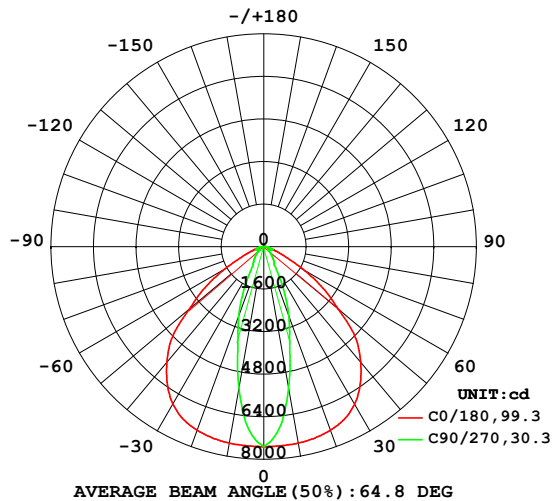


LUMINAIRE PHOTOMETRIC TEST REPORT

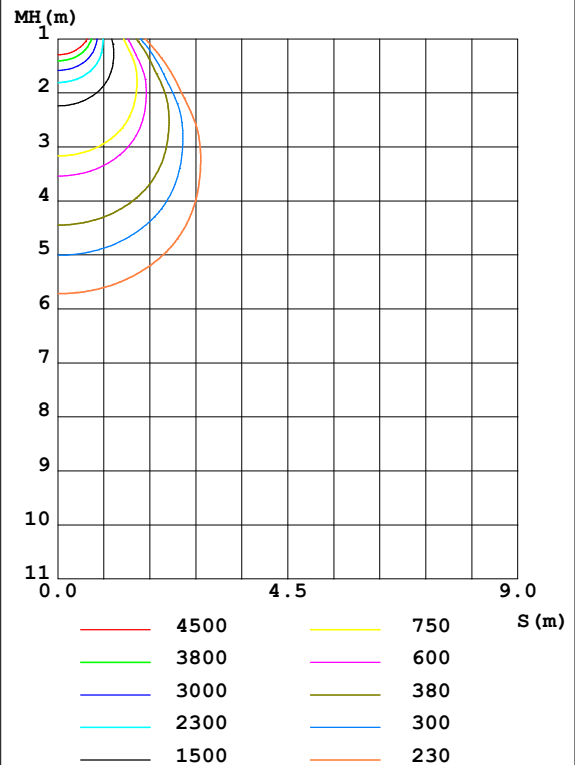
Test:U:230.0V I:0.2595A P:57.76W PF:0.9676 Lamp Flux:7398.3x1 lm		
NAME: LHB03-060	TYPE:60W	WEIGHT:
SPEC.:5000K Ra80 30100DEG L00301	DIM.: 0.336*0.307*0.061	SERIAL No.:
MFR.:	SUR.:0.28*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 128.09 lm/W			
MODEL	LHB03-060	Imax(cd)	7521	S/MH(C0/180)	1.33
NOMINAL POWER(W)	60	LOR(%)	100.0	S/MH(C90/270)	0.49
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	7398.3	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	7398.3	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	0.60

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:2017-07-01

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	7516	7101	6836	7101	7516	7103	6836	7103	0- 5	174.2	174.2	2.35, 2.35
10	7500	6252	5398	6252	7500	6253	5398	6253	5- 10	480.5	654.8	8.85, 8.85
15	7449	5073	3797	5073	7449	5068	3797	5068	10- 15	687.1	1342	18.1, 18.1
20	7346	3834	2753	3834	7346	3824	2753	3824	15- 20	794.2	2136	28.9, 28.9
25	7169	2947	1784	2947	7169	2938	1784	2938	20- 25	834.6	2971	40.2, 40.2
30	6837	2153	815.1	2153	6837	2148	815.1	2148	25- 30	803.3	3774	51, 51
35	6327	1349	666.7	1349	6327	1350	666.7	1350	30- 35	725.4	4499	60.8, 60.8
40	5672	643.8	518.2	643.8	5672	650.4	518.2	650.4	35- 40	652.9	5152	69.6, 69.6
45	4911	514.4	369.8	514.4	4911	518.3	369.8	518.3	40- 45	571.5	5724	77.4, 77.4
50	3670	381.6	221.4	381.6	3670	383.7	221.4	383.7	45- 50	466.3	6190	83.7, 83.7
55	2714	245.3	248.7	245.3	2714	246.8	248.7	246.8	50- 55	346.8	6537	88.4, 88.4
60	1707	125.4	276.0	125.4	1707	125.9	276.0	125.9	55- 60	266.4	6803	92, 92
65	890.7	111.8	303.2	111.8	890.7	112.6	303.2	112.6	60- 65	208.4	7012	94.8, 94.8
70	459.4	96.63	330.5	96.63	459.4	97.62	330.5	97.62	65- 70	157.4	7169	96.9, 96.9
75	199.0	80.16	251.6	80.16	199.0	81.19	251.6	81.19	70- 75	110.2	7279	98.4, 98.4
80	65.21	54.12	172.8	54.12	65.21	54.87	172.8	54.87	75- 80	67.59	7347	99.3, 99.3
85	13.19	29.89	93.91	29.89	13.19	30.47	93.91	30.47	80- 85	36.89	7384	99.8, 99.8
90	2.054	7.225	15.04	7.225	2.054	7.732	15.04	7.732	85- 90	14.56	7398	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): 5723.8 lm

%lum = 77.4%

%lamp = 77.4%

Conical surface Flux(120deg): 6803.3 lm

%lum = 92.0%

%lamp = 92.0%

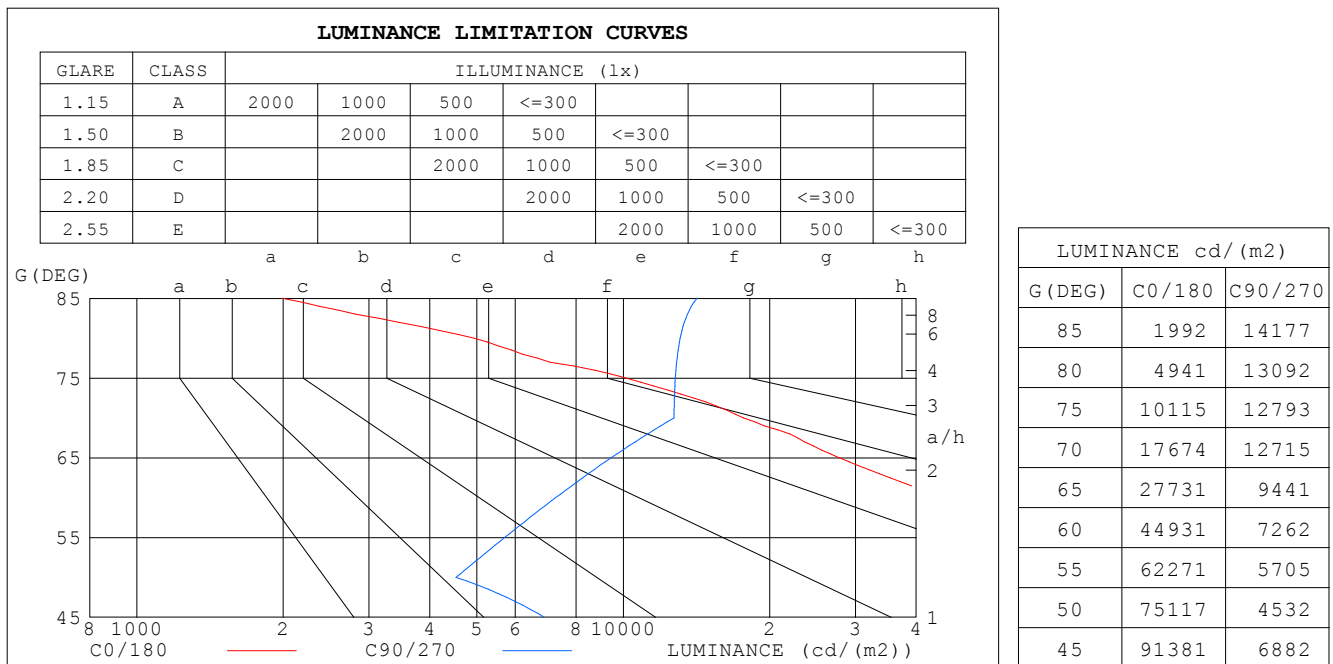
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-07-01

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: 2017-07-01

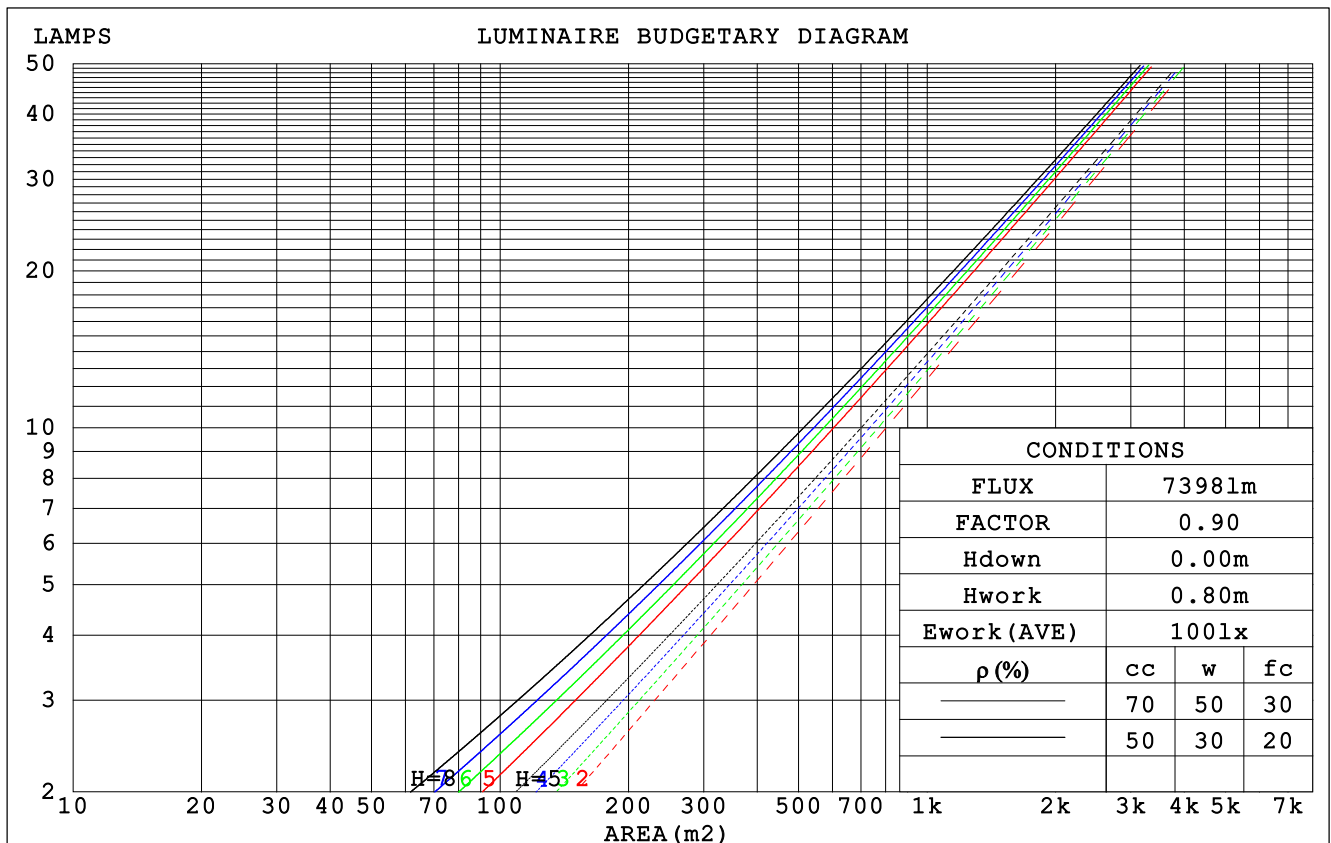
Checker:

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

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			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	1.08	1.05	1.02	1.06	1.03	1.00	1.02	.99	.97	.98	.96	.94	.94	.93	.92	.90
2.0	.98	.93	.88	.96	.91	.87	.93	.89	.85	.90	.86	.84	.87	.84	.82	.80
3.0	.89	.83	.78	.88	.82	.77	.85	.80	.76	.82	.78	.75	.80	.77	.74	.72
4.0	.82	.75	.70	.80	.74	.69	.78	.73	.68	.76	.71	.67	.74	.70	.67	.65
5.0	.75	.68	.63	.74	.67	.62	.72	.66	.62	.70	.65	.61	.69	.64	.61	.59
6.0	.69	.62	.57	.69	.62	.57	.67	.61	.56	.65	.60	.56	.64	.59	.56	.54
7.0	.65	.57	.52	.64	.57	.52	.62	.56	.52	.61	.56	.52	.60	.55	.51	.50
8.0	.60	.53	.48	.60	.53	.48	.58	.52	.48	.57	.52	.48	.56	.51	.47	.46
9.0	.56	.49	.45	.56	.49	.45	.55	.49	.44	.54	.48	.44	.53	.48	.44	.43
10.0	.53	.46	.42	.52	.46	.42	.51	.46	.41	.51	.45	.41	.50	.45	.41	.40



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-07-01

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	.230	.131	.041	.223	.127	.040	.210	.120	.038	.198	.114	.037	.187	.109	.035	
2.0	.219	.120	.037	.213	.118	.036	.202	.113	.035	.192	.108	.034	.183	.103	.033	
3.0	.207	.110	.033	.202	.108	.032	.192	.104	.032	.183	.100	.031	.175	.097	.030	
4.0	.194	.101	.030	.190	.099	.029	.181	.096	.029	.173	.093	.028	.166	.090	.028	
5.0	.182	.093	.027	.179	.092	.027	.171	.089	.026	.164	.087	.026	.158	.084	.025	
6.0	.172	.086	.025	.168	.085	.024	.162	.083	.024	.156	.081	.024	.150	.079	.023	
7.0	.162	.080	.023	.159	.079	.023	.153	.077	.022	.148	.076	.022	.143	.074	.022	
8.0	.153	.075	.021	.150	.074	.021	.145	.073	.021	.140	.071	.021	.136	.070	.020	
9.0	.145	.070	.020	.143	.070	.020	.138	.068	.019	.134	.067	.019	.129	.066	.019	
10.0	.138	.066	.018	.136	.065	.018	.131	.064	.018	.127	.063	.018	.124	.062	.018	

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	.175	.157	.141	.150	.135	.121	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.163	.132	.107	.139	.114	.092	.095	.079	.064	.055	.046	.038	.018	.015	.012	
3.0	.152	.114	.083	.131	.098	.072	.090	.068	.051	.052	.040	.030	.017	.013	.010	
4.0	.143	.100	.067	.123	.086	.058	.085	.060	.041	.049	.035	.024	.016	.011	.008	
5.0	.135	.089	.054	.116	.077	.047	.080	.054	.033	.046	.031	.020	.015	.010	.007	
6.0	.128	.080	.045	.110	.069	.039	.076	.048	.028	.044	.028	.017	.014	.009	.005	
7.0	.122	.073	.038	.105	.063	.033	.072	.044	.024	.042	.026	.014	.014	.009	.005	
8.0	.116	.067	.033	.099	.058	.029	.069	.041	.020	.040	.024	.012	.013	.008	.004	
9.0	.110	.061	.029	.095	.053	.025	.066	.037	.018	.038	.022	.011	.012	.007	.004	
10.0	.105	.057	.025	.091	.050	.022	.063	.035	.016	.037	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-01

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	26.5	27.6	26.7	27.8	28.0	14.3	15.4	14.5	15.6	15.8
3H	27.1	28.2	27.3	28.4	28.6	17.9	19.0	18.2	19.2	19.4
4H	27.1	28.2	27.4	28.4	28.6	19.5	20.5	19.7	20.7	21.0
6H	27.1	28.1	27.4	28.3	28.6	20.6	21.6	20.9	21.8	22.1
8H	27.0	28.0	27.4	28.2	28.5	21.0	22.0	21.4	22.2	22.5
12H	27.0	27.9	27.3	28.2	28.5	21.4	22.3	21.7	22.6	22.9
4H 2H	26.2	27.2	26.5	27.4	27.7	14.7	15.7	15.0	15.9	16.2
3H	26.8	27.7	27.1	28.0	28.3	18.4	19.3	18.7	19.6	19.9
4H	26.9	27.7	27.3	28.0	28.3	20.2	21.0	20.5	21.3	21.6
6H	26.9	27.6	27.3	27.9	28.3	21.5	22.3	21.9	22.6	23.0
8H	26.8	27.5	27.2	27.9	28.2	22.1	22.8	22.5	23.1	23.5
12H	26.8	27.4	27.2	27.8	28.2	22.5	23.2	23.0	23.5	23.9
8H 4H	26.8	27.4	27.2	27.8	28.2	20.2	20.9	20.6	21.2	21.6
6H	26.8	27.3	27.2	27.7	28.1	21.7	22.3	22.2	22.7	23.1
8H	26.7	27.2	27.2	27.7	28.1	22.4	22.9	22.9	23.3	23.8
12H	26.7	27.1	27.2	27.6	28.0	23.1	23.5	23.5	23.9	24.4
12H 4H	26.7	27.4	27.2	27.7	28.1	20.2	20.8	20.6	21.2	21.5
6H	26.7	27.2	27.2	27.6	28.1	21.7	22.2	22.2	22.6	23.1
8H	26.7	27.1	27.2	27.6	28.0	22.4	22.9	22.9	23.3	23.8
Variations with the observer position at spacings:										
S = 1.0H	+ 1.7 / - 1.8					+ 0.2 / - 0.3				
1.5H	+ 3.3 / - 4.1					+ 0.1 / - 0.2				
2.0H	+ 4.9 / - 6.8					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 7398 lm Total Lamp Luminous Flux.(8log(F/F0) = 7.0)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-01

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) $k(RI) \times RCR = 5$									
$k = 0.60$	73	64	58	72	63	58	71	63	58	53
0.80	82	73	68	81	73	67	79	72	67	62
1.00	88	80	75	87	80	75	86	80	74	69
1.25	94	86	81	93	86	81	91	85	80	75
1.50	98	91	86	97	90	85	94	88	84	79
2.00	103	97	92	101	95	91	98	93	90	83
2.50	105	100	95	103	98	95	100	96	93	86
3.00	108	103	99	106	101	98	102	98	96	88
4.00	110	106	103	108	105	102	104	101	99	91
5.00	112	109	106	110	107	104	106	103	101	93
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

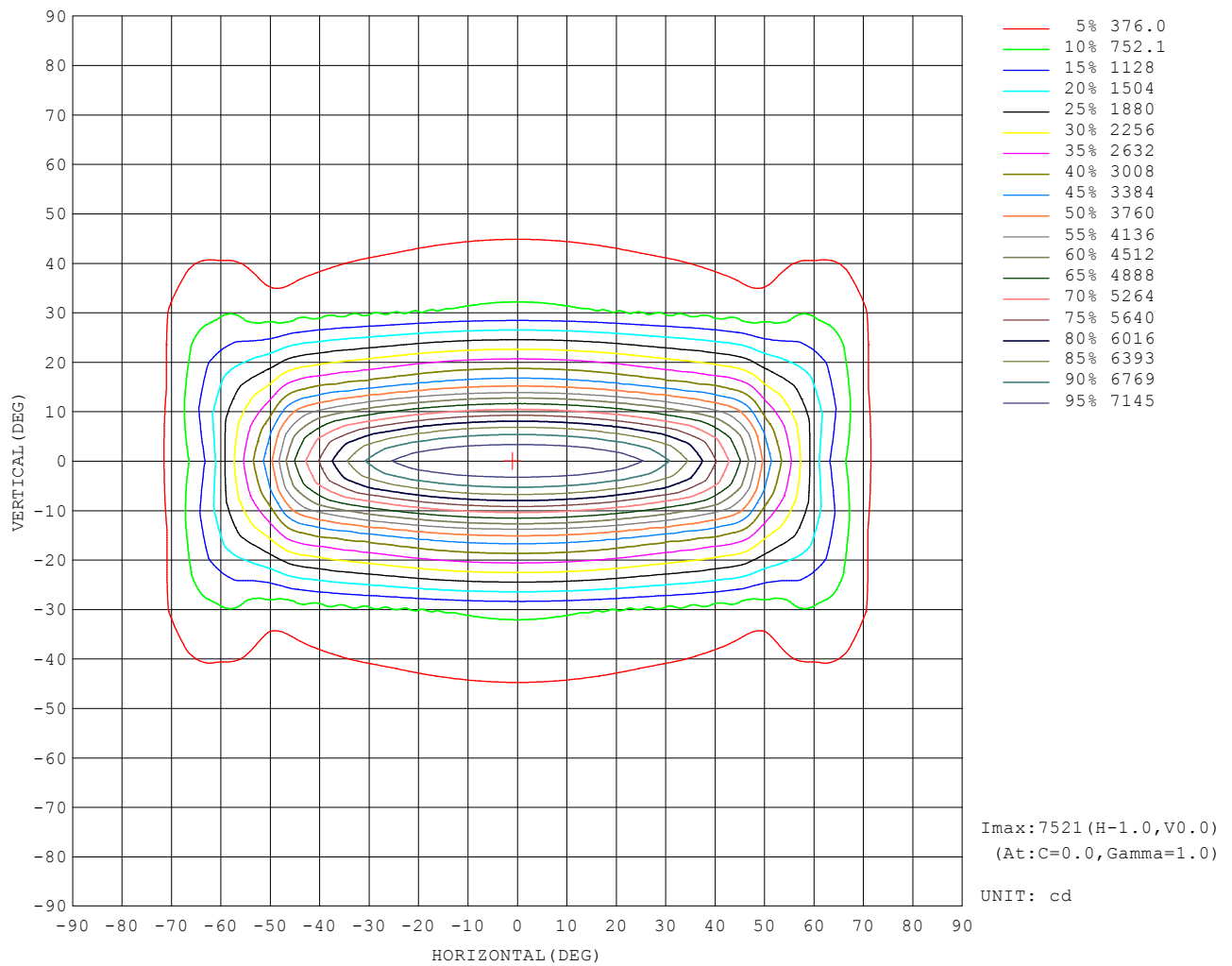
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-07-01

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



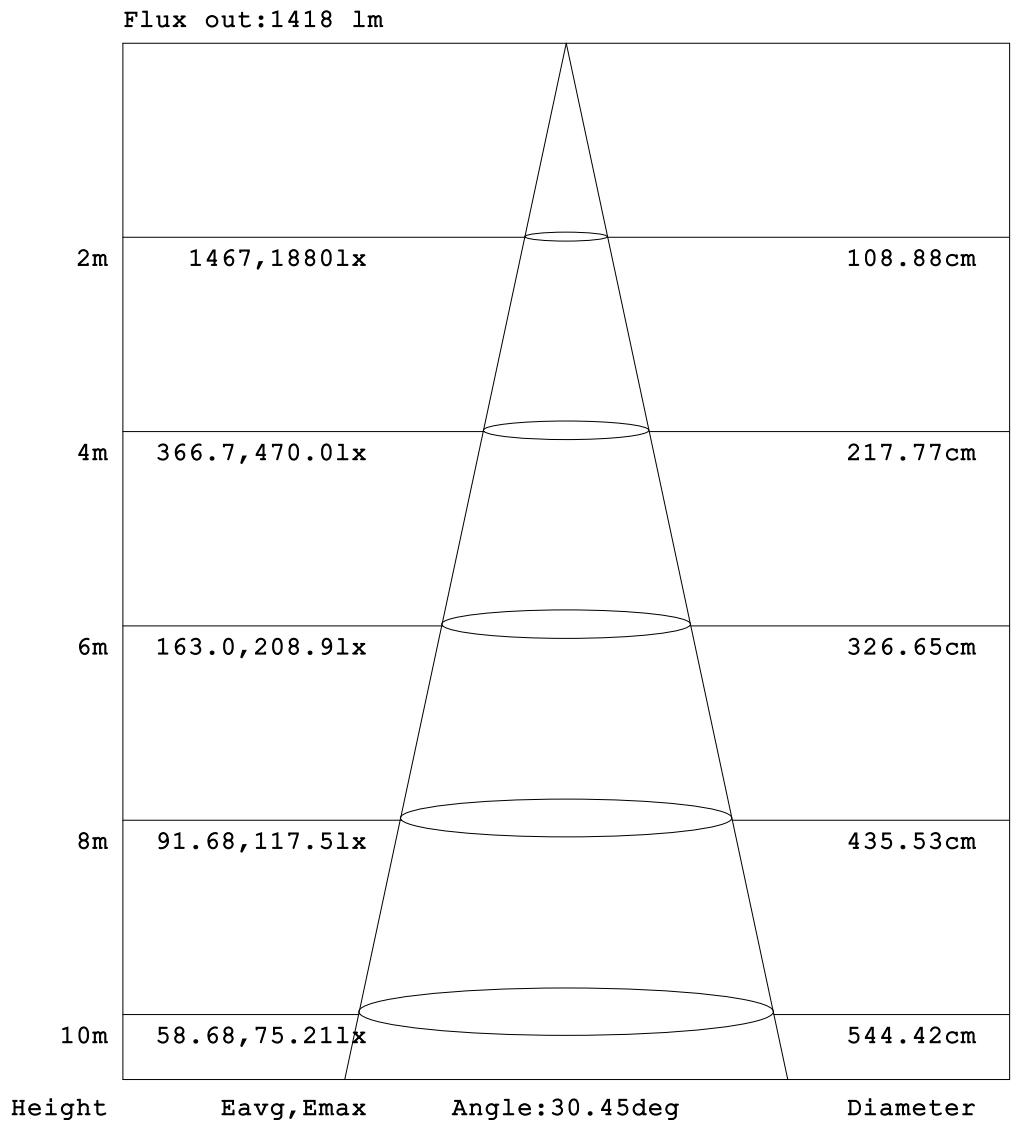
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-01

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.

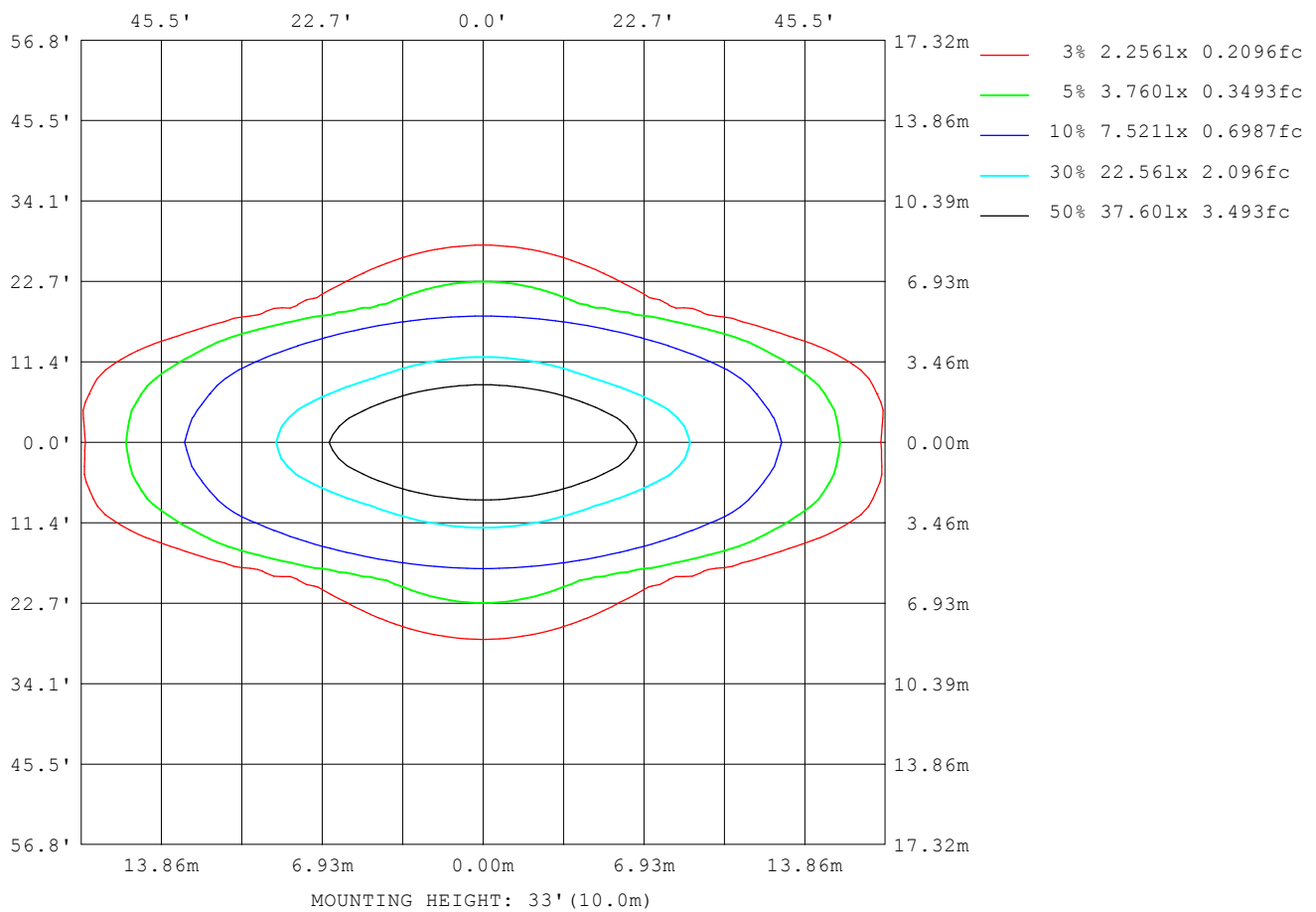
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-01

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



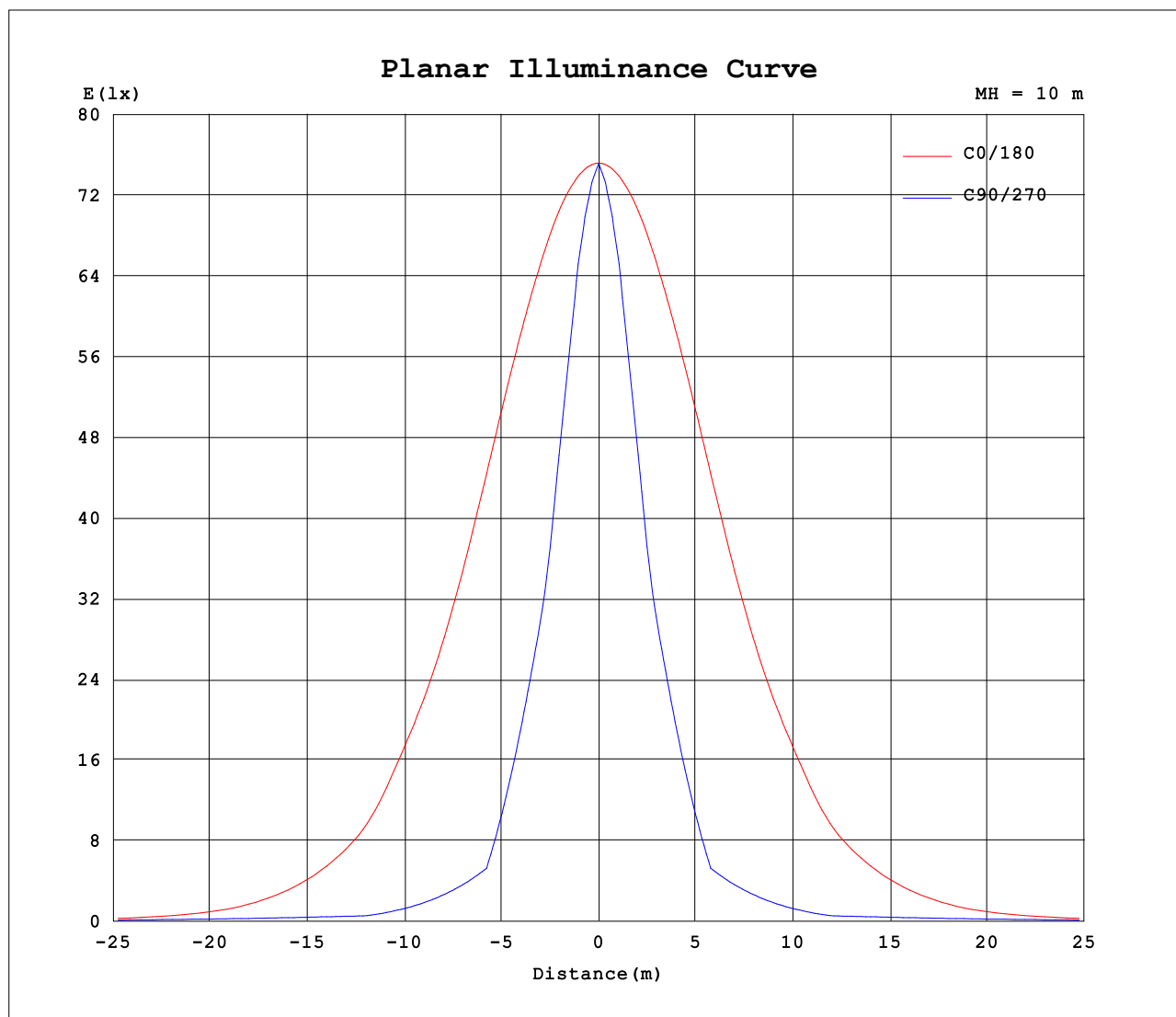
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-01

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: 2017-07-01

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:

UNIT: cd

Assessor: