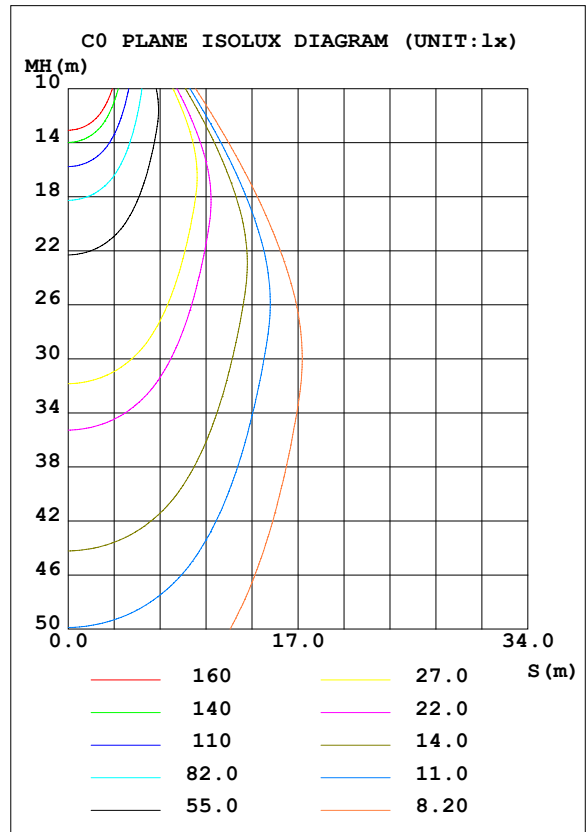
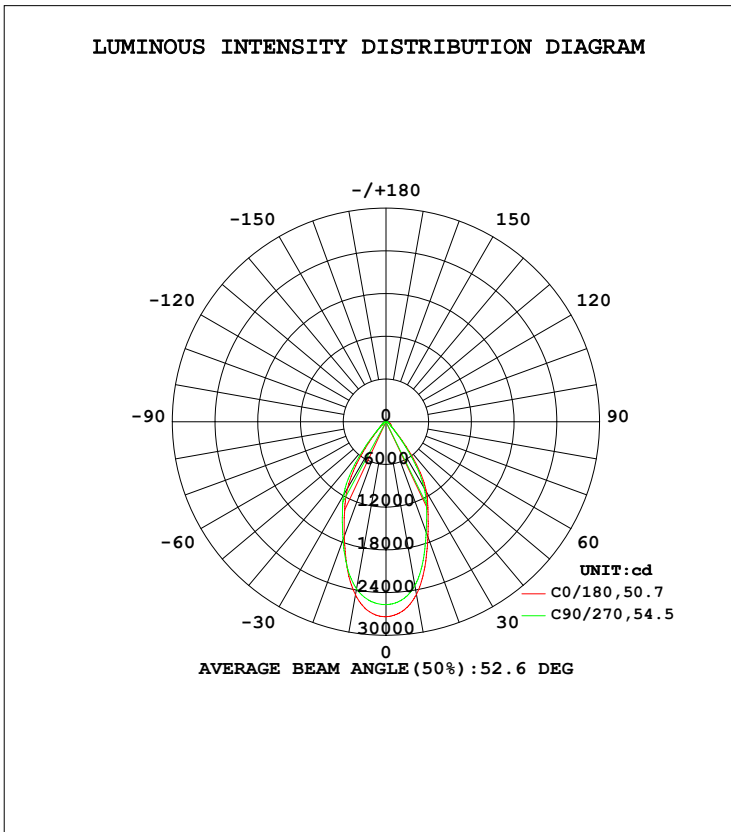


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:219.5V I:0.7003A P:152.0W PF:0.9884 Freq:49.99Hz Lamp Flux:22105.2x1 lm		
NAME: 150W LED HIGH BAY LIGHT 60°	TYPE:UFO	WEIGHT:
SPEC.:PHILIPS 3030	DIM.: φ305mm	SERIAL No.:
MFR.: QINHAN LIGHTING	SUR.:φ205mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 145.47 lm/W			
MODEL	QH-HBUFO-150W	I <sub>max</sub> (cd)	27374	S/MH (C0/180)	0.76
NOMINAL POWER (W)	150	LOR (%)	100.0	S/MH (C90/270)	0.82
RATED VOLTAGE (V)	220.0	TOTAL FLUX (lm)	22105	η UP, DN (C0-180)	0.0, 48.7
NOMINAL FLUX (lm)	22105.2	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 51.3
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	0.90



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: 1  
 Test Date: 2019-01-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity: 65.0%  
 Test Distance: 9.850m [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	2463	2381	2337	2325	2470	2429	2383	2349	0- 10	2382	2382	10.8,10.8
20	1723	1678	1653	1663	1714	1753	1765	1756	10- 20	5751	8133	36.8,36.8
30	1135	1118	1072	1084	1080	1160	1190	1178	20- 30	6428	14561	65.9,65.9
40	380.6	344.8	325.3	347.4	349.8	386.1	433.7	455.0	30- 40	4689	19250	87.1,87.1
50	95.74	87.21	87.56	85.89	94.41	96.40	98.56	97.74	40- 50	1427	20677	93.5,93.5
60	58.71	53.20	50.32	48.67	56.77	55.69	55.82	53.99	50- 60	623.0	21300	96.4,96.4
70	36.47	32.46	30.73	29.07	35.48	34.32	34.71	32.88	60- 70	421.6	21722	98.3,98.3
80	22.60	19.13	17.12	15.98	20.41	20.10	21.07	20.36	70- 80	283.8	22006	99.5,99.5
90	0.5963	0.2448	0.1276	0.1295	0.2363	0.2701	0.5976	0.8059	80- 90	99.54	22105	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:×10cd									UNIT:lm		

Conical surface Flux(90deg): 20190 lm

%lum = 91.3%  
 %lamp = 91.3%

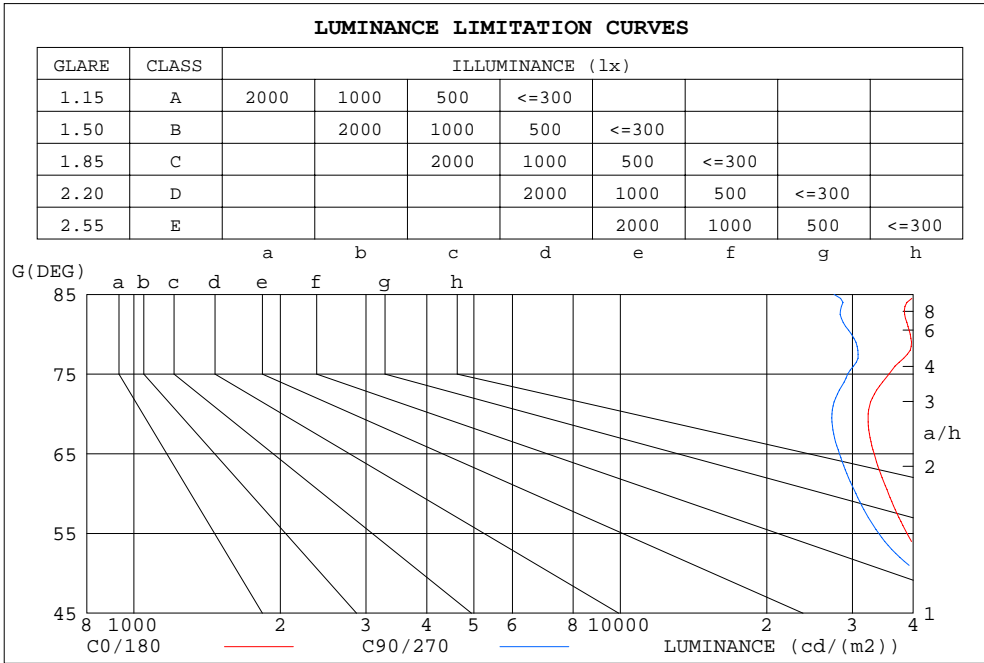
Conical surface Flux(120deg): 21300 lm

%lum = 96.4%  
 %lamp = 96.4%

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:1  
 Test Date:2019-01-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity:65.0%  
 Test Distance:9.850m [K=1.0000]  
 Remarks:

LUMINANCE LIMITATION CURVES



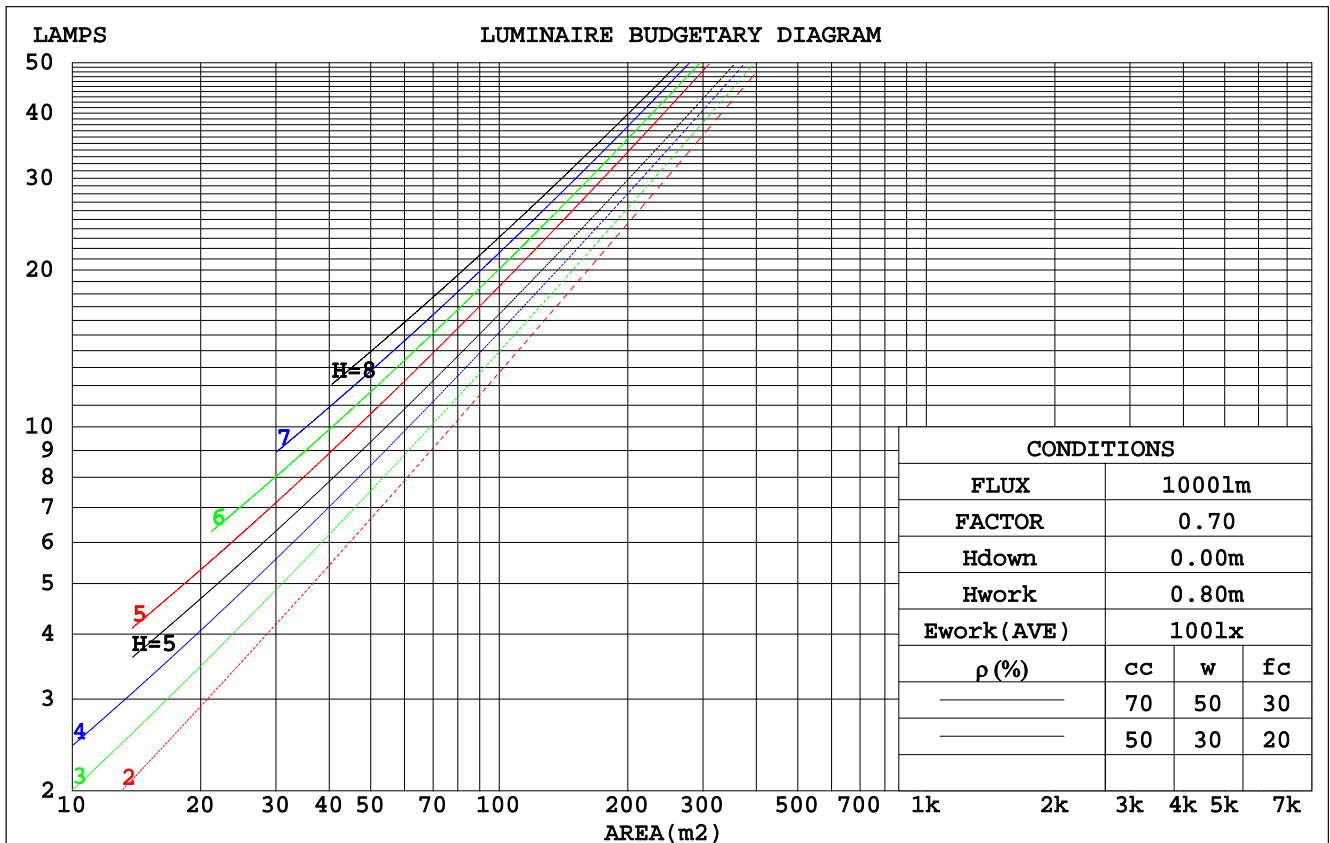
LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	41394	27505
80	39437	29874
75	35666	29329
70	32314	27231
65	33250	28221
60	35583	30498
55	38849	34002
50	45133	41280
45	69337	62710

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: 1  
 Test Date: 2019-01-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity: 65.0%  
 Test Distance: 9.850m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	.00
1.0	1.10	1.07	1.05	1.08	1.05	1.03	1.04	1.02	.00	.00	.98	.97	.96	.95	.94	.92
2.0	1.01	.97	.93	.00	.96	.92	.96	.93	.90	.93	.91	.88	.91	.88	.86	.85
3.0	.94	.89	.84	.93	.88	.84	.90	.86	.82	.87	.84	.81	.85	.82	.80	.78
4.0	.87	.82	.77	.86	.81	.77	.84	.79	.76	.82	.78	.75	.80	.77	.74	.72
5.0	.82	.75	.71	.81	.75	.71	.79	.74	.70	.77	.73	.69	.76	.72	.69	.67
6.0	.76	.70	.66	.76	.70	.65	.74	.69	.65	.73	.68	.64	.71	.67	.64	.62
7.0	.72	.65	.61	.71	.65	.61	.70	.64	.60	.68	.64	.60	.67	.63	.60	.58
8.0	.67	.61	.57	.67	.61	.57	.66	.60	.57	.65	.60	.56	.64	.59	.56	.55
9.0	.64	.58	.53	.63	.57	.53	.62	.57	.53	.61	.56	.53	.60	.56	.53	.51
10.0	.60	.54	.50	.60	.54	.50	.59	.54	.50	.58	.53	.50	.57	.53	.50	.48



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: 1  
 Test Date: 2019-01-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity: 65.0%  
 Test Distance: 9.850m [K=1.0000]  
 Remarks:

WEC AND CCEC

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.196	.112	.035	.189	.108	.034	.177	.101	.032	.165	.095	.031	.154	.089	.029	
2.0	.186	.102	.031	.181	.099	.031	.170	.094	.029	.160	.090	.028	.151	.085	.027	
3.0	.176	.094	.028	.171	.092	.028	.162	.088	.027	.153	.084	.026	.145	.080	.025	
4.0	.166	.086	.025	.162	.085	.025	.154	.082	.024	.147	.079	.024	.140	.076	.023	
5.0	.157	.080	.023	.154	.079	.023	.147	.076	.022	.140	.074	.022	.134	.072	.022	
6.0	.149	.075	.021	.146	.074	.021	.140	.072	.021	.134	.070	.021	.129	.068	.020	
7.0	.142	.070	.020	.139	.069	.020	.134	.068	.019	.129	.066	.019	.124	.064	.019	
8.0	.135	.066	.019	.133	.065	.018	.128	.064	.018	.123	.063	.018	.119	.061	.018	
9.0	.129	.063	.017	.127	.062	.017	.123	.061	.017	.118	.059	.017	.115	.058	.017	
10.0	.124	.059	.016	.121	.059	.016	.118	.058	.016	.114	.057	.016	.110	.055	.016	

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	.172	.157	.143	.148	.135	.123	.101	.093	.085	.058	.054	.050	.019	.017	.016	
2.0	.158	.132	.111	.135	.114	.096	.093	.079	.067	.054	.046	.039	.017	.015	.013	
3.0	.146	.114	.088	.125	.098	.076	.086	.068	.053	.050	.040	.031	.016	.013	.010	
4.0	.136	.099	.071	.117	.086	.061	.080	.060	.043	.047	.035	.026	.015	.011	.008	
5.0	.128	.088	.058	.110	.076	.050	.076	.053	.036	.044	.031	.021	.014	.010	.007	
6.0	.120	.079	.048	.104	.068	.042	.071	.048	.030	.041	.028	.018	.013	.009	.006	
7.0	.114	.071	.041	.098	.062	.036	.068	.043	.025	.039	.025	.015	.013	.008	.005	
8.0	.108	.065	.035	.093	.056	.031	.064	.040	.022	.037	.023	.013	.012	.008	.004	
9.0	.103	.060	.030	.089	.052	.027	.061	.036	.019	.036	.022	.011	.012	.007	.004	
10.0	.098	.055	.027	.085	.048	.023	.059	.034	.017	.034	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: 1  
 Test Date: 2019-01-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity: 65.0%  
 Test Distance: 9.850m [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	13.2	14.3	13.5	14.4	14.6	12.8	13.8	13.0	14.0	14.2
3H	13.6	14.5	13.9	14.7	14.9	13.1	14.0	13.3	14.2	14.4
4H	13.9	14.7	14.1	15.0	15.2	13.3	14.2	13.6	14.4	14.6
6H	14.2	15.0	14.5	15.3	15.5	13.5	14.4	13.8	14.6	14.9
8H	14.3	15.1	14.6	15.4	15.7	13.6	14.4	13.9	14.7	14.9
12H	14.4	15.2	14.8	15.5	15.8	13.7	14.4	14.0	14.7	15.0
4H 2H	13.2	14.1	13.5	14.3	14.5	12.8	13.7	13.1	13.9	14.1
3H	13.7	14.5	14.0	14.8	15.0	13.2	14.0	13.6	14.3	14.6
4H	14.1	14.8	14.5	15.1	15.5	13.6	14.3	14.0	14.6	14.9
6H	14.7	15.3	15.0	15.6	16.0	14.0	14.6	14.4	15.0	15.3
8H	14.9	15.5	15.3	15.8	16.2	14.2	14.7	14.6	15.1	15.5
12H	15.1	15.6	15.5	16.0	16.3	14.3	14.8	14.7	15.2	15.6
8H 4H	14.2	14.8	14.6	15.2	15.5	13.8	14.3	14.2	14.7	15.1
6H	14.9	15.4	15.4	15.8	16.2	14.3	14.8	14.7	15.2	15.6
8H	15.2	15.6	15.7	16.1	16.5	14.5	14.9	15.0	15.4	15.8
12H	15.5	15.8	16.0	16.3	16.8	14.7	15.1	15.2	15.5	16.0
12H 4H	14.2	14.8	14.7	15.1	15.5	13.8	14.3	14.2	14.7	15.1
6H	15.0	15.4	15.4	15.8	16.2	14.4	14.8	14.8	15.2	15.6
8H	15.3	15.6	15.8	16.1	16.6	14.6	15.0	15.1	15.4	15.9
Variations with the observer position at spacings:										
S = 1.0H	+ 1.6 / - 1.4					+ 1.5 / - 1.5				
1.5H	+ 3.2 / - 1.3					+ 3.0 / - 1.4				
2.0H	+ 1.0 / - 0.4					+ 0.9 / - 0.5				

CIE Pub.117, 22105 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 10.8)

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:1  
 Test Date:2019-01-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity:65.0%  
 Test Distance:9.850m [K=1.0000]  
 Remarks:

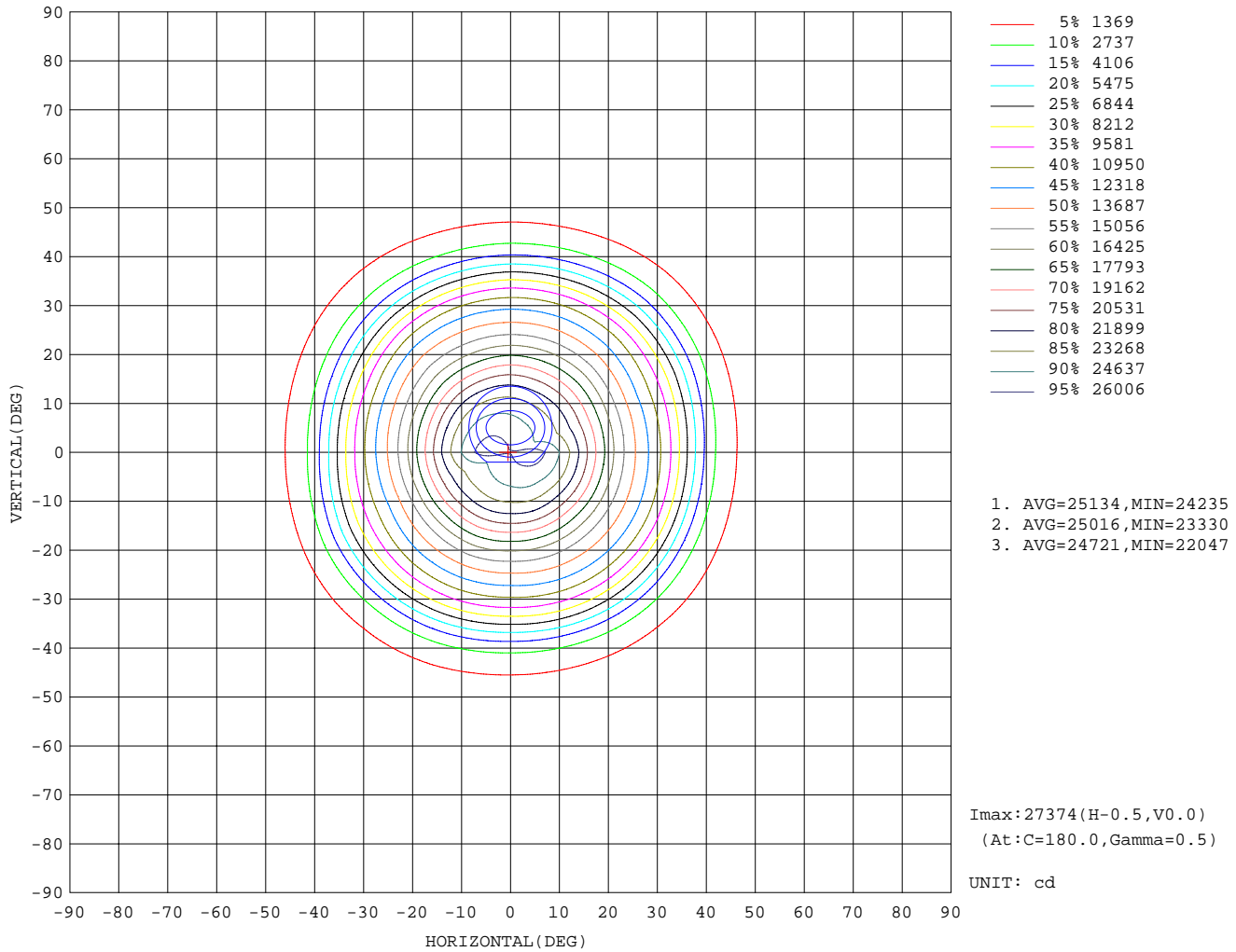
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	72	83	76	72	82	76	72	68
0.80	91	85	81	91	84	80	89	84	80	76
1.00	96	90	86	95	90	86	94	90	85	81
1.25	101	95	91	100	94	90	98	93	90	85
1.50	104	98	94	102	97	94	100	96	93	88
2.00	107	102	98	105	101	98	103	99	96	91
2.50	109	104	101	107	103	100	104	101	98	92
3.00	111	107	104	109	105	102	105	103	100	94
4.00	113	110	107	111	108	106	107	105	103	96
5.00	114	112	109	112	110	108	108	106	105	97
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: 1  
 Test Date: 2019-01-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity: 65.0%  
 Test Distance: 9.850m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

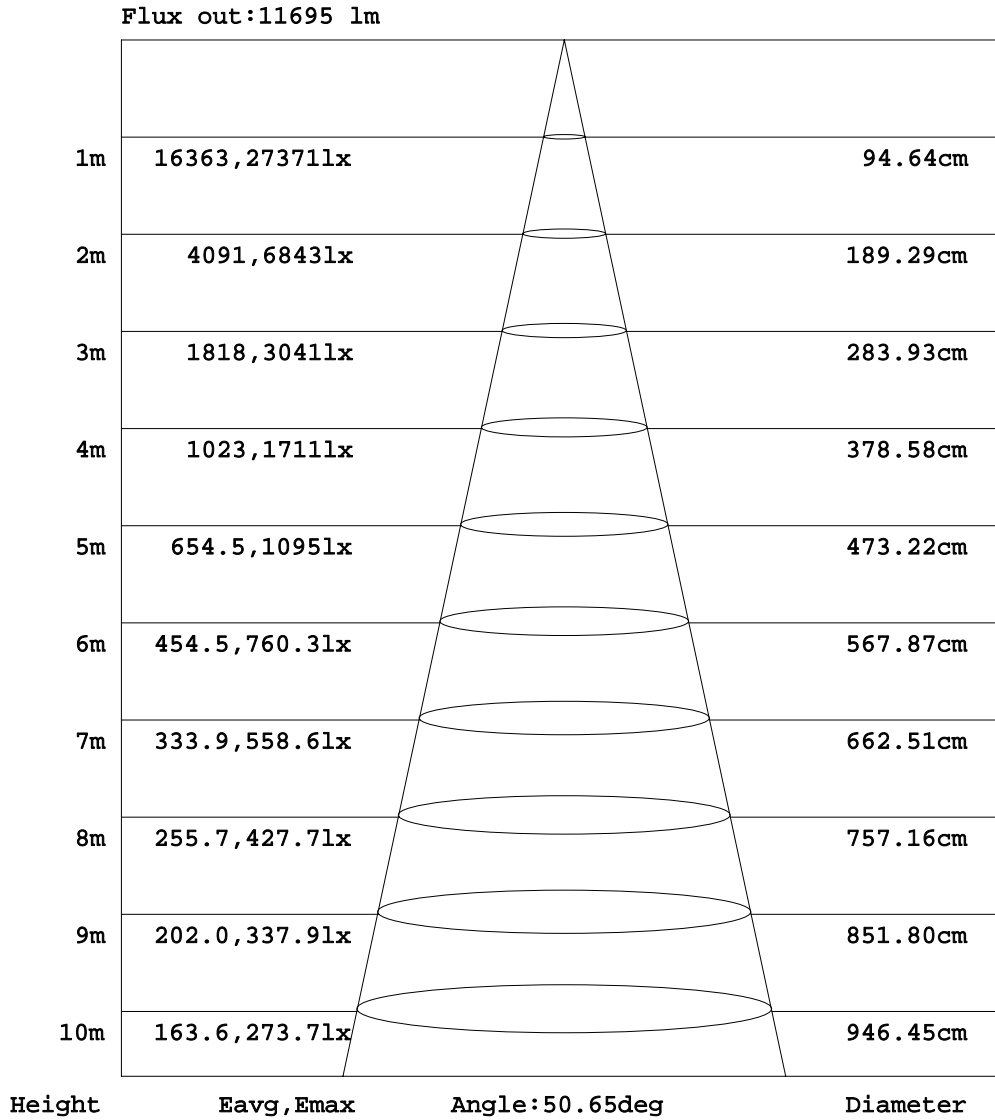


C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: 1  
 Test Date: 2019-01-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity: 65.0%  
 Test Distance: 9.850m [K=1.0000]  
 Remarks:



AAI Figure

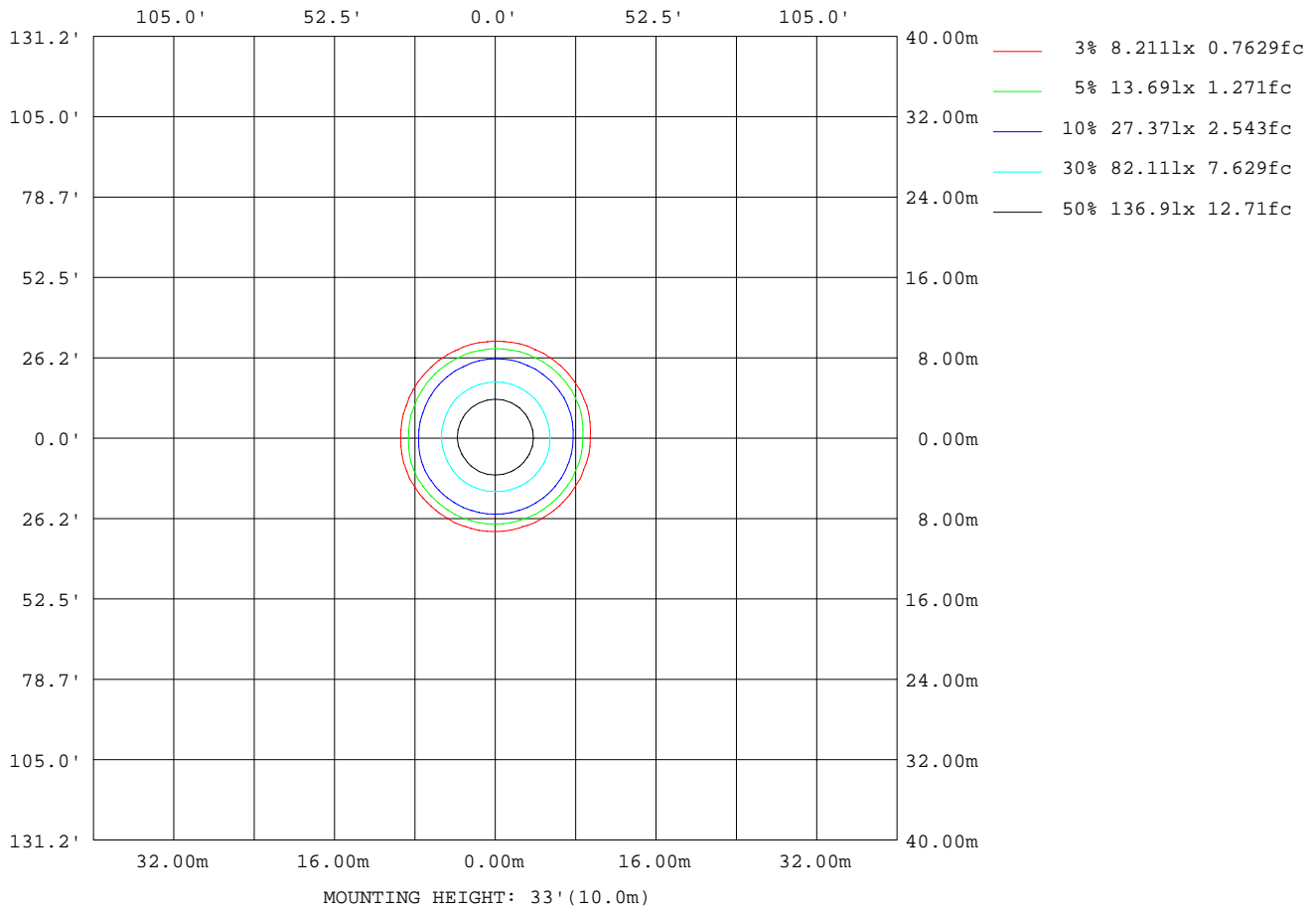


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:1  
 Test Date:2019-01-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity:65.0%  
 Test Distance:9.850m [K=1.0000]  
 Remarks:

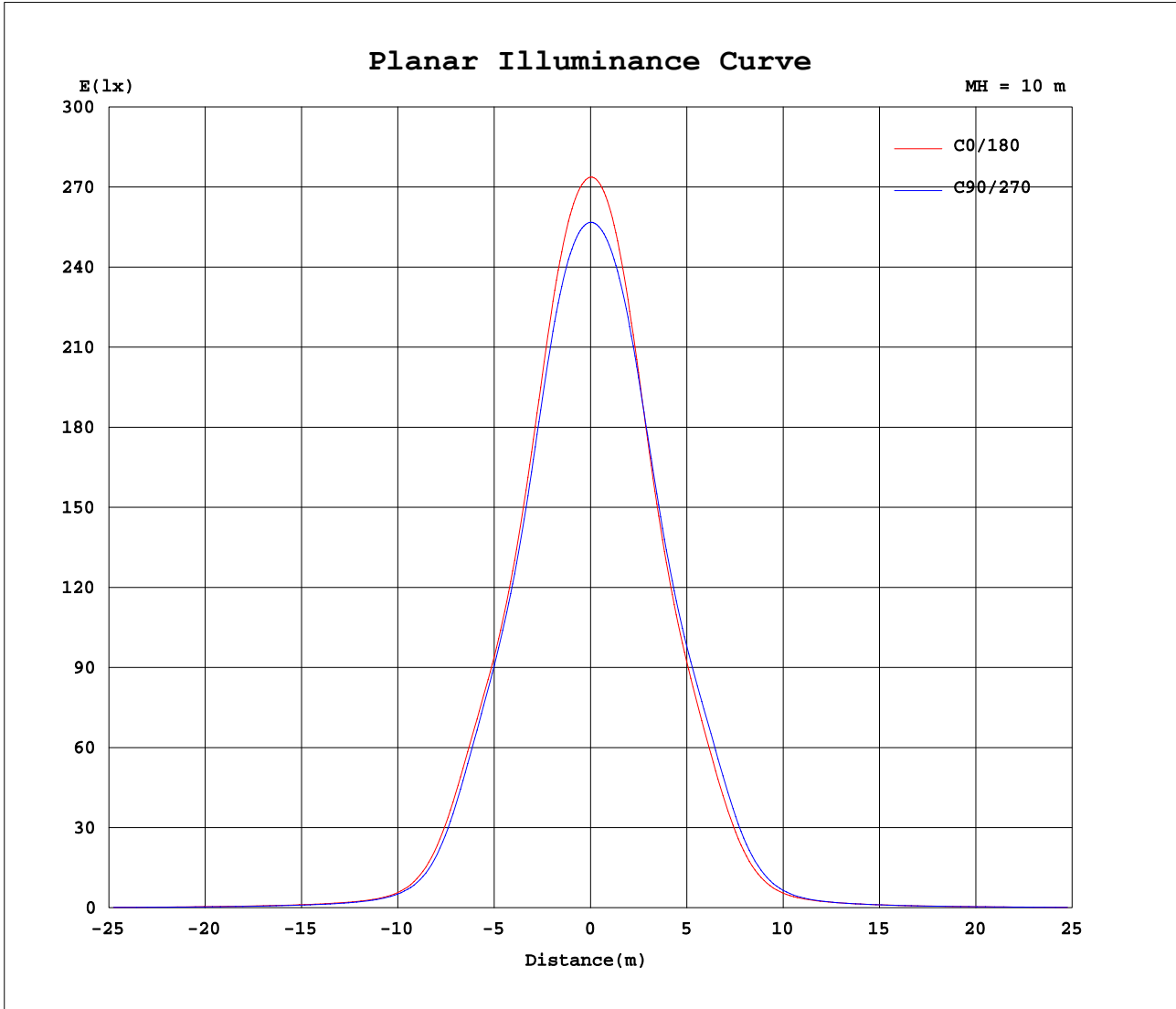
ISOLUX DIAGRAM



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: 1  
 Test Date: 2019-01-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity: 65.0%  
 Test Distance: 9.850m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: 1  
 Test Date: 2019-01-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity: 65.0%  
 Test Distance: 9.850m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: x10cd

C (DEG) \ γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	2737	2686	2641	2603	2568	2540	2517	2496	2737	2686	2641	2603	2568	2540	2517	2496			
5	2669	2625	2577	2545	2514	2496	2478	2466	2679	2632	2596	2556	2528	2500	2483	2464			
10	2463	2428	2381	2362	2337	2334	2325	2333	2470	2441	2429	2402	2383	2357	2349	2335			
15	2111	2086	2046	2034	2019	2029	2030	2053	2115	2107	2118	2108	2111	2092	2090	2070			
20	1723	1703	1678	1669	1653	1670	1663	1677	1714	1724	1753	1750	1765	1759	1756	1725			
25	1398	1395	1385	1374	1351	1361	1356	1343	1377	1400	1445	1444	1452	1454	1443	1404			
30	1135	1137	1118	1099	1072	1085	1084	1071	1080	1103	1160	1179	1190	1192	1178	1136			
35	779	768	742	723	697	718	729	748	713	733	781	810	843	847	849	823			
40	381	360	345	333	325	341	347	378	350	366	386	404	434	440	455	437			
45	162	152	143	144	146	150	147	157	156	165	172	178	186	188	191	186			
50	95.7	91.8	87.2	88.5	87.6	87.5	85.9	87.0	94.4	94.6	96.4	96.6	98.6	97.0	97.7	95.8			
55	73.5	71.2	67.2	66.5	64.4	63.8	62.8	63.2	71.6	70.3	70.7	70.3	70.9	69.6	69.3	68.2			
60	58.7	56.8	53.2	52.5	50.3	49.9	48.7	49.1	56.8	55.4	55.7	55.5	55.8	54.7	54.0	53.2			
65	46.4	44.9	41.6	41.3	39.4	39.0	37.6	38.3	44.8	43.8	43.7	43.8	44.0	43.0	42.2	41.6			
70	36.5	35.3	32.5	32.6	30.7	30.6	29.1	30.0	35.5	34.5	34.3	34.5	34.7	33.7	32.9	32.5			
75	30.5	29.3	26.9	26.9	25.1	24.9	23.5	24.3	29.2	28.1	28.0	28.1	28.4	27.5	26.8	26.7			
80	22.6	21.6	19.1	18.5	17.1	16.8	16.0	16.5	20.4	19.7	20.1	20.2	21.1	20.6	20.4	19.8			
85	11.9	10.0	8.29	7.86	7.91	6.80	6.35	6.79	10.5	8.63	9.11	9.39	11.6	10.0	10.1	9.50			
90	0.60	0.35	0.24	0.17	0.13	0.11	0.13	0.16	0.24	0.24	0.27	0.41	0.60	0.79	0.81	0.71			

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: 1  
 Test Date: 2019-01-21

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity: 65.0%  
 Test Distance: 9.850m [K=1.0000]  
 Remarks: