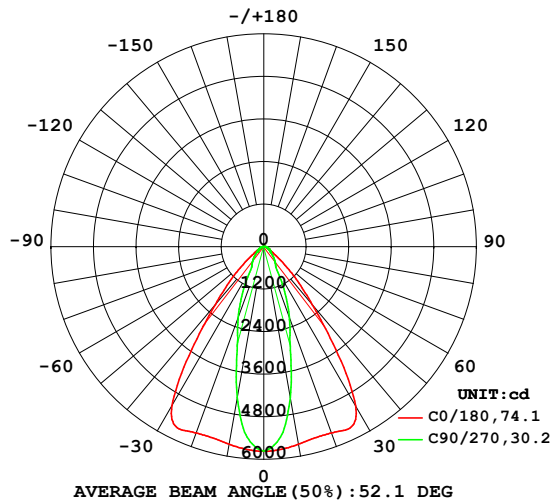


LUMINAIRE PHOTOMETRIC TEST REPORT

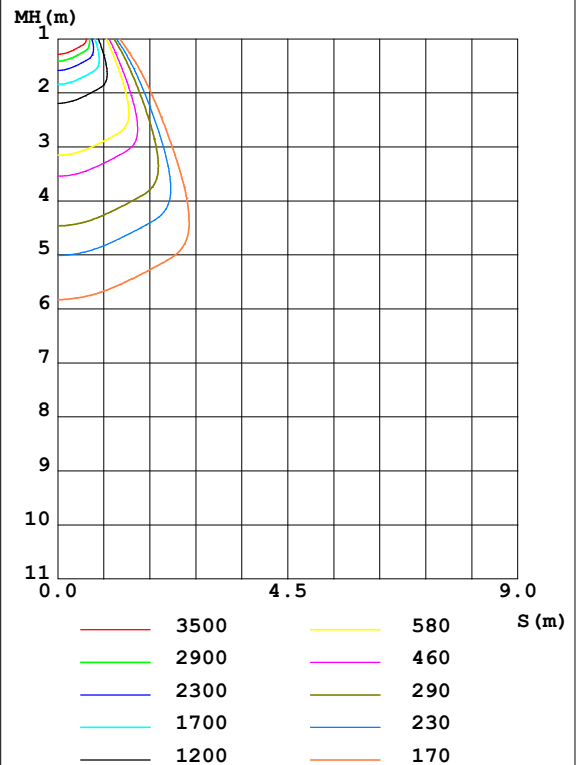
Test:U:230.0V I:0.1466A P:32.70W PF:0.9695 Lamp Flux:5042.04x1 lm					
NAME: LHB01-30H		TYPE:30W		WEIGHT:	
SPEC.:5000K Ra70 3070DEG L06401		DIM.: 0.28*0.137*0.102		SERIAL No.:	
MFR.:		SUR.:0.25*0.1		Shielding Angle:	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 154.20 lm/W			
MODEL	LHB01-30H	I _{max} (cd)	5773	S/MH (C0/180)	1.07
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH (C90/270)	0.50
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	5042.0	η UP,DN (C0-180)	0.0,50.0
NOMINAL FLUX(lm)	5042.04	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,50.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	230	η down (%)	100.0	CIBSE SHR MAX	0.65

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-06-01

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
5	5738	5541	5393	5547	5738	5547	5393	5541	0- 5	135.0	135.0	2.68,2.68
10	5657	4964	4316	4980	5657	4980	4316	4964	5- 10	376.5	511.5	10.1,10.1
15	5584	4052	2909	4069	5584	4069	2909	4052	10- 15	538.7	1050	20.8,20.8
20	5592	3005	2112	3026	5592	3026	2112	3005	15- 20	622.9	1673	33.2,33.2
25	5667	2367	1400	2393	5667	2393	1400	2367	20- 25	674.0	2347	46.6,46.6
30	5182	1826	687.6	1839	5182	1839	687.6	1826	25- 30	675.7	3023	60,60
35	3544	1207	578.3	1209	3544	1209	578.3	1207	30- 35	581.9	3605	71.5,71.5
40	2132	592.8	468.9	604.8	2132	604.8	468.9	592.8	35- 40	430.2	4035	80,80
45	1297	481.5	359.6	488.8	1297	488.8	359.6	481.5	40- 45	304.2	4339	86.1,86.1
50	695.6	373.3	250.2	377.4	695.6	377.4	250.2	373.3	45- 50	216.5	4556	90.4,90.4
55	351.0	268.9	214.7	270.8	351.0	270.8	214.7	268.9	50- 55	149.9	4706	93.3,93.3
60	201.5	175.6	179.3	176.0	201.5	176.0	179.3	175.6	55- 60	106.9	4812	95.4,95.4
65	130.1	136.0	143.8	137.4	130.1	137.4	143.8	136.0	60- 65	79.12	4891	97,97
70	87.08	95.92	108.3	98.36	87.08	98.36	108.3	95.92	65- 70	58.90	4950	98.2,98.2
75	52.90	56.42	81.69	59.96	52.90	59.96	81.69	56.42	70- 75	42.15	4993	99,99
80	18.47	36.25	55.04	38.61	18.47	38.61	55.04	36.25	75- 80	27.91	5020	99.6,99.6
85	4.781	19.18	28.40	19.87	4.781	19.87	28.40	19.18	80- 85	15.86	5036	99.9,99.9
90	0.7481	2.438	1.754	1.379	0.7481	1.379	1.754	2.438	85- 90	5.722	5042	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 4339.2 lm

%lum = 86.1%

%lamp = 86.1%

Conical surface Flux(120deg): 4812.4 lm

%lum = 95.4%

%lamp = 95.4%

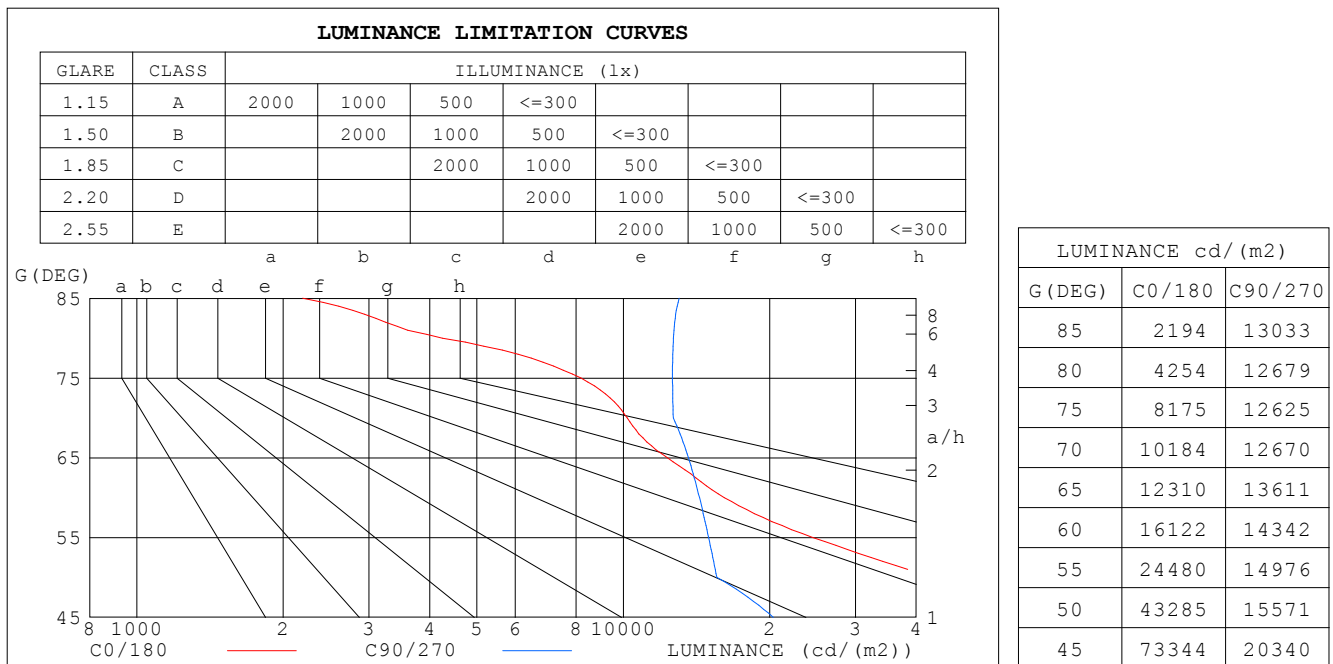
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-06-01

Checker:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:9.500m [K=1.0000]
 Remarks:

Assessor:

LUMINANCE LIMITATION CURVES



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-06-01

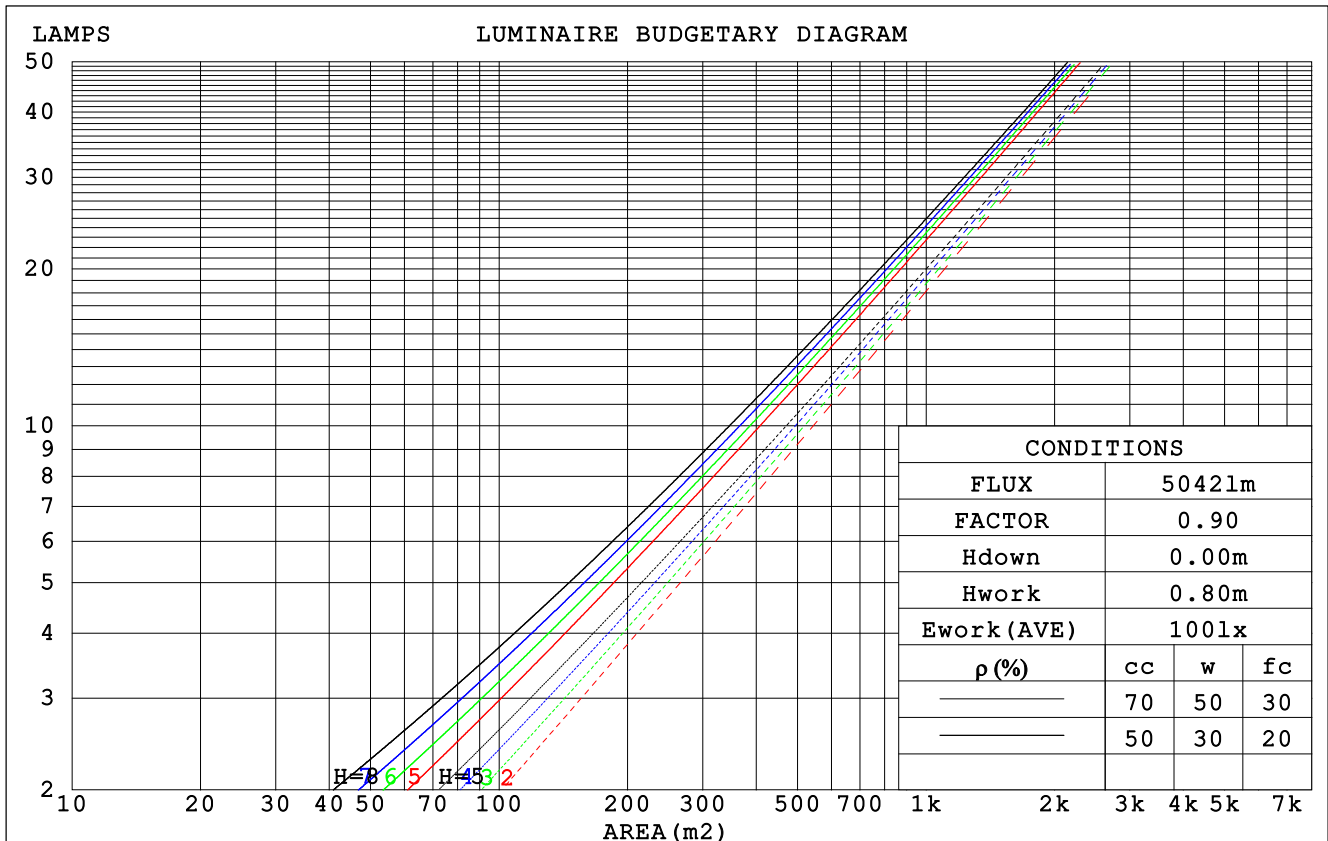
Checker:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Assessor:

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	1.02	1.02	1.02	1.00
1.0	1.09	1.06	1.04	1.07	1.05	1.02	1.03	1.01	.99	.99	.98	.96	.96	.94	.93	.91
2.0	1.00	.96	.92	.99	.94	.91	.95	.92	.89	.92	.89	.87	.89	.87	.85	.83
3.0	.92	.87	.82	.91	.86	.81	.88	.84	.80	.86	.82	.79	.83	.80	.78	.76
4.0	.85	.79	.74	.84	.78	.74	.82	.77	.73	.80	.76	.72	.78	.74	.71	.70
5.0	.79	.73	.68	.78	.72	.68	.76	.71	.67	.75	.70	.66	.73	.69	.66	.64
6.0	.74	.67	.62	.73	.67	.62	.71	.66	.62	.70	.65	.61	.69	.64	.61	.59
7.0	.69	.62	.58	.68	.62	.58	.67	.61	.57	.66	.61	.57	.64	.60	.57	.55
8.0	.65	.58	.54	.64	.58	.53	.63	.57	.53	.62	.57	.53	.61	.56	.53	.51
9.0	.61	.54	.50	.60	.54	.50	.59	.54	.50	.58	.53	.50	.57	.53	.49	.48
10.0	.57	.51	.47	.57	.51	.47	.56	.50	.47	.55	.50	.46	.54	.50	.46	.45



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-06-01

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.500m [K=1.0000]
 Remarks:

Checker:

Assessor:

WEC AND CCEC

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)									
0.0																
1.0	.206	.117	.037	.199	.114	.036	.187	.107	.034	.175	.101	.032	.164	.095	.031	
2.0	.197	.108	.033	.191	.105	.032	.181	.100	.031	.171	.096	.030	.161	.091	.029	
3.0	.187	.099	.030	.182	.097	.029	.172	.093	.028	.164	.090	.028	.156	.086	.027	
4.0	.176	.092	.027	.172	.090	.027	.164	.087	.026	.156	.084	.025	.149	.081	.025	
5.0	.167	.085	.025	.163	.084	.024	.156	.081	.024	.149	.079	.023	.143	.076	.023	
6.0	.158	.079	.023	.154	.078	.022	.148	.076	.022	.142	.074	.022	.137	.072	.021	
7.0	.150	.074	.021	.147	.073	.021	.141	.071	.021	.136	.070	.020	.131	.068	.020	
8.0	.142	.070	.020	.140	.069	.019	.135	.067	.019	.130	.066	.019	.126	.064	.019	
9.0	.135	.066	.018	.133	.065	.018	.129	.064	.018	.124	.062	.018	.120	.061	.018	
10.0	.129	.062	.017	.127	.061	.017	.123	.060	.017	.119	.059	.017	.116	.058	.017	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	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	.173	.157	.143	.148	.135	.123	.101	.093	.085	.058	.054	.049	.019	.017	.016	
2.0	.160	.132	.109	.137	.114	.095	.094	.079	.066	.054	.046	.039	.017	.015	.013	
3.0	.148	.114	.086	.127	.098	.075	.087	.068	.052	.050	.040	.031	.016	.013	.010	
4.0	.139	.099	.069	.119	.086	.060	.082	.060	.042	.047	.035	.025	.015	.011	.008	
5.0	.131	.088	.057	.112	.076	.049	.077	.053	.035	.045	.031	.021	.014	.010	.007	
6.0	.123	.079	.047	.106	.068	.041	.073	.048	.029	.042	.028	.017	.014	.009	.006	
7.0	.117	.072	.040	.101	.062	.035	.069	.044	.025	.040	.026	.015	.013	.008	.005	
8.0	.111	.066	.034	.096	.057	.030	.066	.040	.021	.038	.024	.013	.012	.008	.004	
9.0	.106	.060	.030	.091	.052	.026	.063	.037	.018	.037	.022	.011	.012	.007	.004	
10.0	.101	.056	.026	.087	.049	.023	.060	.034	.016	.035	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-06-01

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

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	24.3	25.4	24.5	25.6	25.7	18.1	19.2	18.4	19.4	19.6
3H	24.3	25.3	24.6	25.5	25.7	19.2	20.2	19.5	20.4	20.6
4H	24.3	25.3	24.6	25.5	25.7	19.7	20.7	20.0	20.9	21.1
6H	24.3	25.2	24.6	25.4	25.7	20.2	21.1	20.5	21.3	21.6
8H	24.2	25.1	24.6	25.4	25.6	20.4	21.3	20.7	21.5	21.8
12H	24.2	25.0	24.5	25.3	25.6	20.6	21.4	20.9	21.7	21.9
4H 2H	24.2	25.1	24.5	25.3	25.6	18.6	19.6	18.9	19.8	20.0
3H	24.3	25.1	24.6	25.4	25.7	19.8	20.6	20.1	20.9	21.2
4H	24.3	25.1	24.7	25.4	25.7	20.4	21.2	20.8	21.5	21.8
6H	24.3	25.0	24.7	25.3	25.7	21.0	21.7	21.4	22.0	22.4
8H	24.3	24.9	24.7	25.3	25.6	21.3	21.9	21.7	22.3	22.6
12H	24.3	24.8	24.7	25.2	25.6	21.5	22.1	21.9	22.5	22.8
8H 4H	24.3	24.9	24.7	25.2	25.6	20.5	21.1	20.9	21.5	21.9
6H	24.3	24.8	24.7	25.2	25.6	21.3	21.8	21.7	22.2	22.6
8H	24.3	24.7	24.7	25.2	25.6	21.6	22.1	22.1	22.5	22.9
12H	24.3	24.6	24.7	25.1	25.6	21.9	22.3	22.4	22.8	23.2
12H 4H	24.2	24.8	24.6	25.2	25.6	20.5	21.1	20.9	21.4	21.8
6H	24.3	24.7	24.7	25.1	25.6	21.3	21.7	21.7	22.1	22.6
8H	24.3	24.7	24.8	25.1	25.6	21.7	22.0	22.1	22.5	23.0
Variations with the observer position at spacings:										
S = 1.0H	+ 3.1 / - 3.1					+ 0.4 / - 0.5				
1.5H	+ 4.4 / - 3.5					+ 0.3 / - 0.5				
2.0H	+ 4.9 / - 2.6					+ 0.5 / - 0.4				

CIE Pub.117 Corrected 5042 lm Total Lamp Luminous Flux.(8log(F/F0) = 5.6)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-06-01

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

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) $k(RI) \times RCR = 5$									
$k = 0.60$	79	71	67	78	71	66	78	71	66	62
0.80	87	80	75	87	80	75	85	79	75	70
1.00	93	86	82	92	86	81	91	86	81	76
1.25	98	92	87	97	91	87	95	90	86	81
1.50	102	96	91	100	95	91	98	93	90	85
2.00	105	100	96	104	99	95	101	97	94	88
2.50	108	103	99	106	101	98	103	99	96	90
3.00	109	105	102	108	104	101	104	101	99	92
4.00	112	108	106	110	107	104	106	104	102	94
5.00	113	111	108	111	109	107	107	105	103	95
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

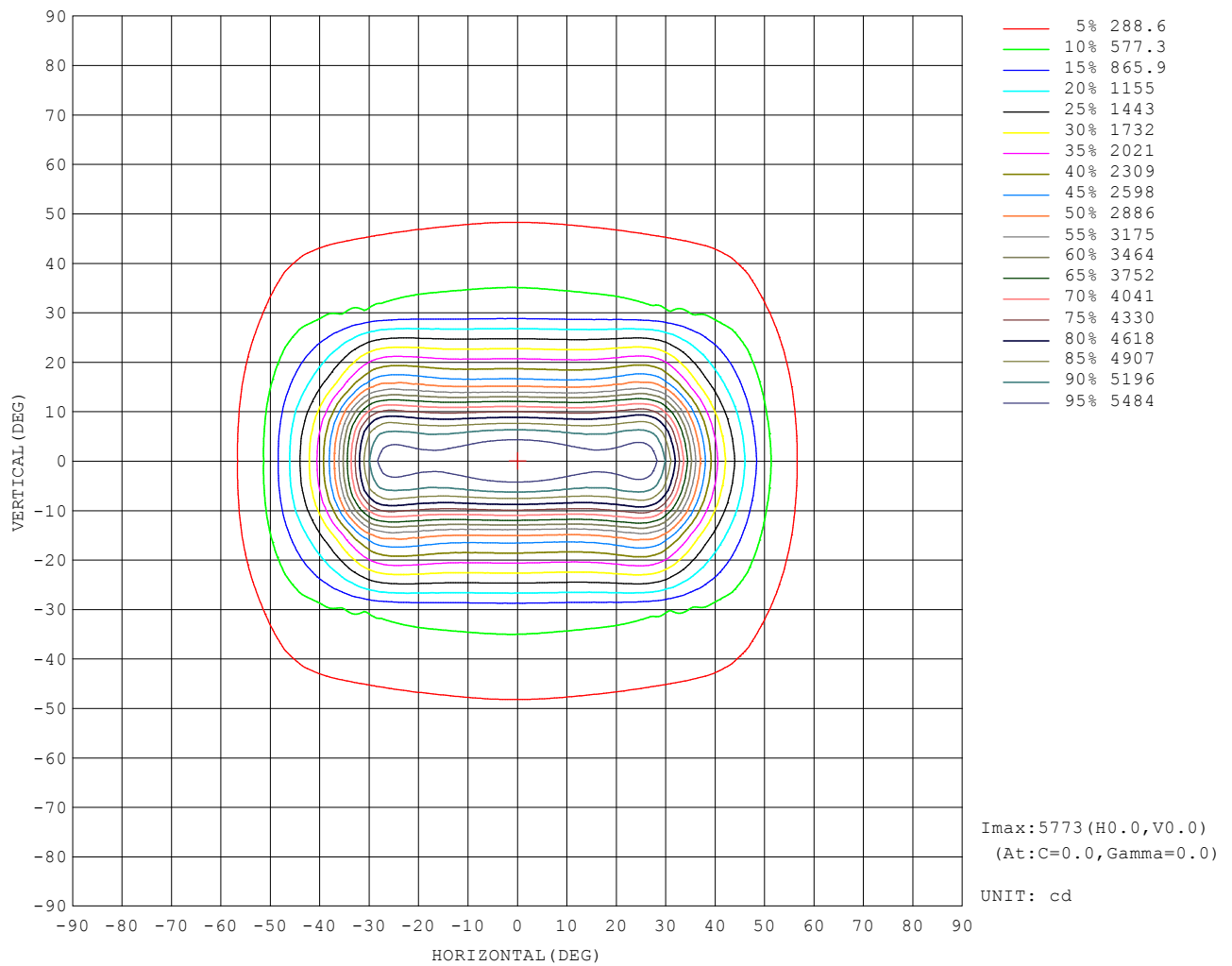
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-06-01

Checker:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.500m [K=1.0000]
 Remarks:

Assessor:

ISOCANDELA DIAGRAM



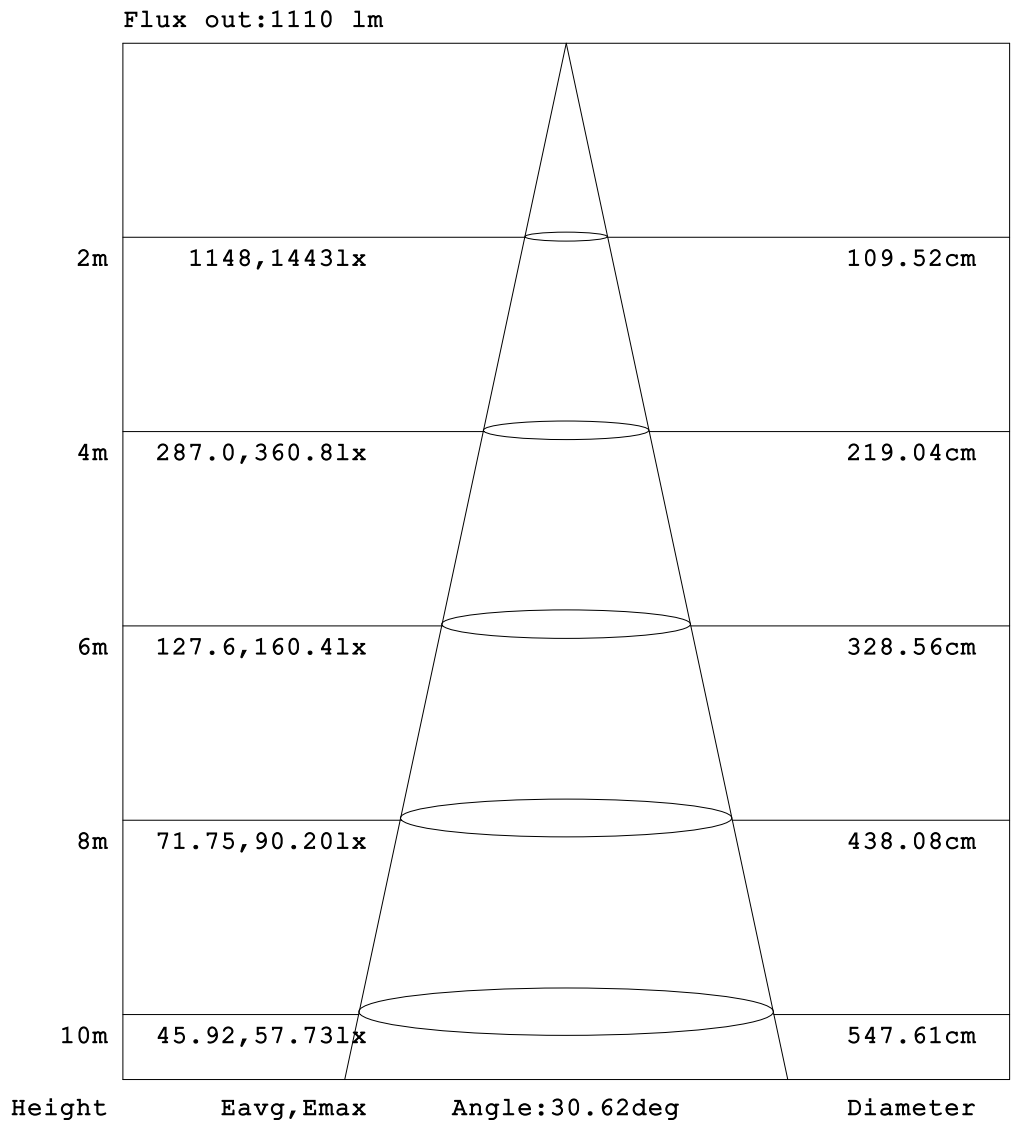
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-06-01

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

AAI Figure



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

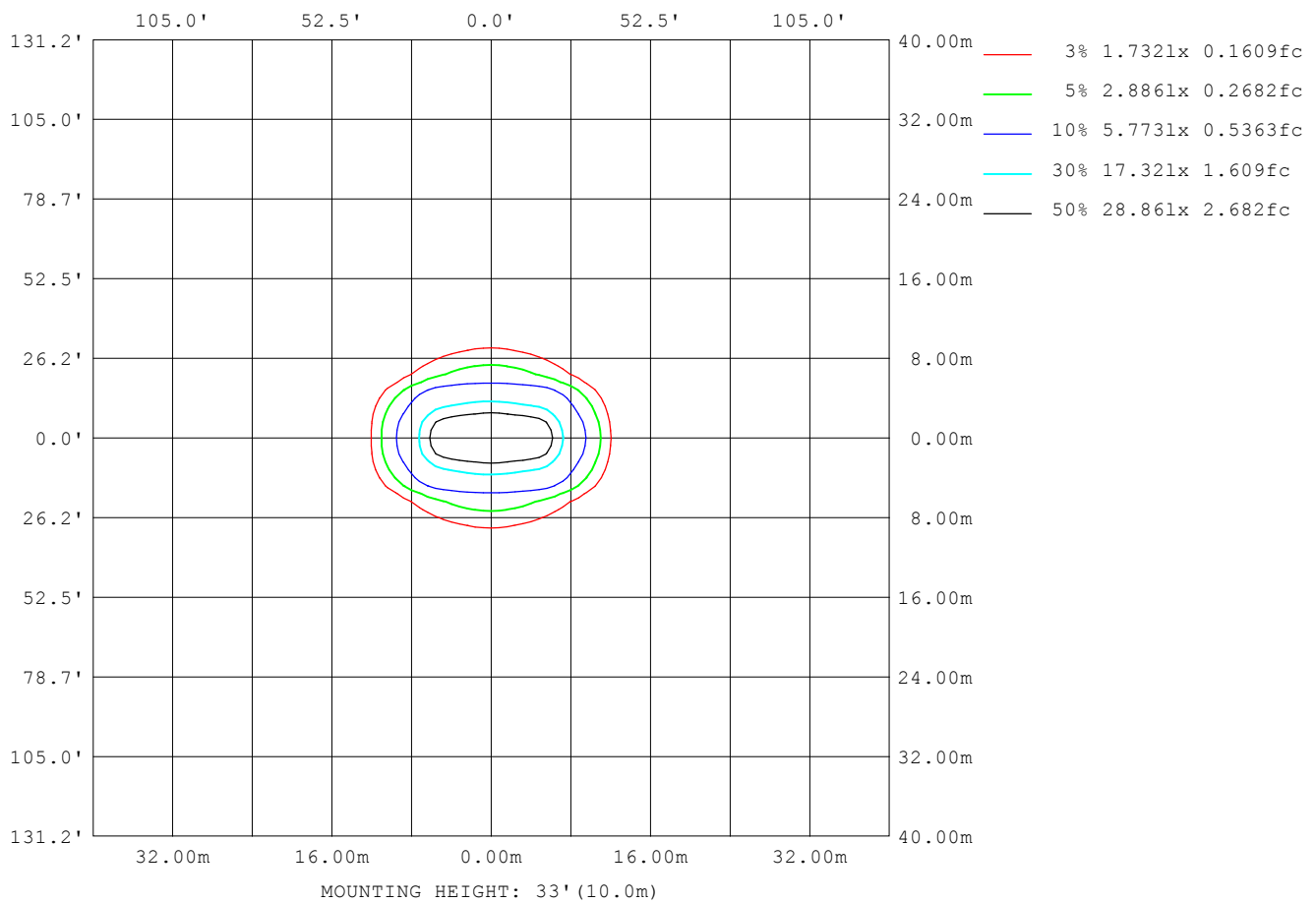
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-06-01

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

ISOLUX DIAGRAM



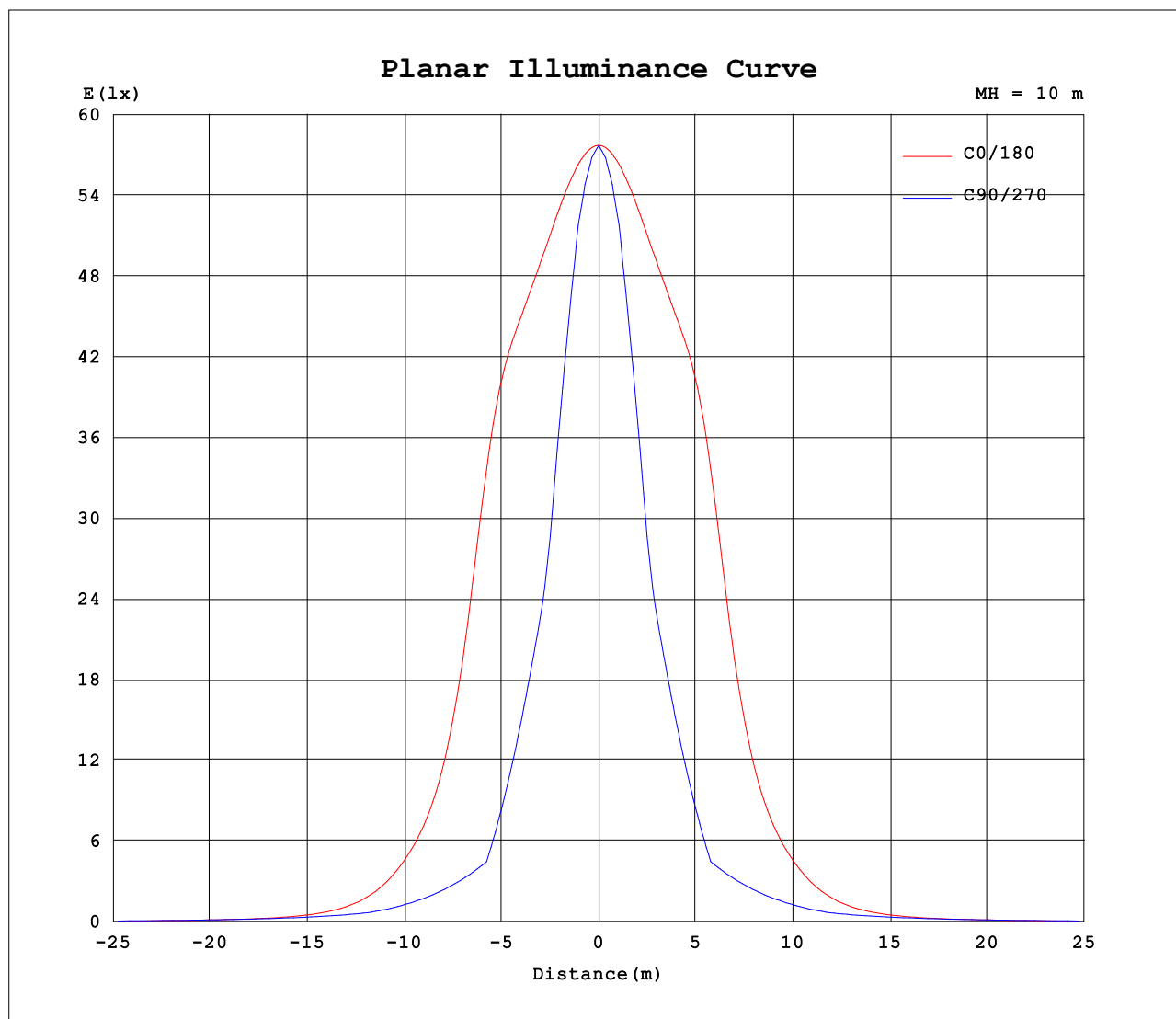
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-06-01

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-06-01

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

Assessor:

Assessor:

Assessor:

Assessor: