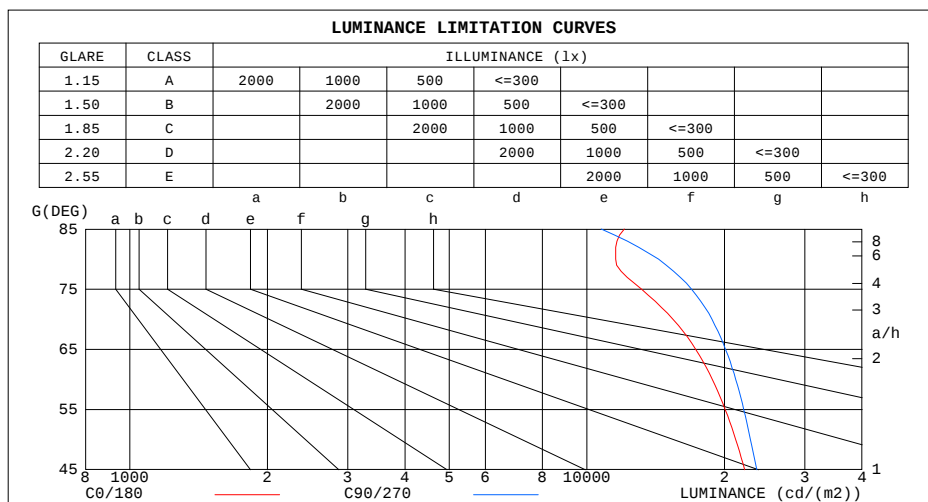
g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum, lamp
10	366.8	368.2	369.5	368.2	366.8	368.2	369.5	368.2	0- 10	35.62	35.62	3.74, 3.74
20	337.5	340.2	343.6	340.2	337.5	340.2	343.6	340.2	10- 20	100.4	136.0	14.3, 14.3
30	294.9	298.7	304.5	298.7	294.9	298.7	304.5	298.7	20- 30	147.8	283.8	29.8, 29.8
40	243.7	248.8	256.1	248.8	243.7	248.8	256.1	248.8	30- 40	172.0	455.8	47.8, 47.8
50	187.8	194.1	202.4	194.1	187.8	194.1	202.4	194.1	40- 50	171.5	627.3	65.8, 65.8
60	129.8	137.2	146.1	137.2	129.8	137.2	146.1	137.2	50- 60	148.6	776.0	81.4, 81.4
70	72.91	79.42	88.70	79.42	72.91	79.42	88.70	79.42	60- 70	107.6	883.5	92.7, 92.7
80	27.69	26.27	34.38	26.27	27.69	26.27	34.38	26.27	70- 80	56.08	939.6	98.6, 98.6
90	0	0	0	0	0	0	0	0	80- 90	13.42	953.0	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	953.0	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	953.0	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	953.0	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	953.0	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	953.0	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	953.0	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	953.0	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	953.0	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	953.0	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:2022-12-14

Range: 0 - 180DEG
Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:48.00V I:0.2800A P:13.40W PF:1.000 Freq:0Hz Lamp Flux:953.03x1 lm		
NAME: VUTH20FD600	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:23*600mm	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	12088	10760
80	11557	14349
75	13171	16962
70	15447	18792
65	17317	20121
60	18813	21173
55	20077	22044
50	21176	22819
45	22163	23535

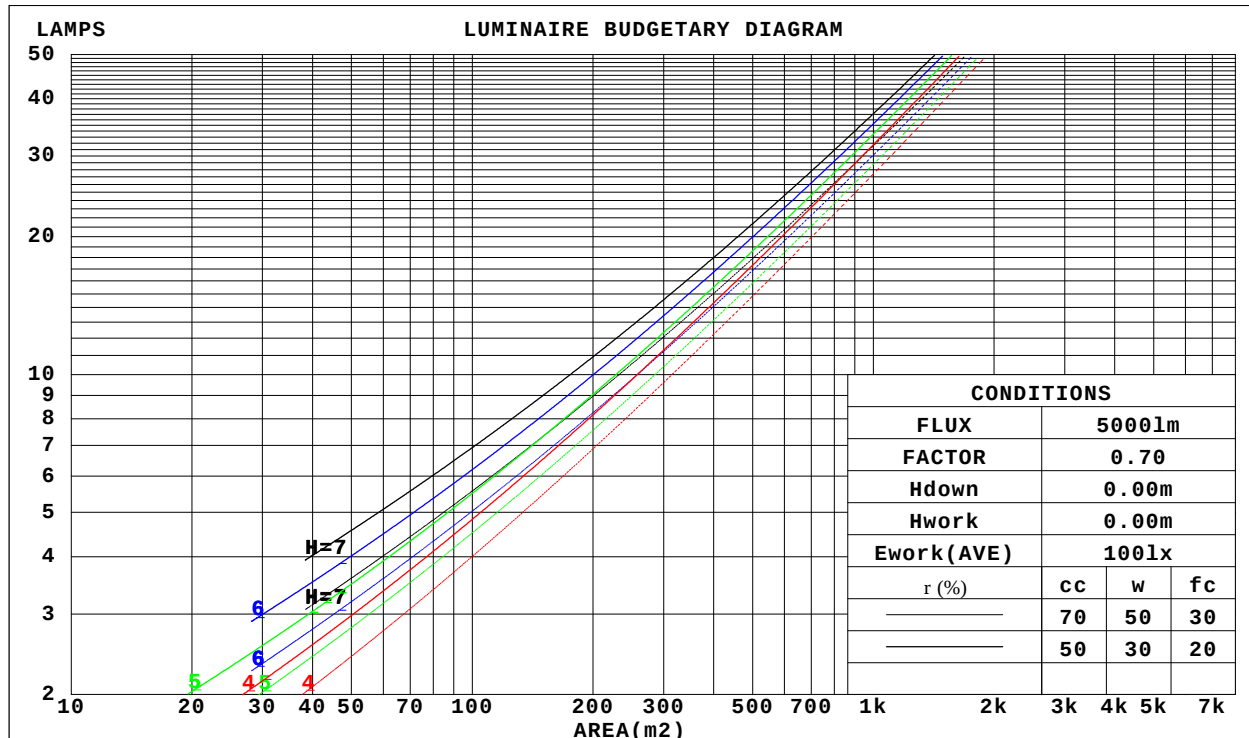
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JYH
Test Date: 2022-12-14

Range: 0 - 180DEG
Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 10.950m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:48.00V I:0.2800A P:13.40W PF:1.000 Freq:0Hz Lamp Flux:953.03x1 lm		
NAME: VUTH20FD600	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:23*600mm	Shielding Angle:

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	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.05	1.01	.97	1.02	.99	.95	.98	.95	.92	.94	.92	.89	.91	.89	.87	.85
2.0	.92	.85	.80	.90	.84	.79	.86	.81	.77	.83	.79	.75	.80	.77	.73	.71
3.0	.81	.73	.67	.79	.72	.66	.76	.70	.65	.74	.68	.64	.71	.67	.63	.60
4.0	.72	.63	.57	.71	.63	.56	.68	.61	.56	.66	.60	.55	.64	.58	.54	.52
5.0	.64	.56	.49	.63	.55	.49	.61	.54	.48	.59	.53	.48	.57	.52	.47	.45
6.0	.58	.49	.43	.57	.49	.43	.55	.48	.42	.54	.47	.42	.52	.46	.42	.40
7.0	.53	.44	.38	.52	.44	.38	.50	.43	.38	.49	.42	.37	.48	.42	.37	.35
8.0	.48	.40	.34	.48	.40	.34	.46	.39	.34	.45	.38	.34	.44	.38	.33	.32
9.0	.44	.36	.31	.44	.36	.31	.43	.36	.31	.42	.35	.30	.41	.35	.30	.28
10.0	.41	.33	.28	.40	.33	.28	.40	.33	.28	.39	.32	.28	.38	.32	.28	.26



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JYH
 Test Date:2022-12-14

g Range: 0 - 180DEG
 Interval: 1.0DEG
 Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:10.950m [K=1.0000]
 Remarks:



WEC AND CCEC

Test:U:48.00V I:0.2800A P:13.40W PF:1.000 Freq:0Hz Lamp Flux:953.03x1 lm					
NAME: VUTH20FD600			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:23*600mm		Shielding Angle:

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	.295	.167	.053	.287	.164	.052	.274	.157	.050	.262	.151	.049	.251	.145	.047															
2.0	.280	.153	.047	.273	.151	.046	.262	.146	.045	.251	.141	.044	.241	.137	.043															
3.0	.260	.139	.042	.255	.137	.041	.245	.133	.040	.235	.129	.040	.226	.125	.039															
4.0	.241	.125	.037	.237	.124	.037	.228	.121	.036	.219	.118	.035	.211	.115	.035															
5.0	.224	.114	.033	.220	.113	.033	.212	.110	.032	.204	.108	.032	.197	.105	.032															
6.0	.208	.104	.030	.205	.103	.030	.197	.101	.029	.191	.099	.029	.184	.097	.029															
7.0	.194	.096	.027	.191	.095	.027	.185	.093	.027	.179	.092	.027	.173	.090	.026															
8.0	.182	.089	.025	.179	.088	.025	.173	.086	.025	.168	.085	.025	.163	.084	.024															
9.0	.171	.083	.023	.168	.082	.023	.163	.081	.023	.158	.079	.023	.153	.078	.023															
10.0	.161	.077	.021	.158	.076	.021	.154	.075	.021	.149	.074	.021	.145	.073	.021															

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.179	.156	.136	.153	.134	.117	.105	.092	.081	.060	.053	.047	.019	.017	.015	
2.0	.171	.132	.099	.146	.114	.086	.100	.079	.060	.058	.046	.035	.019	.015	.011	
3.0	.163	.114	.076	.139	.099	.066	.096	.068	.046	.055	.040	.027	.018	.013	.009	
4.0	.155	.101	.059	.133	.087	.052	.091	.061	.036	.053	.036	.022	.017	.012	.007	
5.0	.148	.090	.048	.127	.078	.042	.087	.055	.030	.051	.032	.018	.016	.010	.006	
6.0	.140	.082	.040	.121	.071	.035	.083	.050	.025	.048	.029	.015	.016	.010	.005	
7.0	.134	.075	.034	.115	.065	.029	.079	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.127	.069	.029	.110	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.121	.064	.026	.105	.056	.022	.072	.039	.016	.042	.023	.009	.014	.008	.003	
10.0	.116	.060	.023	.100	.052	.020	.069	.037	.014	.040	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2022-12-14

g Range: 0 - 180DEG
Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:48.00V I:0.2800A P:13.40W PF:1.000 Freq:0Hz Lamp Flux:953.03x1 lm											
NAME: VUTH20FD600					TYPE:			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:			
MFR.:					SUR.:23*600mm			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				Viewed endwise					
x = 2H y = 2H	23.3	24.8	23.6	25.0	25.2	23.7	25.2	24.0	25.4	25.6	
	3H	24.5	25.9	24.8	26.1	26.4	25.1	26.5	25.4	26.7	27.0
	4H	24.9	26.2	25.3	26.5	26.8	25.7	27.0	26.0	27.2	27.5
	6H	25.2	26.4	25.5	26.7	27.0	26.0	27.2	26.3	27.5	27.8
	8H	25.3	26.5	25.6	26.8	27.1	26.1	27.3	26.5	27.6	27.9
	12H	25.4	26.5	25.7	26.8	27.1	26.1	27.3	26.5	27.6	27.9
4H	2H	23.9	25.2	24.2	25.4	25.7	24.2	25.5	24.5	25.7	26.0
	3H	25.3	26.4	25.6	26.7	27.0	25.8	26.9	26.1	27.2	27.5
	4H	25.8	26.9	26.2	27.2	27.5	26.4	27.5	26.8	27.8	28.1
	6H	26.2	27.1	26.6	27.4	27.8	26.9	27.8	27.3	28.2	28.5
	8H	26.3	27.2	26.7	27.5	27.9	27.0	27.9	27.5	28.3	28.6
	12H	26.4	27.2	26.8	27.6	28.0	27.1	27.9	27.5	28.3	28.7
8H	4H	26.0	26.9	26.4	27.3	27.6	26.6	27.5	27.0	27.8	28.2
	6H	26.5	27.2	26.9	27.6	28.0	27.2	27.9	27.6	28.3	28.7
	8H	26.7	27.3	27.2	27.7	28.2	27.4	28.0	27.8	28.4	28.9
	12H	26.9	27.4	27.3	27.9	28.3	27.5	28.0	28.0	28.5	28.9
12H	4H	26.0	26.8	26.5	27.2	27.6	26.6	27.4	27.0	27.8	28.2
	6H	26.5	27.2	27.0	27.6	28.0	27.2	27.8	27.6	28.2	28.7
	8H	26.7	27.3	27.2	27.7	28.2	27.4	27.9	27.9	28.4	28.8
Variations with the observer position at spacings:											
S = 1.0H	+ 0.2 / - 0.3				+ 0.2 / - 0.2						
1.5H	+ 0.2 / - 0.4				+ 0.2 / - 0.3						
2.0H	+ 0.3 / - 0.4				+ 0.3 / - 0.3						

CIE Pub.117, 953.0 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:2022-12-14

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:48.00V I:0.2800A P:13.40W PF:1.000 Freq:0Hz Lamp Flux:953.03x1 lm		
NAME: VUTH20FD600	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:23*600mm	Shielding Angle:

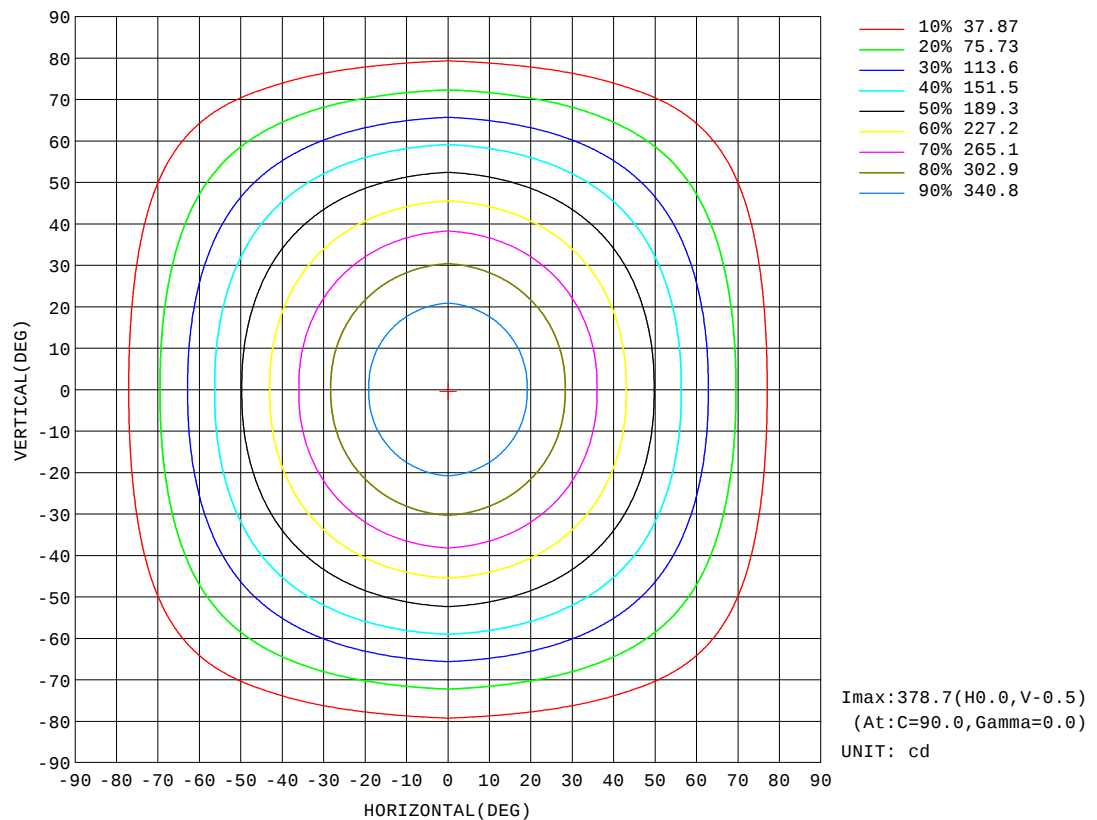
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	59	48	41	59	48	41	57	47	41	35
0.80	69	58	51	68	58	51	67	57	50	44
1.00	78	67	60	77	66	60	74	68	59	52
1.25	85	75	68	83	74	67	81	73	67	60
1.50	90	80	73	88	79	73	85	77	72	65
2.00	96	88	82	94	87	81	91	85	80	72
2.50	100	93	87	98	91	86	94	89	84	76
3.00	103	97	91	101	95	90	97	92	88	80
4.00	107	102	97	105	100	96	100	96	93	84
5.00	109	105	101	107	103	99	102	99	96	87
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:2022-12-14

Range: 0 - 180DEG
Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:48.00V I:0.2800A P:13.40W PF:1.000 Freq:0Hz Lamp Flux:953.03x1 lm		
NAME: VUTH20FD600	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:23*600mm	Shielding Angle:



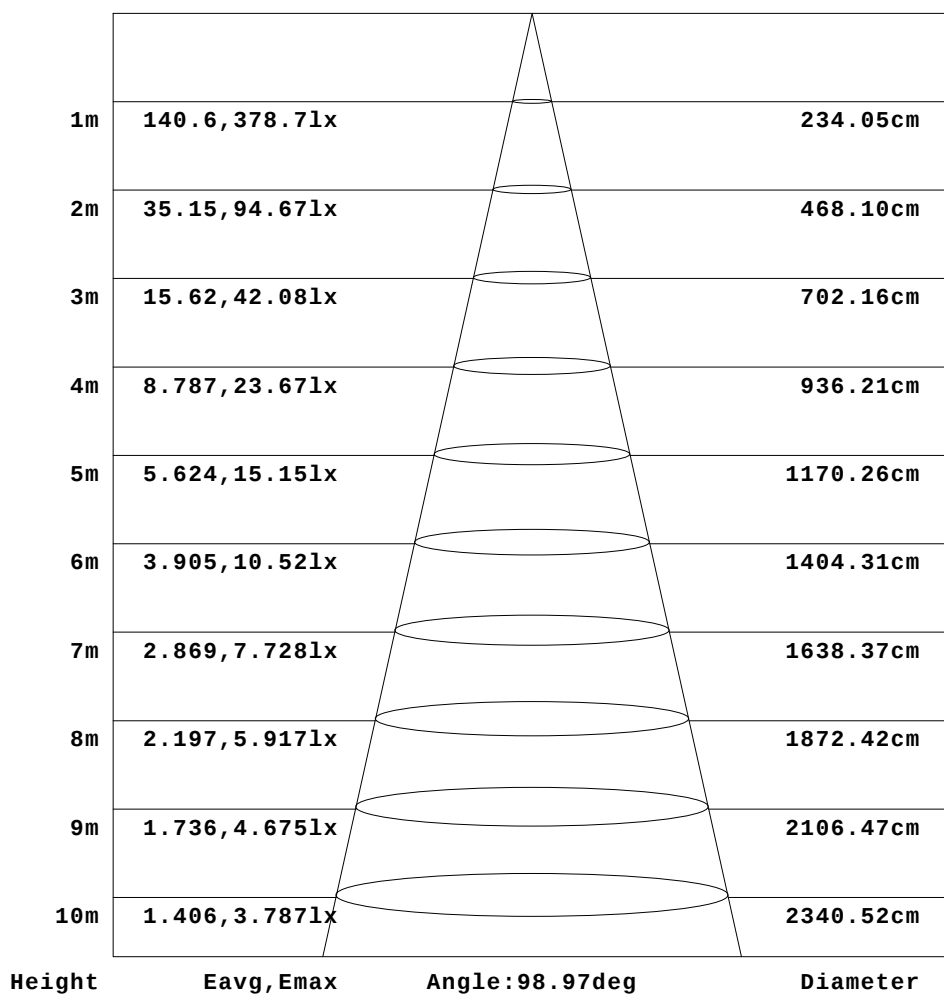
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JYH
Test Date: 2022-12-14

Range: 0 - 180DEG
Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 10.950m [K=1.0000]
Remarks:

AAI Figure

Test:U:48.00V I:0.2800A P:13.40W PF:1.000 Freq:0Hz Lamp Flux:953.03x1 lm		
NAME: VUTH20FD600	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:23*600mm	Shielding Angle:

Flux out:627.3 lm



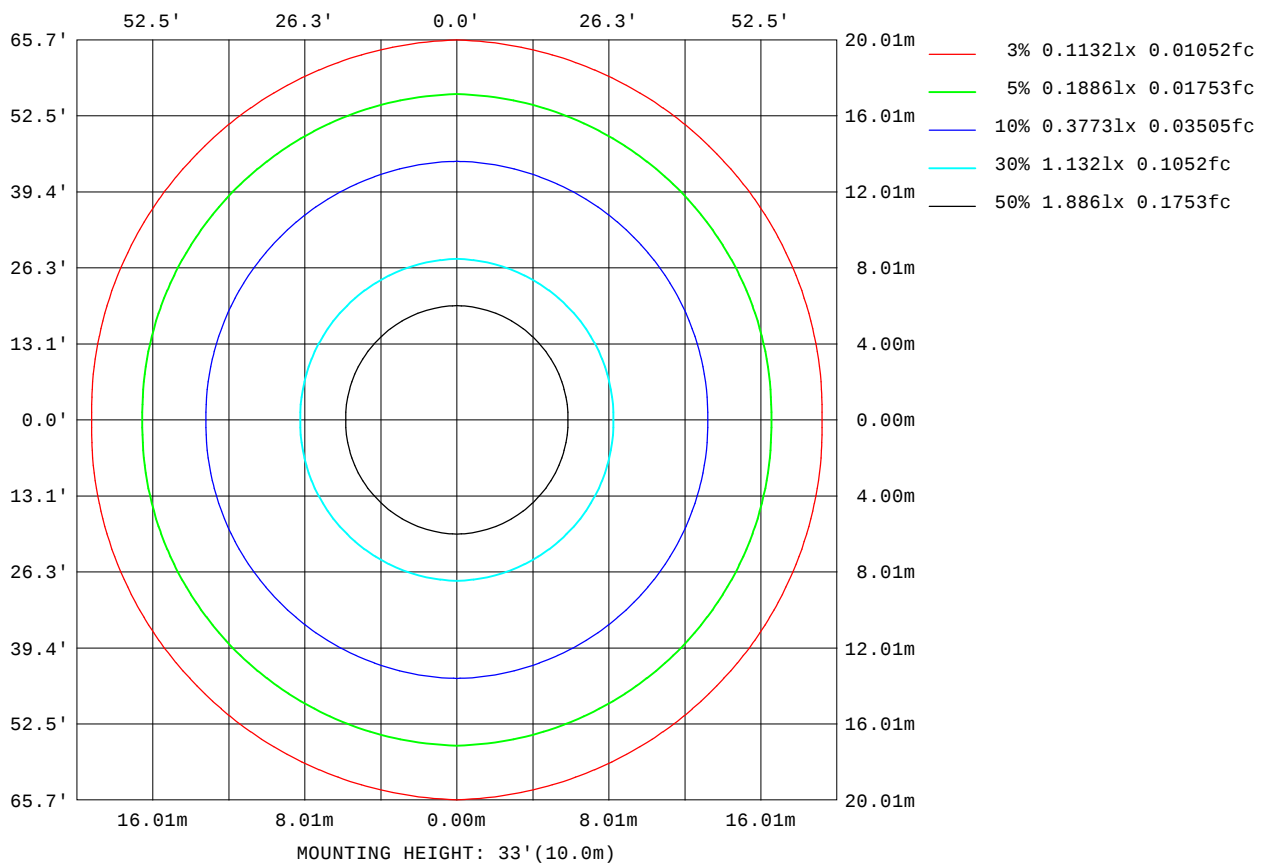
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JYH
Test Date: 2022-12-14

Range: 0 - 180DEG
Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 10.950m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:48.00V I:0.2800A P:13.40W PF:1.000 Freq:0Hz Lamp Flux:953.03x1 lm		
NAME: VUTH20FD600	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:23*600mm	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JYH
 Test Date:2022-12-14

Range: 0 - 180DEG
 Interval: 1.0DEG
 Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:10.950m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:48.00V I:0.2800A P:13.40W PF:1.000 Freq:0Hz Lamp Flux:953.03x1 lm		
NAME: VUTH20FD600	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:23*600mm	Shielding Angle:

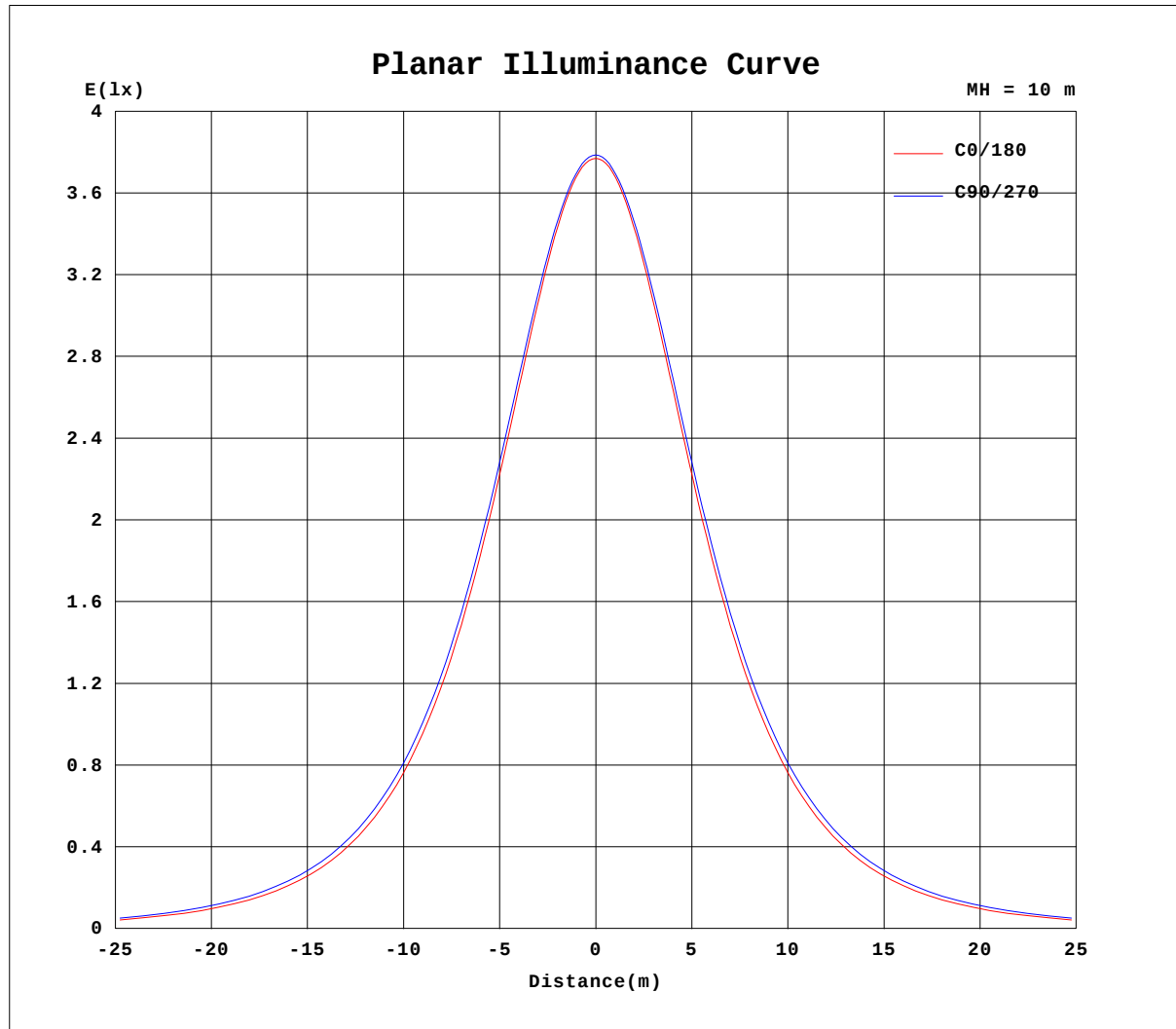
AvgL	cd/m2
L_0~180(65)av	17317
L_0~180(75)av	13171
L_0~180(85)av	12088
L_90~270(65)av	20121
L_90~270(75)av	16962
L_90~270(85)av	10760
L_45(65)av	18563
L_45(75)av	14419
L_45(85)av	6881

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
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Range: 0 - 180DEG
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Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [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: 2022-12-14

Range: 0 - 180DEG
 Interval: 1.0DEG
 Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 10.950m [K=1.0000]
 Remarks:



LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:48.00V I:0.2800A P:13.40W PF:1.000 Freq:0Hz Lamp Flux:953.03x1 lm		
NAME: VUTH20FD600	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:23*600mm	Shielding Angle:

Table--1

UNIT: cd

C(DEG) g (DEG)	0	45	90	135	180	225	270	315										
0	377	378	379	378	377	378	379	378										
5	375	376	376	376	375	376	376	376										
10	367	368	370	368	367	368	370	368										
15	354	356	359	356	354	356	359	356										
20	338	340	344	340	338	340	344	340										
25	318	321	325	321	318	321	325	321										
30	295	299	304	299	295	299	304	299										
35	270	275	281	275	270	275	281	275										
40	244	249	256	249	244	249	256	249										
45	216	222	230	222	216	222	230	222										
50	188	194	202	194	188	194	202	194										
55	159	166	174	166	159	166	174	166										
60	130	137	146	137	130	137	146	137										
65	101	108	117	108	101	108	117	108										
70	72.9	79.4	88.7	79.4	72.9	79.4	88.7	79.4										
75	47.0	51.5	60.6	51.5	47.0	51.5	60.6	51.5										
80	27.7	26.3	34.4	26.3	27.7	26.3	34.4	26.3										
85	14.5	8.28	12.9	8.28	14.5	8.28	12.9	8.28										
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2022-12-14

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks: