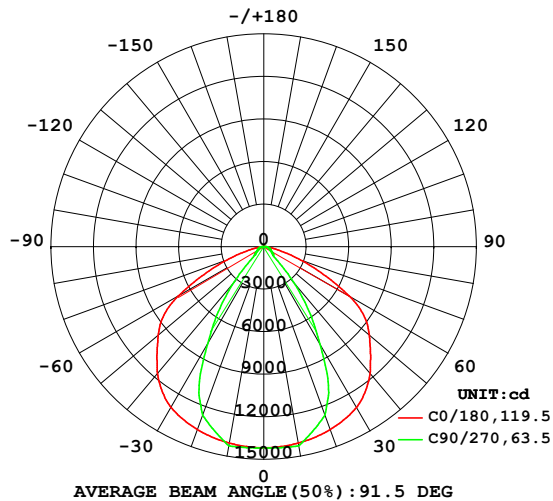


LUMINAIRE PHOTOMETRIC TEST REPORT

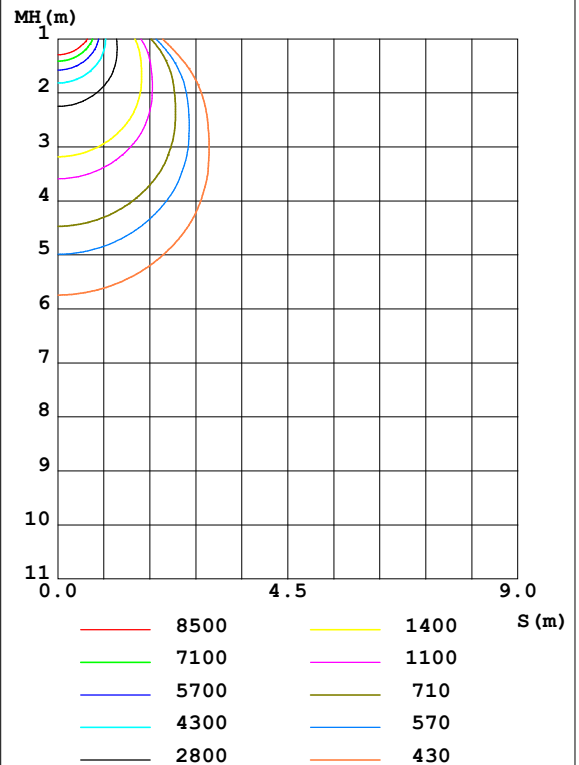
Test:U:230.0V I:0.8077A P:179.5W PF:0.9661 Lamp Flux:24376x1 lm		
NAME: LHB03-180	TYPE:180W	WEIGHT:
SPEC.:5000K Ra70 60*120DEG L00302	DIM.: 0.62*0.3*0.06	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 135.80 lm/W			
MODEL	LHB03-180	I _{max} (cd)	14261	S/MH(C0/180)	1.36
NOMINAL POWER(W)	180	LOR(%)	100.0	S/MH(C90/270)	0.95
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	24376	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	24376	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.0
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.05

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:2017-03-03

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	1415	1419	1422	1419	1415	1419	1422	1419	0- 5	339.2	339.2	1.39,1.39
10	1406	1417	1426	1417	1406	1417	1426	1417	5- 10	1014	1354	5.55,5.55
15	1392	1399	1345	1399	1392	1399	1345	1399	10- 15	1661	3015	12.4,12.4
20	1372	1325	1263	1325	1372	1323	1263	1323	15- 20	2230	5245	21.5,21.5
25	1345	1240	1080	1240	1345	1238	1080	1238	20- 25	2686	7932	32.5,32.5
30	1309	1098	790.1	1098	1309	1095	790.1	1095	25- 30	2926	10858	44.5,44.5
35	1248	864.7	559.1	864.7	1248	861.3	559.1	861.3	30- 35	2886	13744	56.4,56.4
40	1168	577.9	328.1	577.9	1168	576.2	328.1	576.2	35- 40	2626	16370	67.2,67.2
45	1065	420.1	118.7	420.1	1065	419.3	118.7	419.3	40- 45	2179	18549	76.1,76.1
50	972.1	284.3	82.24	284.3	972.1	283.7	82.24	283.7	45- 50	1690	20239	83,83
55	869.5	175.6	67.40	175.6	869.5	174.6	67.40	174.6	50- 55	1332	21571	88.5,88.5
60	697.9	127.4	52.55	127.4	697.9	127.0	52.55	127.0	55- 60	1009	22580	92.6,92.6
65	464.4	91.43	46.86	91.43	464.4	91.18	46.86	91.18	60- 65	703.6	23284	95.5,95.5
70	277.7	65.99	41.16	65.99	277.7	65.76	41.16	65.76	65- 70	476.5	23760	97.5,97.5
75	132.6	42.89	34.89	42.89	132.6	42.90	34.89	42.90	70- 75	313.5	24074	98.8,98.8
80	45.20	20.01	24.02	20.01	45.20	20.21	24.02	20.21	75- 80	183.2	24257	99.5,99.5
85	8.795	10.88	12.58	10.88	8.795	11.06	12.58	11.06	80- 85	88.38	24345	99.9,99.9
90	0.7722	1.511	1.140	1.511	0.7722	1.679	1.140	1.679	85- 90	30.54	24376	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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 18549 lm

%lum = 76.1%

%lamp = 76.1%

Conical surface Flux(120deg): 22580 lm

%lum = 92.6%

%lamp = 92.6%

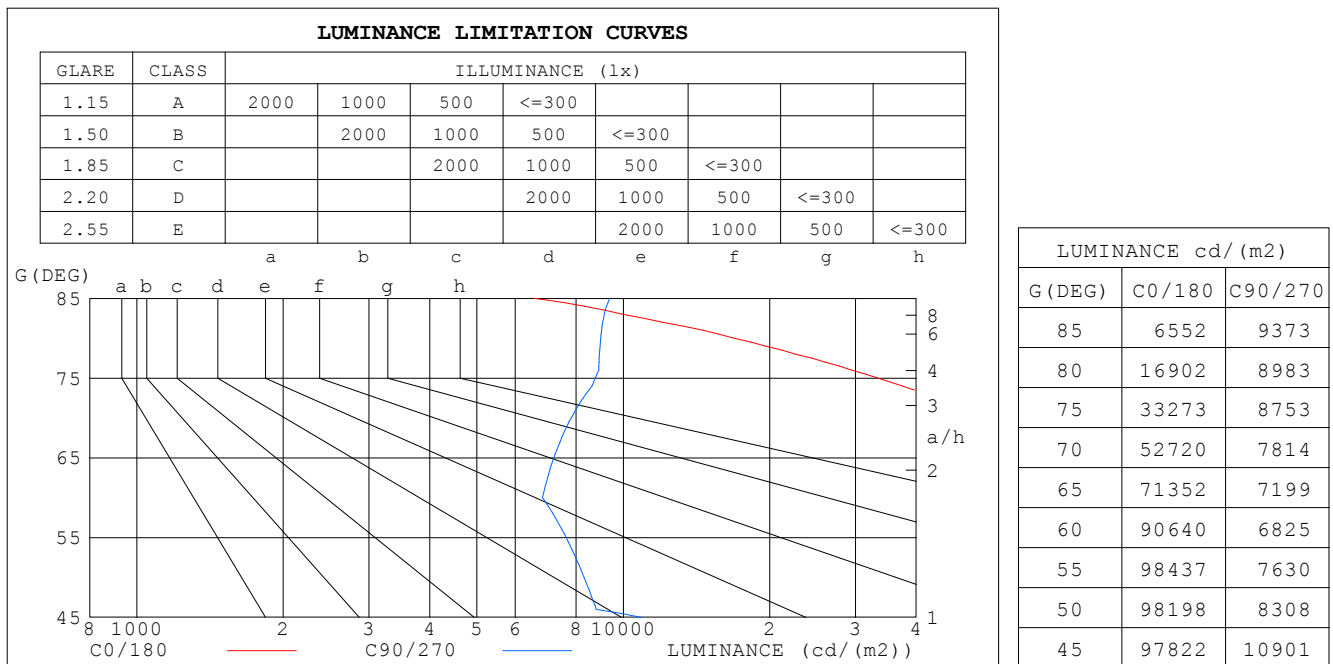
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-03-03

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: 2017-03-03

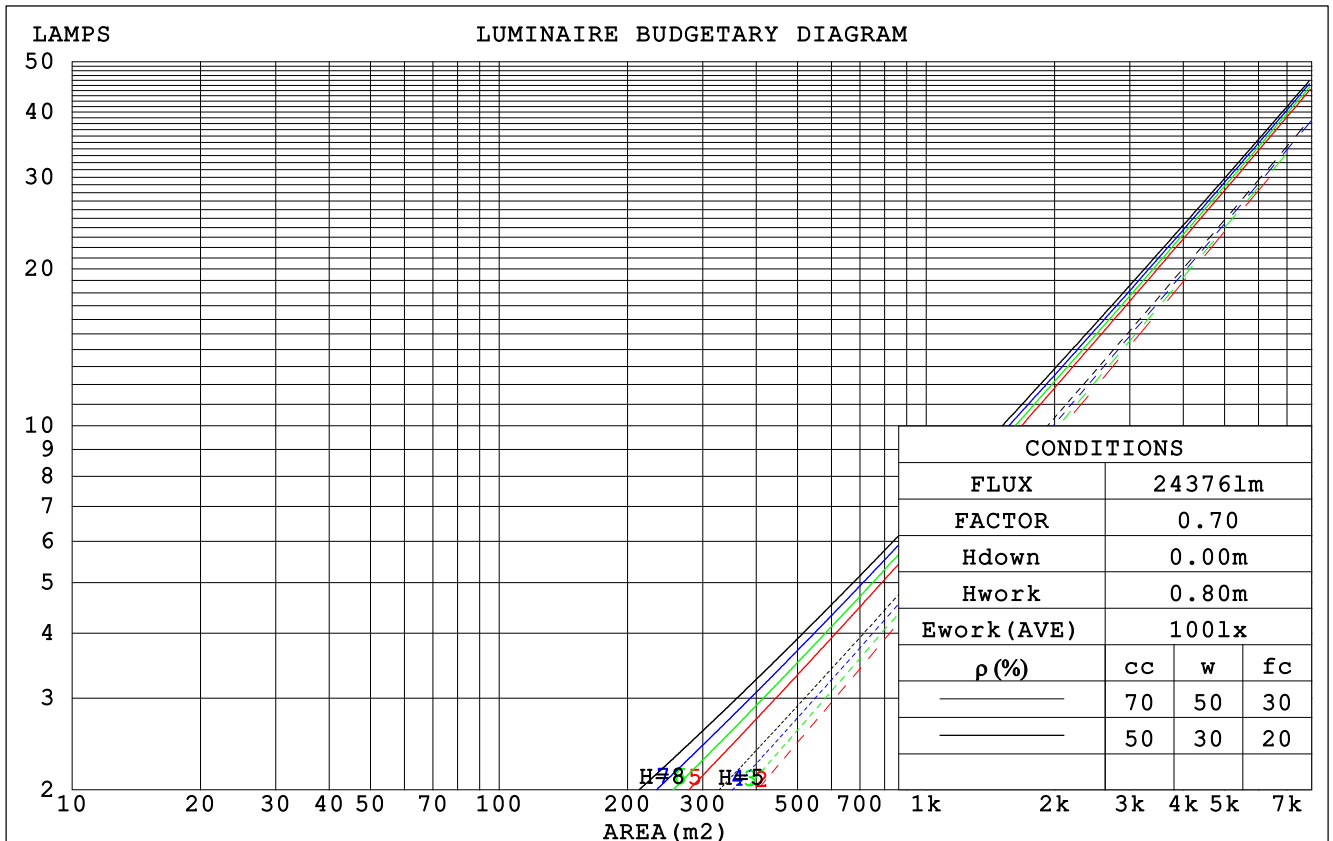
γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.500m [K=1.0000]
Remarks:

Checker:

Assessor:

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	1.00
1.0	1.08	1.05	1.02	1.06	1.03	.00	1.01	.99	.97	.98	.96	.94	.94	.93	.91	.89
2.0	.97	.92	.87	.95	.91	.86	.92	.88	.84	.89	.86	.83	.86	.83	.81	.79
3.0	.88	.81	.76	.87	.80	.76	.84	.79	.74	.81	.77	.73	.79	.75	.72	.70
4.0	.80	.73	.67	.79	.72	.67	.76	.71	.66	.74	.69	.65	.72	.68	.64	.63
5.0	.73	.65	.60	.72	.65	.60	.70	.64	.59	.68	.63	.58	.66	.62	.58	.56
6.0	.67	.59	.54	.66	.59	.54	.64	.58	.53	.63	.57	.53	.61	.56	.52	.51
7.0	.62	.54	.49	.61	.54	.49	.59	.53	.48	.58	.52	.48	.57	.52	.48	.46
8.0	.57	.50	.44	.56	.49	.44	.55	.49	.44	.54	.48	.44	.53	.48	.44	.42
9.0	.53	.46	.41	.52	.45	.41	.51	.45	.40	.50	.44	.40	.49	.44	.40	.38
10.0	.49	.42	.37	.49	.42	.37	.48	.42	.37	.47	.41	.37	.46	.41	.37	.35



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-03-03

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	.234	.133	.042	.228	.130	.041	.215	.123	.039	.203	.117	.038	.192	.111	.036	
2.0	.226	.124	.038	.220	.121	.037	.209	.116	.036	.199	.112	.035	.190	.107	.034	
3.0	.215	.114	.034	.209	.112	.034	.200	.108	.033	.191	.105	.032	.182	.101	.031	
4.0	.202	.105	.031	.198	.104	.031	.189	.100	.030	.182	.097	.029	.174	.095	.029	
5.0	.191	.097	.028	.187	.096	.028	.179	.093	.027	.172	.091	.027	.166	.089	.027	
6.0	.180	.090	.026	.176	.089	.026	.170	.087	.025	.164	.085	.025	.158	.083	.025	
7.0	.170	.084	.024	.167	.083	.024	.161	.081	.023	.155	.080	.023	.150	.078	.023	
8.0	.161	.079	.022	.158	.078	.022	.153	.076	.022	.148	.075	.022	.143	.073	.021	
9.0	.152	.074	.021	.150	.073	.021	.145	.072	.020	.141	.071	.020	.136	.069	.020	
10.0	.145	.069	.019	.143	.069	.019	.138	.068	.019	.134	.067	.019	.130	.066	.019	

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	.140	.150	.135	.121	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.164	.132	.106	.140	.114	.092	.096	.079	.064	.055	.046	.037	.018	.015	.012	
3.0	.154	.114	.082	.132	.098	.071	.091	.068	.050	.052	.040	.029	.017	.013	.010	
4.0	.145	.100	.065	.125	.086	.057	.086	.060	.040	.050	.035	.024	.016	.011	.008	
5.0	.138	.089	.053	.118	.077	.046	.081	.054	.033	.047	.032	.019	.015	.010	.006	
6.0	.131	.080	.044	.112	.070	.038	.078	.049	.027	.045	.029	.016	.015	.009	.005	
7.0	.125	.073	.037	.107	.063	.032	.074	.044	.023	.043	.026	.014	.014	.009	.005	
8.0	.119	.067	.032	.102	.058	.028	.071	.041	.020	.041	.024	.012	.013	.008	.004	
9.0	.113	.062	.028	.098	.054	.024	.068	.038	.017	.039	.022	.010	.013	.007	.003	
10.0	.108	.058	.024	.093	.050	.021	.065	.035	.015	.038	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-03

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	27.6	28.9	27.9	29.1	29.2	18.8	20.1	19.0	20.2	20.4
3H	28.4	29.6	28.7	29.8	30.0	19.1	20.3	19.4	20.5	20.7
4H	28.6	29.7	28.9	29.9	30.1	19.4	20.5	19.7	20.7	21.0
6H	28.6	29.6	28.9	29.9	30.2	19.7	20.7	20.0	21.0	21.2
8H	28.6	29.6	28.9	29.8	30.1	19.8	20.8	20.2	21.1	21.4
12H	28.6	29.5	28.9	29.8	30.1	20.0	20.9	20.3	21.2	21.5
4H 2H	27.4	28.5	27.7	28.7	29.0	19.4	20.4	19.7	20.7	20.9
3H	28.2	29.2	28.6	29.4	29.7	19.8	20.7	20.1	21.0	21.3
4H	28.4	29.3	28.8	29.6	29.9	20.1	20.9	20.5	21.3	21.6
6H	28.5	29.2	28.9	29.6	29.9	20.5	21.2	20.9	21.6	21.9
8H	28.5	29.2	28.9	29.5	29.9	20.7	21.4	21.1	21.7	22.1
12H	28.4	29.1	28.8	29.4	29.8	20.9	21.5	21.3	21.9	22.3
8H 4H	28.3	29.0	28.7	29.4	29.7	20.3	21.0	20.7	21.4	21.8
6H	28.4	29.0	28.8	29.4	29.8	20.8	21.4	21.2	21.8	22.2
8H	28.4	28.9	28.8	29.3	29.8	21.1	21.6	21.5	22.0	22.4
12H	28.4	28.8	28.8	29.2	29.7	21.3	21.7	21.8	22.2	22.6
12H 4H	28.3	28.9	28.7	29.3	29.7	20.3	21.0	20.8	21.3	21.7
6H	28.4	28.9	28.8	29.3	29.7	20.8	21.3	21.3	21.8	22.2
8H	28.4	28.8	28.8	29.2	29.7	21.1	21.5	21.6	22.0	22.5
Variations with the observer position at spacings:										
S = 1.0H	+ 1.2 / - 2.2					+ 1.1 / - 1.5				
1.5H	+ 2.4 / - 4.2					+ 1.4 / - 1.5				
2.0H	+ 3.7 / - 6.5					+ 1.5 / - 1.1				

CIE Pub.117 Corrected 24376 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.1)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-03

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) $k(RI) \times RCR = 5$									
$k = 0.60$	71	62	56	70	61	56	69	61	56	51
0.80	80	71	66	79	71	66	78	70	65	60
1.00	88	79	74	86	79	73	85	79	73	67
1.25	93	86	80	92	85	80	90	84	79	74
1.50	97	90	85	96	89	85	93	88	84	78
2.00	102	96	92	101	95	91	98	93	89	83
2.50	105	99	95	103	98	94	100	96	92	85
3.00	107	103	99	106	101	97	102	98	95	88
4.00	110	106	103	108	105	101	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		

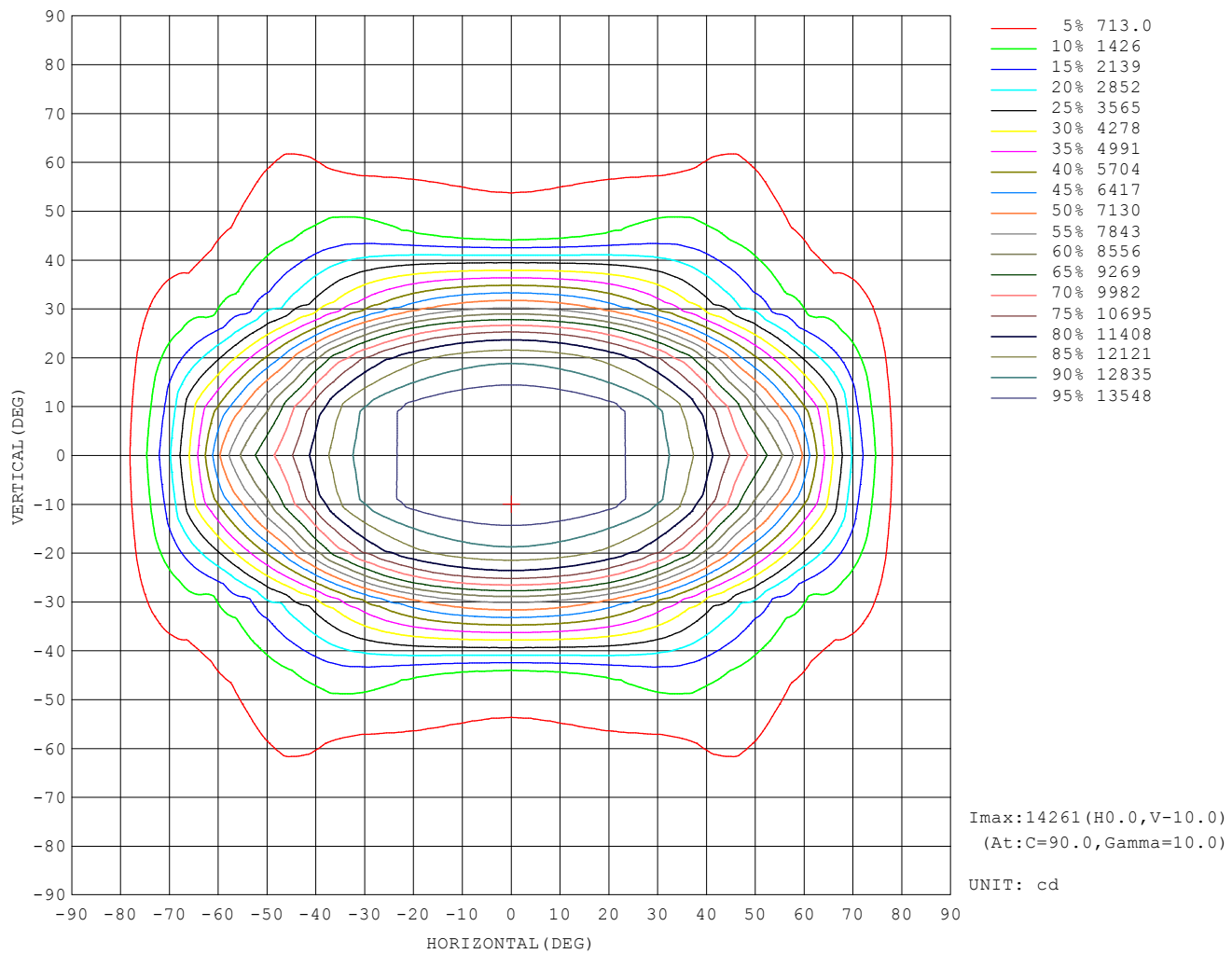
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-03-03

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



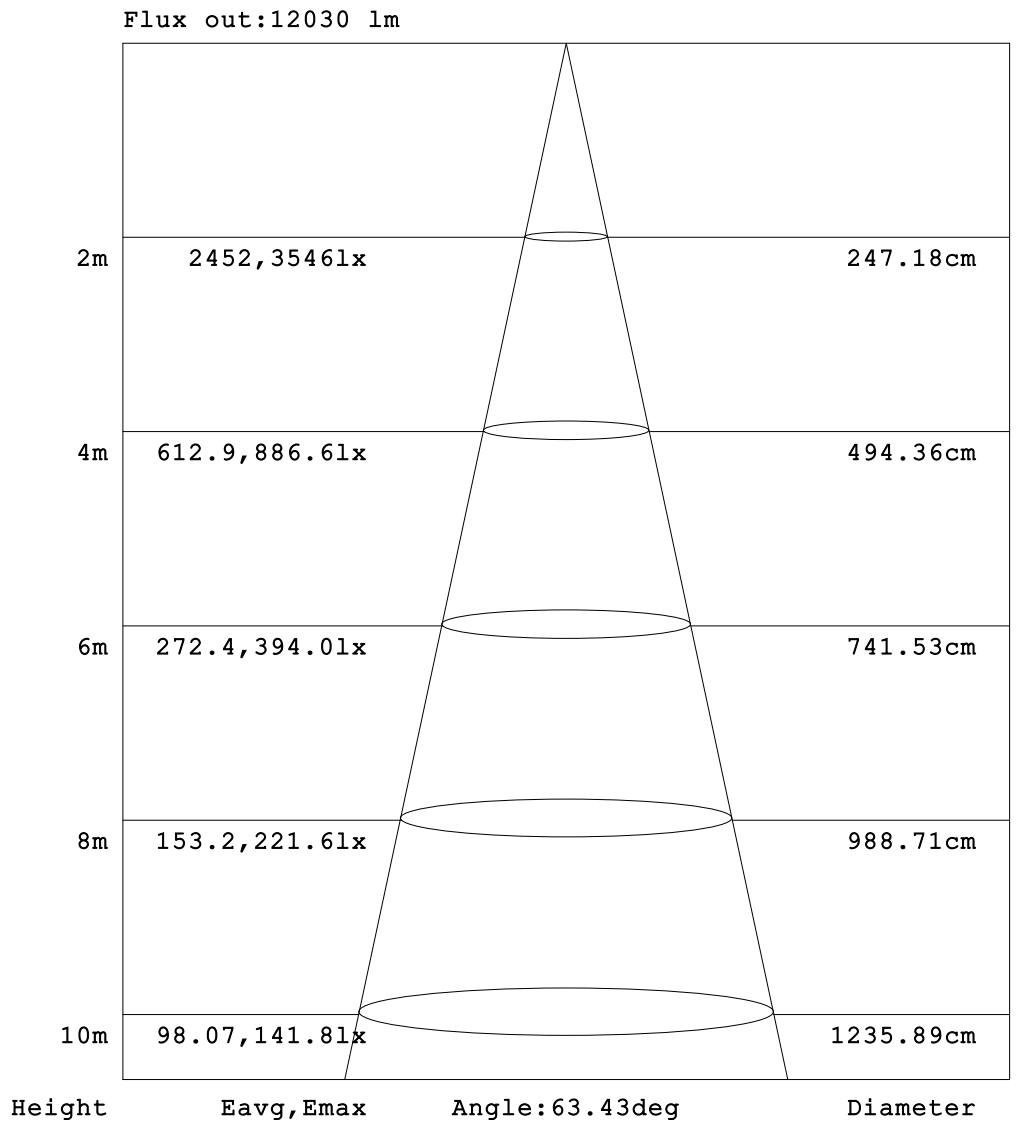
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-03

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.

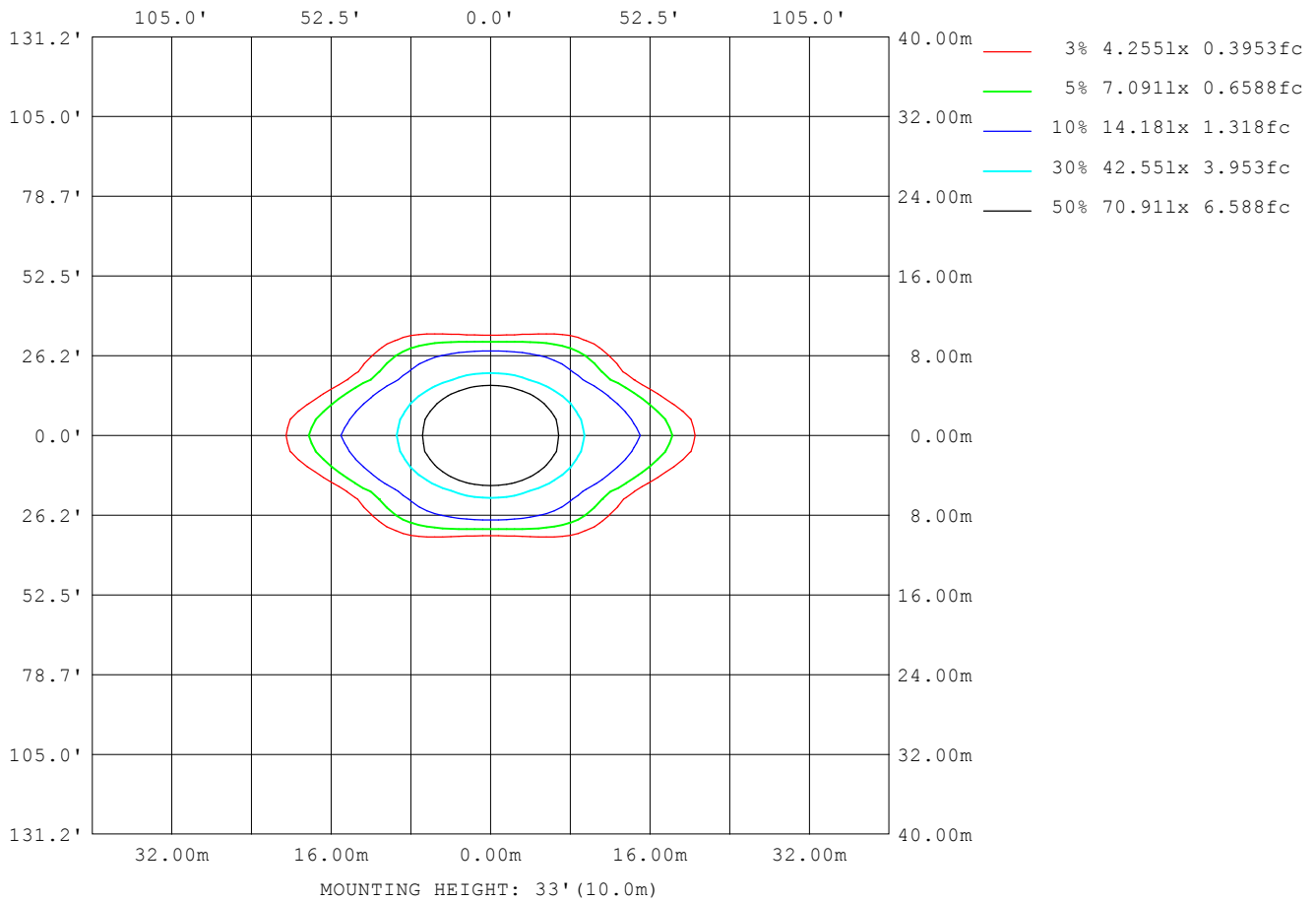
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-03-03

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



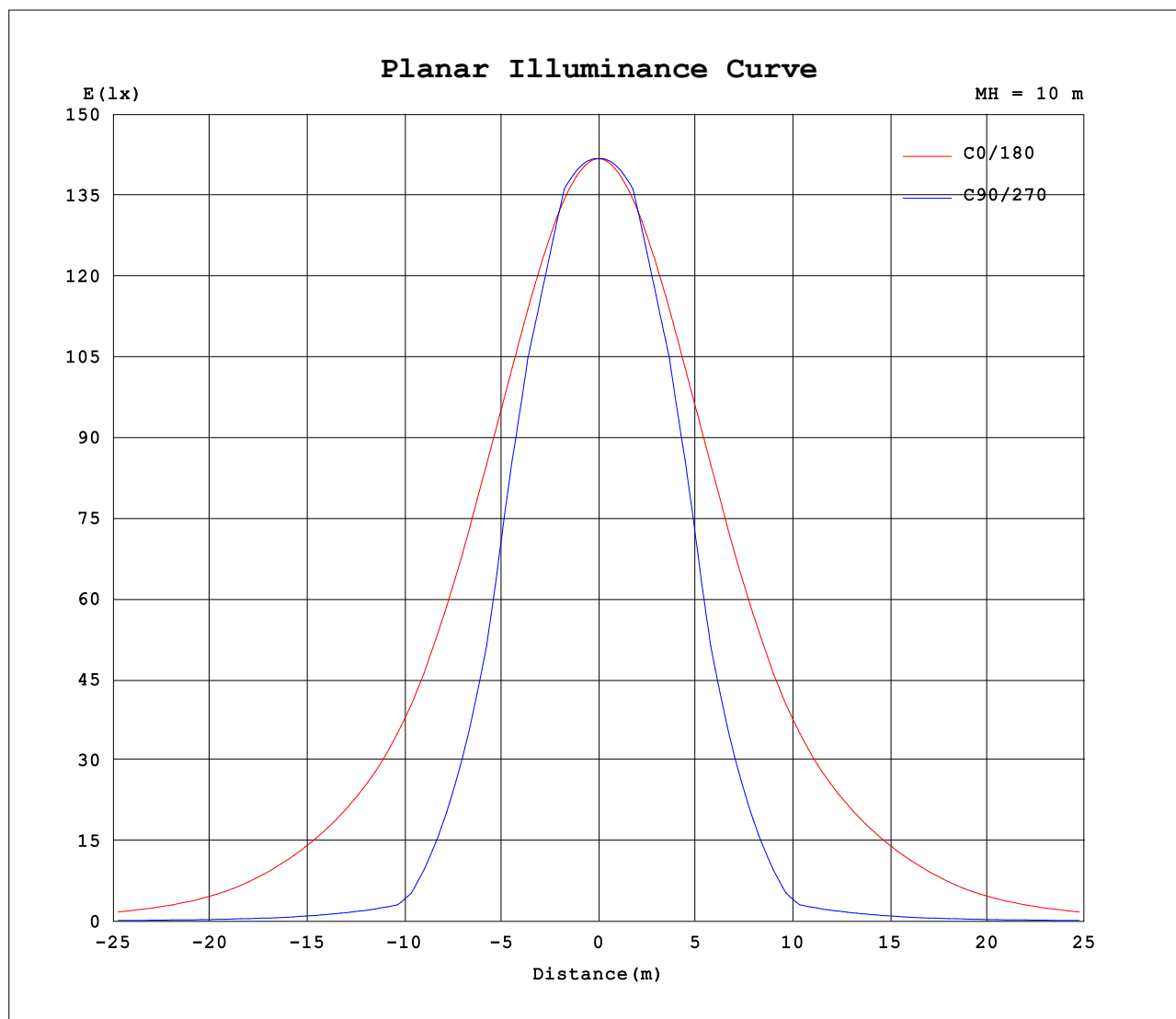
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-03-03

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: 2017-03-03

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: $\times 10 \text{cd}$

Assessor: