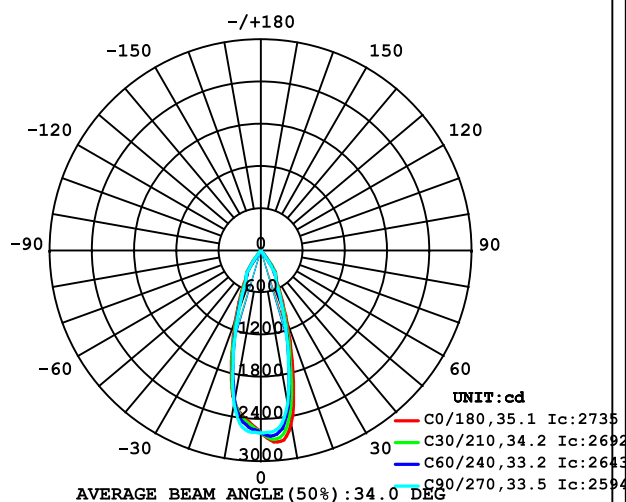




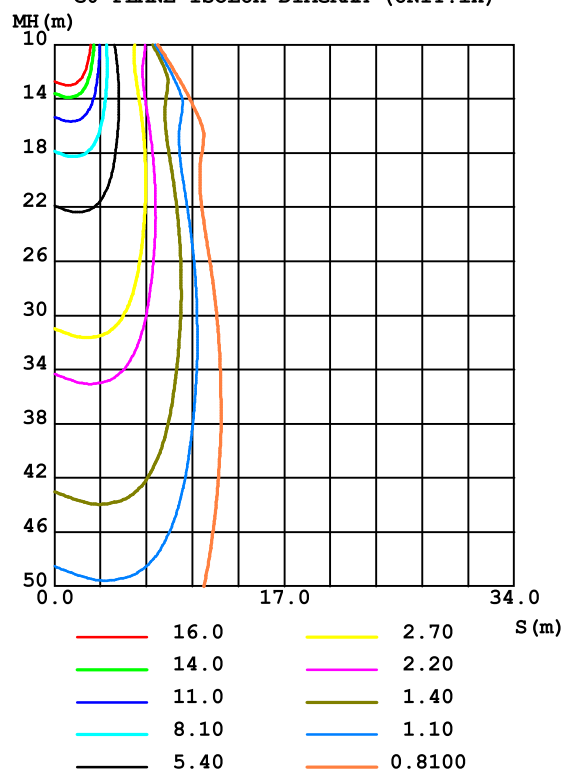
LUMINAIRE PHOTOMETRIC TEST REPORT

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 74.34 lm/W
MODEL	02.49.0030.__	Imax(cd)	2735	S/MH(C0/180)	0.59	
NOMINAL POWER(W)	15	LOR(%)	100.0	S/MH(C90/270)	0.56	
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	1100.2	η UP,DN(C0-180)	0.3,50.0	
NOMINAL FLUX(lm)	1100.18	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.3,49.3	
LAMPS INSIDE	1	η up(%)	0.6	CIBSE SHR NOM	0.50	
TEST VOLTAGE(V)	230	η down(%)	99.4	CIBSE SHR MAX	0.50	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 180DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-07-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.960m [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	2502	2321	2207	2176	2179	2176	2207	2321	0- 10	235.7	235.7	21.4, 21.4
20	1109	986.5	947.9	998.4	1071	998.4	947.9	986.5	10- 20	435.0	670.6	61, 61
30	436.3	423.3	418.7	407.3	420.8	407.3	418.7	423.3	20- 30	282.8	953.5	86.7, 86.7
40	36.56	10.21	7.381	7.684	11.47	7.684	7.381	10.21	30- 40	133.1	1087	98.8, 98.8
50	2.215	2.077	2.044	2.037	2.150	2.037	2.044	2.077	40- 50	2.898	1089	99, 99
60	1.587	1.430	1.242	1.146	1.154	1.146	1.242	1.430	50- 60	1.473	1091	99.2, 99.2
70	1.274	1.037	0.7090	0.5291	0.4708	0.5291	0.7090	1.037	60- 70	1.015	1092	99.2, 99.2
80	0.9608	0.7640	0.5017	0.3254	0.2511	0.3254	0.5017	0.7640	70- 80	0.6862	1093	99.3, 99.3
90	0.5908	0.0765	0	0.0009	0.1146	0.0009	0	0.0765	80- 90	0.4990	1093	99.4, 99.4
100	0	0	0	0	0	0	0	0	90-100	0.0047	1093	99.4, 99.4
110	0	0	0	0	0	0	0	0	100-110	0	1093	99.4, 99.4
120	0.0158	0.0594	0.0872	0.0872	0.0505	0.0872	0.0872	0.0594	110-120	0.0091	1093	99.4, 99.4
130	0.4476	0.5445	0.6108	0.5810	0.4836	0.5810	0.6108	0.5445	120-130	0.2428	1093	99.4, 99.4
140	1.471	1.686	1.837	1.755	1.528	1.755	1.837	1.686	130-140	0.8062	1094	99.5, 99.5
150	3.223	3.522	3.736	3.669	3.365	3.669	3.736	3.522	140-150	1.610	1096	99.6, 99.6
160	5.137	5.405	5.633	5.494	5.263	5.494	5.633	5.405	150-160	2.067	1098	99.8, 99.8
170	6.487	6.477	6.616	6.422	6.417	6.422	6.616	6.477	160-170	1.702	1100	99.9, 99.9
180	6.998	6.820	6.907	6.809	6.926	6.809	6.907	6.820	170-180	0.6351	1100	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1088.4 lm

%lum = 98.9%

%lamp = 98.9%

Conical surface Flux(120deg): 1090.9 lm

%lum = 99.2%

%lamp = 99.2%

C Range: 0 - 180DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2020-07-29

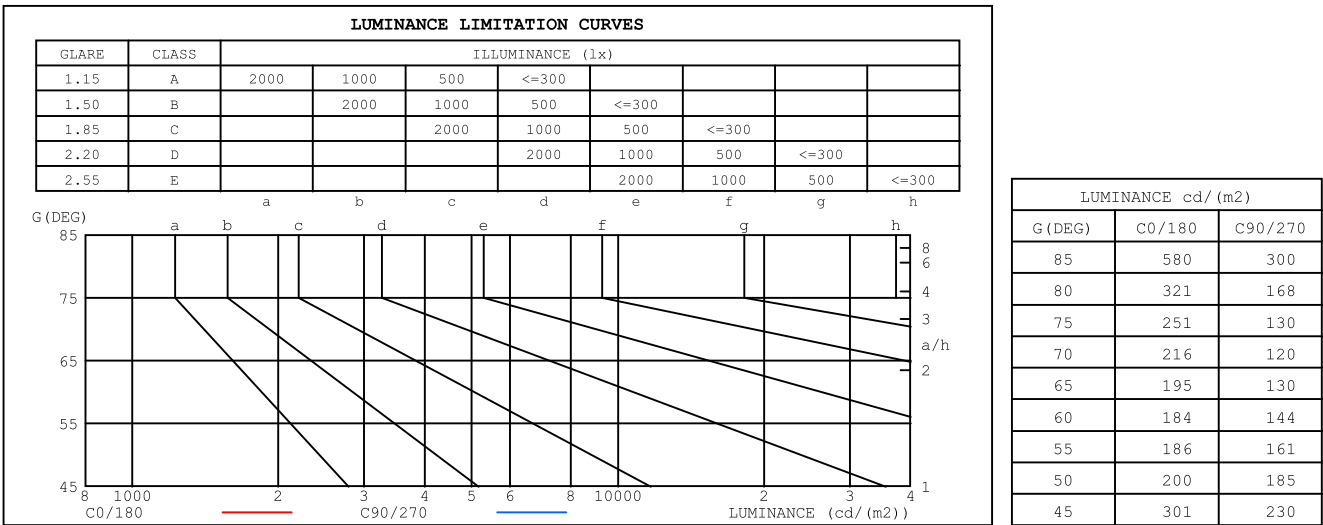
γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 6.960m [K=1.0000]
 Remarks:



IDEA

/KOZMO R (02.49.0030.__)

LUMINANCE LIMITATION CURVES



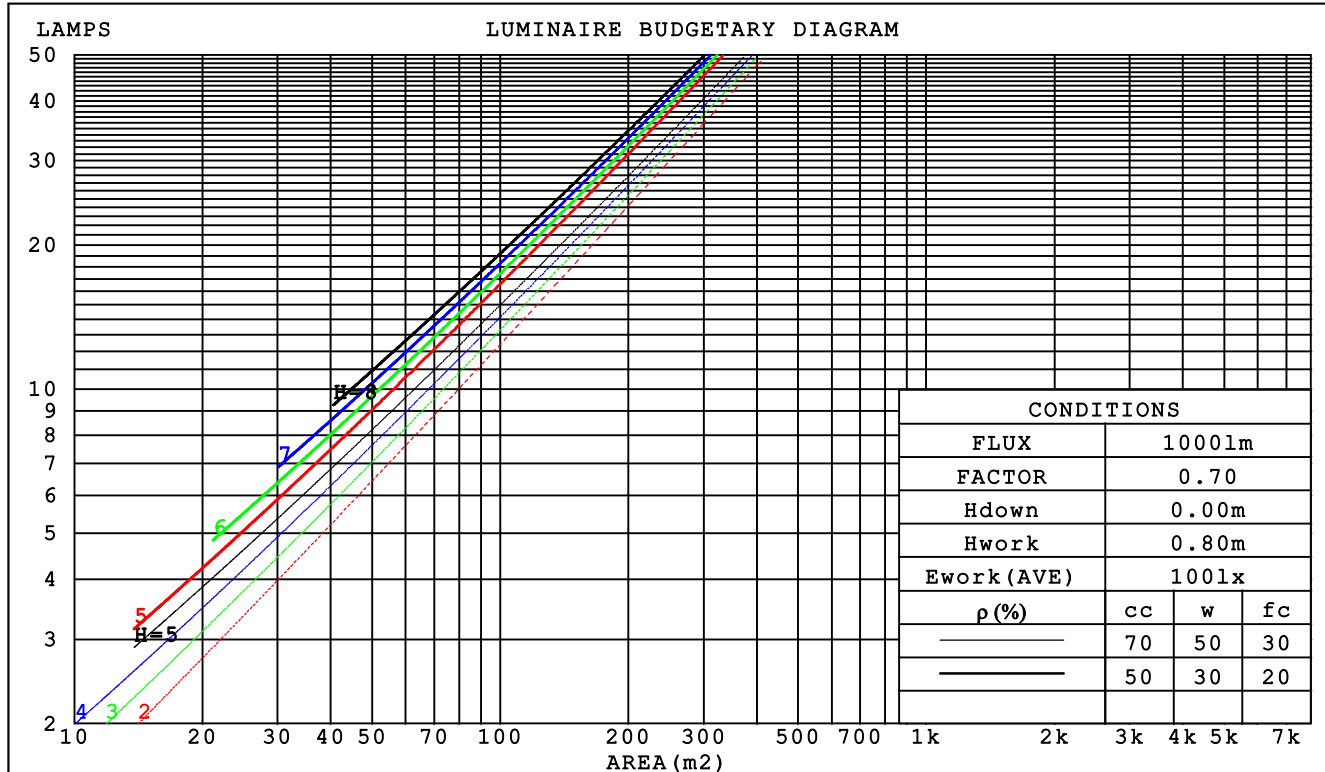
C Range: 0 - 180DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-07-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.960m [K=1.0000]
Remarks:



CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{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	1.01	1.01	1.01	.99
1.0	1.12	1.10	1.08	1.10	1.08	1.06	1.06	1.04	1.03	1.02	1.01	.99	.98	.97	.96	.95
2.0	1.06	1.02	.99	1.04	1.01	.98	1.01	.98	.96	.98	.96	.94	.95	.93	.92	.90
3.0	.90	.96	.93	.99	.95	.92	.96	.93	.90	.94	.91	.89	.91	.89	.87	.86
4.0	.95	.90	.87	.94	.90	.86	.92	.88	.85	.90	.87	.84	.88	.85	.83	.82
5.0	.90	.86	.82	.90	.85	.82	.88	.84	.81	.86	.83	.80	.85	.82	.79	.78
6.0	.86	.81	.78	.86	.81	.78	.84	.80	.77	.83	.79	.76	.81	.78	.76	.75
7.0	.83	.78	.74	.82	.77	.74	.81	.77	.73	.79	.76	.73	.78	.75	.73	.71
8.0	.79	.74	.71	.78	.74	.71	.77	.73	.70	.76	.73	.70	.76	.72	.70	.68
9.0	.76	.71	.68	.75	.71	.68	.74	.70	.67	.74	.70	.67	.73	.69	.67	.66
10.0	.73	.68	.65	.72	.68	.65	.72	.67	.65	.71	.67	.64	.70	.67	.64	.63



C Range: 0 - 180DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2020-07-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 6.960m [K=1.0000]
Remarks:



WEC AND CCEC

ρ_{cc}	80%			70%			50%			30%			10%			0	
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρ_{fc}	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.154	.088	.028	.147	.084	.027	.135	.077	.025	.123	.071	.023	.112	.065	.021		
2.0	.145	.079	.024	.139	.077	.024	.129	.072	.022	.119	.067	.021	.110	.062	.020		
3.0	.137	.073	.022	.132	.071	.021	.123	.067	.020	.114	.063	.019	.107	.059	.018		
4.0	.129	.067	.020	.125	.066	.019	.118	.062	.019	.110	.059	.018	.104	.056	.017		
5.0	.123	.063	.018	.119	.061	.018	.113	.059	.017	.106	.056	.017	.101	.054	.016		
6.0	.117	.059	.017	.114	.058	.017	.108	.055	.016	.103	.053	.016	.097	.051	.015		
7.0	.112	.055	.016	.109	.054	.015	.104	.053	.015	.099	.051	.015	.095	.049	.014		
8.0	.107	.052	.015	.105	.051	.015	.100	.050	.014	.096	.048	.014	.092	.047	.014		
9.0	.103	.050	.014	.100	.049	.014	.096	.048	.014	.093	.046	.013	.089	.045	.013		
10.0	.099	.047	.013	.097	.047	.013	.093	.046	.013	.089	.044	.013	.086	.043	.012		

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.195	.195	.195	.167	.167	.167	.114	.114	.114	.065	.065	.065	.021	.021	.021	
1.0	.174	.162	.152	.149	.139	.130	.102	.096	.090	.059	.056	.052	.019	.018	.017	
2.0	.158	.138	.121	.135	.118	.104	.093	.082	.073	.053	.048	.043	.017	.015	.014	
3.0	.144	.118	.098	.123	.102	.085	.085	.071	.060	.049	.041	.035	.016	.013	.012	
4.0	.132	.103	.081	.114	.089	.071	.078	.062	.050	.045	.036	.029	.015	.012	.010	
5.0	.123	.091	.068	.105	.079	.059	.073	.055	.042	.042	.032	.025	.014	.011	.008	
6.0	.115	.082	.058	.098	.071	.051	.068	.050	.036	.039	.029	.021	.013	.010	.007	
7.0	.108	.074	.050	.093	.064	.044	.064	.045	.031	.037	.026	.018	.012	.009	.006	
8.0	.102	.067	.044	.087	.058	.038	.060	.041	.027	.035	.024	.016	.011	.008	.005	
9.0	.096	.062	.039	.083	.054	.034	.057	.038	.024	.033	.022	.014	.011	.007	.005	
10.0	.092	.057	.035	.079	.050	.030	.055	.035	.021	.032	.021	.013	.010	.007	.004	

C Range: 0 - 180DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-07-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:6.960m [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	12.0	12.8	12.2	12.9	13.1	10.7	11.5	10.9	11.7	11.8
3H	11.8	12.6	12.1	12.8	13.0	10.6	11.3	10.8	11.5	11.7
4H	11.8	12.4	12.0	12.7	12.9	10.5	11.2	10.8	11.4	11.6
6H	11.7	12.3	12.0	12.6	12.8	10.4	11.0	10.7	11.3	11.5
8H	11.6	12.3	12.0	12.5	12.8	10.4	11.0	10.7	11.2	11.5
12H	11.6	12.2	11.9	12.5	12.8	10.3	10.9	10.6	11.2	11.5
4H 2H	11.7	12.4	12.0	12.6	12.9	10.5	11.2	10.8	11.4	11.6
3H	11.6	12.2	11.9	12.4	12.7	10.3	10.9	10.6	11.2	11.5
4H	11.5	12.0	11.8	12.3	12.6	10.2	10.8	10.6	11.1	11.4
6H	11.4	11.9	11.8	12.2	12.6	10.1	10.6	10.5	10.9	11.3
8H	11.4	11.8	11.8	12.2	12.5	10.1	10.5	10.5	10.9	11.3
12H	11.3	11.7	11.8	12.1	12.5	10.0	10.4	10.5	10.8	11.2
8H 4H	11.3	11.8	11.7	12.1	12.5	10.1	10.5	10.5	10.9	11.2
6H	11.3	11.6	11.7	12.0	12.4	10.0	10.3	10.4	10.7	11.2
8H	11.2	11.5	11.7	12.0	12.4	9.9	10.3	10.4	10.7	11.1
12H	11.2	11.5	11.7	11.9	12.4	9.9	10.2	10.4	10.6	11.1
12H 4H	11.3	11.7	11.7	12.1	12.5	10.0	10.4	10.4	10.8	11.2
6H	11.2	11.5	11.7	11.9	12.4	9.9	10.2	10.4	10.7	11.1
8H	11.2	11.4	11.6	11.9	12.4	9.9	10.2	10.4	10.6	11.1
Variations with the observer position at spacings:										
S = 1.0H	+ 6.5 / - 9.4					+ 5.9 / - 4.6				
1.5H	+ 9.3 / - 9.4					+ 8.6 / - 4.5				
2.0H	+ 0.2 / - 0.3					+ 0.1 / - 0.2				

CIE Pub.117, 1100 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.3)

C Range: 0 - 180DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-07-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.960m [K=1.0000]
Remarks:



UTILIZATION FACTORS TABLE

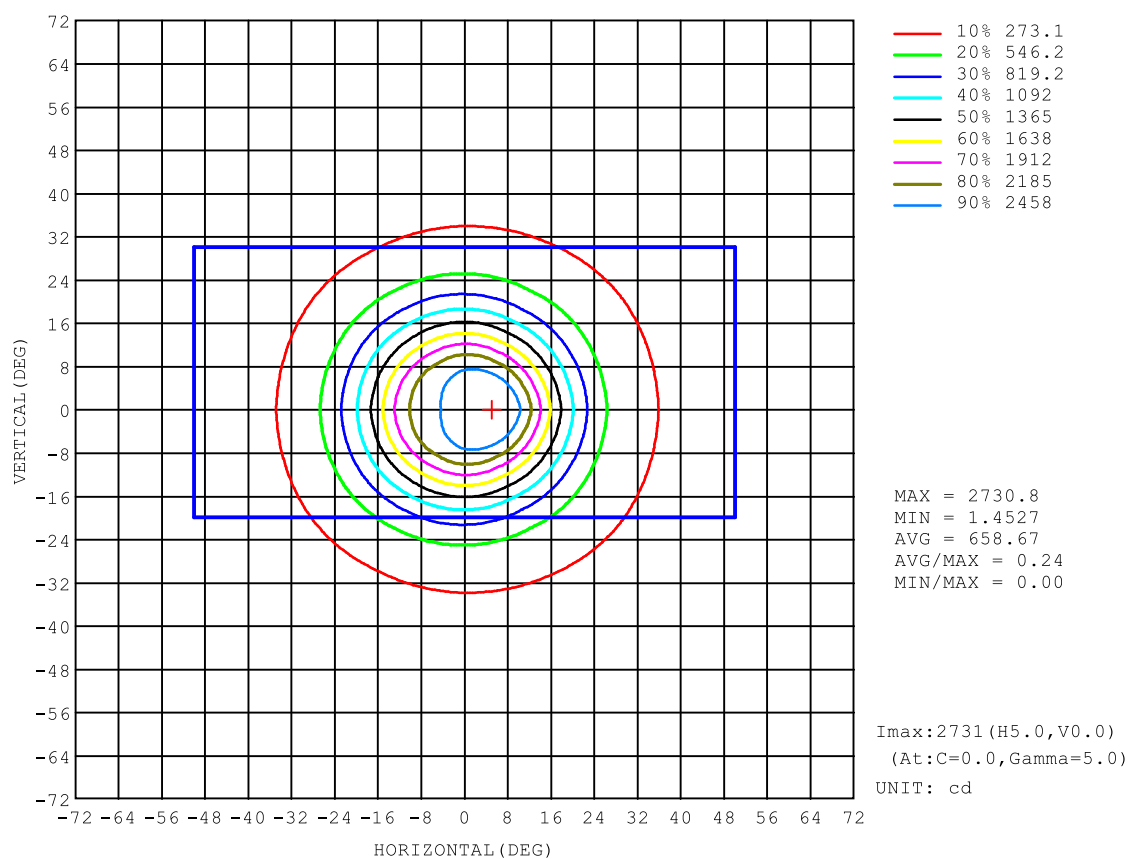
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	85	82	90	85	82	90	85	82	78
0.80	98	93	89	97	92	89	96	92	89	85
1.00	101	96	93	101	96	93	99	96	92	89
1.25	105	100	97	104	100	97	102	99	96	92
1.50	107	103	100	106	102	100	104	101	99	94
2.00	110	106	103	108	105	102	105	103	101	95
2.50	111	108	105	109	106	104	106	104	102	96
3.00	112	109	107	111	108	106	107	105	103	97
4.00	114	112	110	112	110	108	109	107	106	98
5.00	116	113	112	113	112	110	109	108	107	99
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 180DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2020-07-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 6.960m [K=1.0000]
 Remarks:



ISOCANDELA DIAGRAM

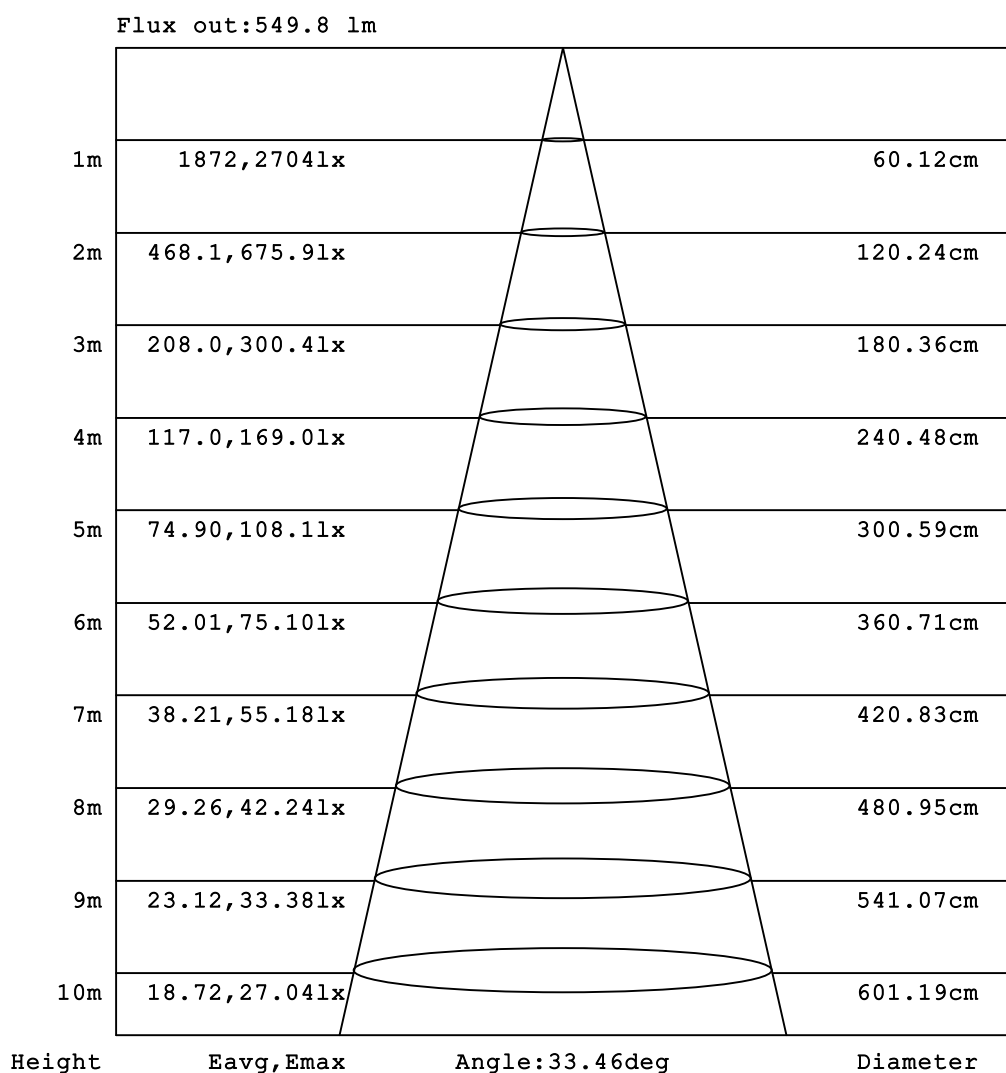


C Range: 0 - 180DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-07-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:6.960m [K=1.0000]
Remarks:



AAI Figure



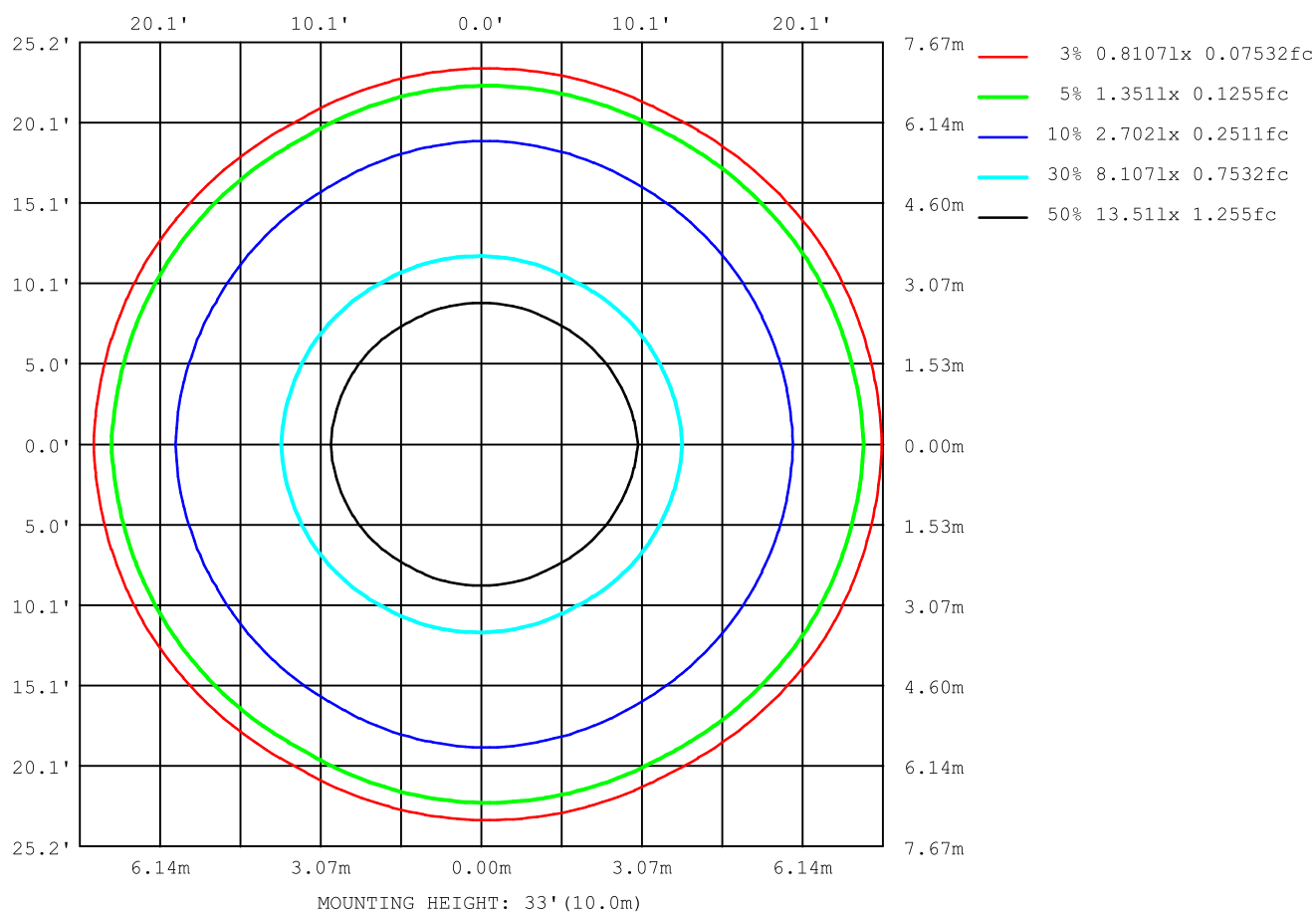
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 180DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2020-07-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 6.960m [K=1.0000]
Remarks:



ISOLUX DIAGRAM



C Range: 0 - 180DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2020-07-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 6.960m [K=1.0000]
Remarks:



LED Avg.L Report

AvgL	cd/m2
L_0~180 (65) av	152
L_0~180 (75) av	162
L_0~180 (85) av	359
L_90~270 (65) av	131
L_90~270 (75) av	131
L_90~270 (85) av	300
L_45 (65) av	140
L_45 (75) av	143
L_45 (85) av	325

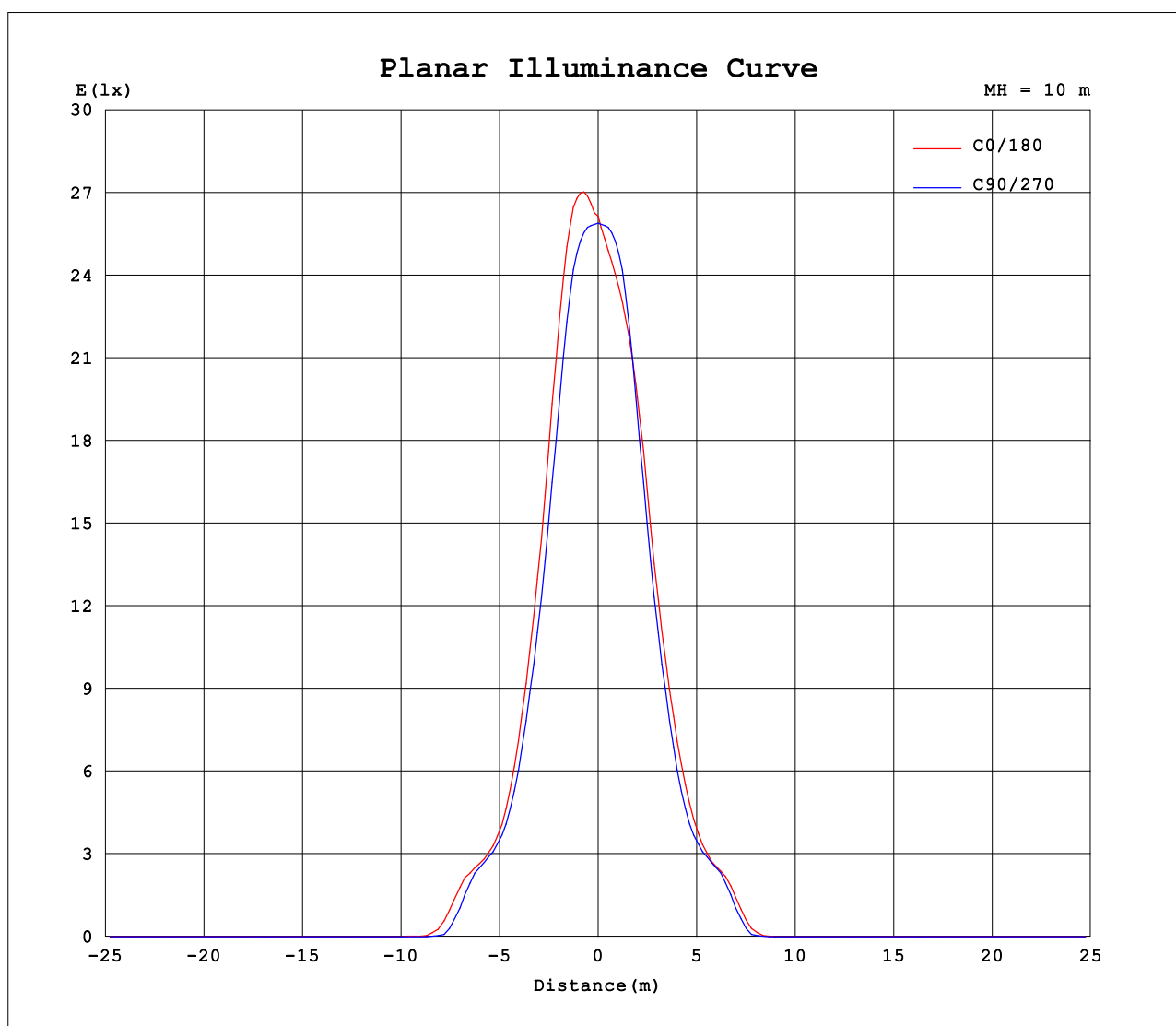
Standard: GB/T 29293-2012

C Range: 0 - 180DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2020-07-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 6.960m [K=1.0000]
Remarks:



Planar Illuminance Curve



C Range: 0 - 180DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2020-07-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 6.960m [K=1.0000]
Remarks:



LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	2594	2594	2594	2594	2594	2594	2594	2594	2594	2594	2594	2594						
5	2735	2692	2625	2560	2491	2442	2414	2442	2491	2560	2625	2692						
10	2502	2387	2255	2207	2167	2184	2179	2184	2167	2207	2255	2387						
15	1779	1650	1530	1515	1518	1591	1637	1591	1518	1515	1530	1650						
20	1109	1029	944	948	964	1033	1071	1033	964	948	944	1029						
25	627	590	544	551	559	613	645	613	559	551	544	590						
30	436	427	419	419	407	408	421	408	407	419	419	427						
35	331	288	215	192	172	220	262	220	172	192	215	288						
40	36.6	11.8	8.60	7.38	6.46	8.90	11.5	8.90	6.46	7.38	8.60	11.8						
45	3.66	2.90	2.79	2.80	2.81	2.95	3.30	2.95	2.81	2.80	2.79	2.90						
50	2.21	2.11	2.04	2.04	2.02	2.05	2.15	2.05	2.02	2.04	2.04	2.11						
55	1.84	1.75	1.64	1.59	1.53	1.56	1.60	1.56	1.53	1.59	1.64	1.75						
60	1.59	1.50	1.36	1.24	1.15	1.14	1.15	1.14	1.15	1.24	1.36	1.50						
65	1.42	1.33	1.13	0.95	0.82	0.78	0.78	0.78	0.82	0.95	1.13	1.33						
70	1.27	1.15	0.92	0.71	0.57	0.49	0.47	0.49	0.57	0.71	0.92	1.15						
75	1.12	0.99	0.77	0.58	0.44	0.36	0.33	0.36	0.44	0.58	0.77	0.99						
80	0.96	0.86	0.67	0.50	0.37	0.28	0.25	0.28	0.37	0.50	0.67	0.86						
85	0.87	0.78	0.62	0.45	0.32	0.23	0.21	0.23	0.32	0.45	0.62	0.78						
90	0.59	0.15	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.15						
95	0.00	0.00	0.00	0.00	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	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	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	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	0.00	0.00	0.00	0.00						
120	0.02	0.04	0.08	0.09	0.10	0.07	0.05	0.07	0.10	0.09	0.08	0.04						
125	0.18	0.22	0.27	0.29	0.30	0.26	0.22	0.26	0.30	0.29	0.27	0.22						
130	0.45	0.50	0.59	0.61	0.61	0.55	0.48	0.55	0.61	0.61	0.59	0.50						
135	0.86	0.95	1.07	1.11	1.11	1.01	0.90	1.01	1.11	1.11	1.07	0.95						
140	1.47	1.60	1.77	1.84	1.82	1.68	1.53	1.68	1.82	1.84	1.77	1.60						
145	2.29	2.44	2.64	2.76	2.74	2.57	2.38	2.57	2.74	2.76	2.64	2.44						
150	3.22	3.40	3.64	3.74	3.77	3.57	3.37	3.57	3.77	3.74	3.64	3.40						
155	4.17	4.37	4.59	4.72	4.73	4.54	4.35	4.54	4.73	4.72	4.59	4.37						
160	5.14	5.30	5.51	5.63	5.58	5.41	5.26	5.41	5.58	5.63	5.51	5.30						
165	5.99	6.06	6.14	6.29	6.17	6.04	5.99	6.04	6.17	6.29	6.14	6.06						
170	6.49	6.49	6.46	6.62	6.48	6.36	6.42	6.36	6.48	6.62	6.46	6.49						
175	6.83	6.77	6.72	6.86	6.72	6.63	6.72	6.63	6.72	6.86	6.72	6.77						
180	7.00	6.84	6.80	6.91	6.81	6.81	6.93	6.81	6.81	6.91	6.80	6.84						

C Range: 0 - 180DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2020-07-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 6.960m [K=1.0000]
 Remarks: