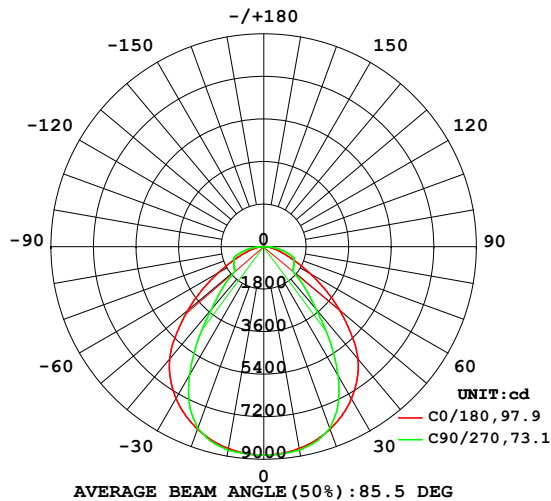


LUMINAIRE PHOTOMETRIC TEST REPORT

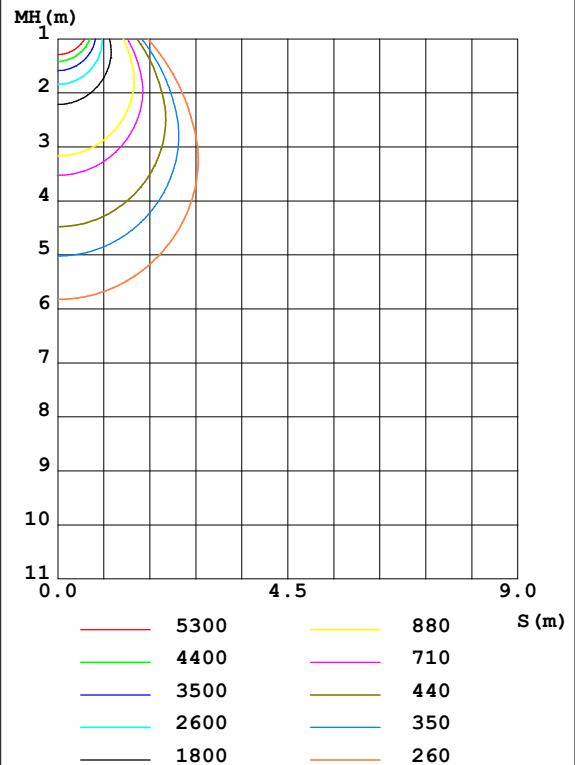
Test:U:230.0V I:0.6643A P:147.2W PF:0.9632 Lamp Flux:17820.8x1 lm					
NAME: LHB03-150		TYPE:150W		WEIGHT:	
SPEC.:5000K Ra80 80100DEG L00303		DIM.: 0.621*0.307*0.061		SERIAL No.:	
MFR.:		SUR.:0.57*0.27		Shielding Angle:	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 121.09 lm/W			
MODEL	LHB03-150	I _{max} (cd)	8820	S/MH (C0/180)	1.25
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH (C90/270)	1.06
RATED VOLTAGE(V)	230	TOTAL FLUX (lm)	17821	η UP,DN (C0-180)	0.0,50.0
NOMINAL FLUX(lm)	17820.8	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,50.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	100.0	CIBSE SHR MAX	1.30

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:2017-07-03

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	8783	8790	8799	8790	8783	8790	8799	8790	0- 5	210.5	210.5	1.18,1.18
10	8671	8699	8735	8699	8671	8700	8735	8700	5- 10	625.7	836.2	4.69,4.69
15	8482	8534	8539	8534	8482	8534	8539	8534	10- 15	1022	1858	10.4,10.4
20	8212	8252	8182	8252	8212	8249	8182	8249	15- 20	1380	3238	18.2,18.2
25	7863	7808	7424	7808	7863	7806	7424	7806	20- 25	1674	4912	27.6,27.6
30	7426	7162	6286	7162	7426	7163	6286	7163	25- 30	1867	6779	38,38
35	6884	6304	4868	6304	6884	6306	4868	6306	30- 35	1929	8708	48.9,48.9
40	6196	5234	3427	5234	6196	5236	3427	5236	35- 40	1849	10558	59.2,59.2
45	5232	4083	2462	4083	5232	4082	2462	4082	40- 45	1652	12210	68.5,68.5
50	4199	2959	1603	2959	4199	2961	1603	2961	45- 50	1384	13593	76.3,76.3
55	3175	2098	1541	2098	3175	2098	1541	2098	50- 55	1102	14696	82.5,82.5
60	2241	1393	1478	1393	2241	1394	1478	1394	55- 60	886.9	15582	87.4,87.4
65	1479	1114	1416	1114	1479	1115	1416	1115	60- 65	713.9	16296	91.4,91.4
70	957.3	820.4	1353	820.4	957.3	821.1	1353	821.1	65- 70	569.0	16865	94.6,94.6
75	602.3	521.5	1018	521.5	602.3	521.7	1018	521.7	70- 75	433.4	17299	97.1,97.1
80	344.1	338.1	682.5	338.1	344.1	338.0	682.5	338.0	75- 80	294.0	17593	98.7,98.7
85	120.1	174.4	347.2	174.4	120.1	174.3	347.2	174.3	80- 85	170.1	17763	99.7,99.7
90	5.057	13.26	11.78	13.26	5.057	13.05	11.78	13.05	85- 90	57.94	17821	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): 12210 lm

%lum = 68.5%

%lamp = 68.5%

Conical surface Flux(120deg): 15582 lm

%lum = 87.4%

%lamp = 87.4%

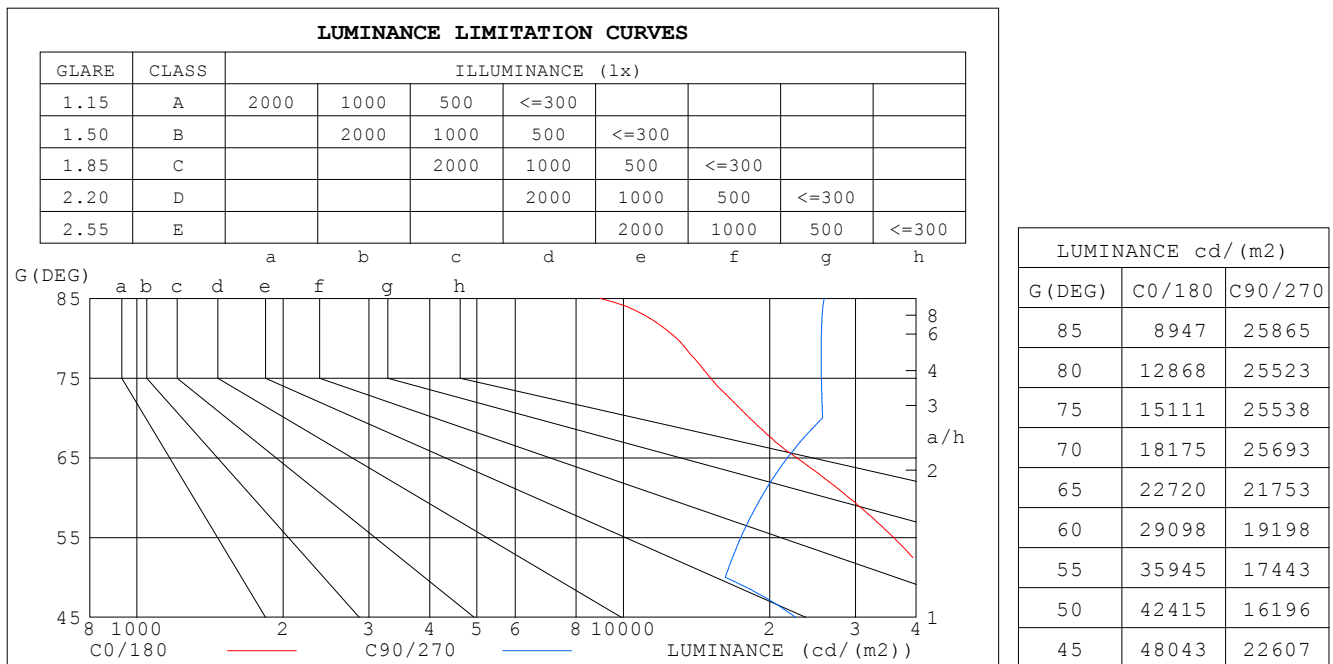
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-07-03

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: 2017-07-03

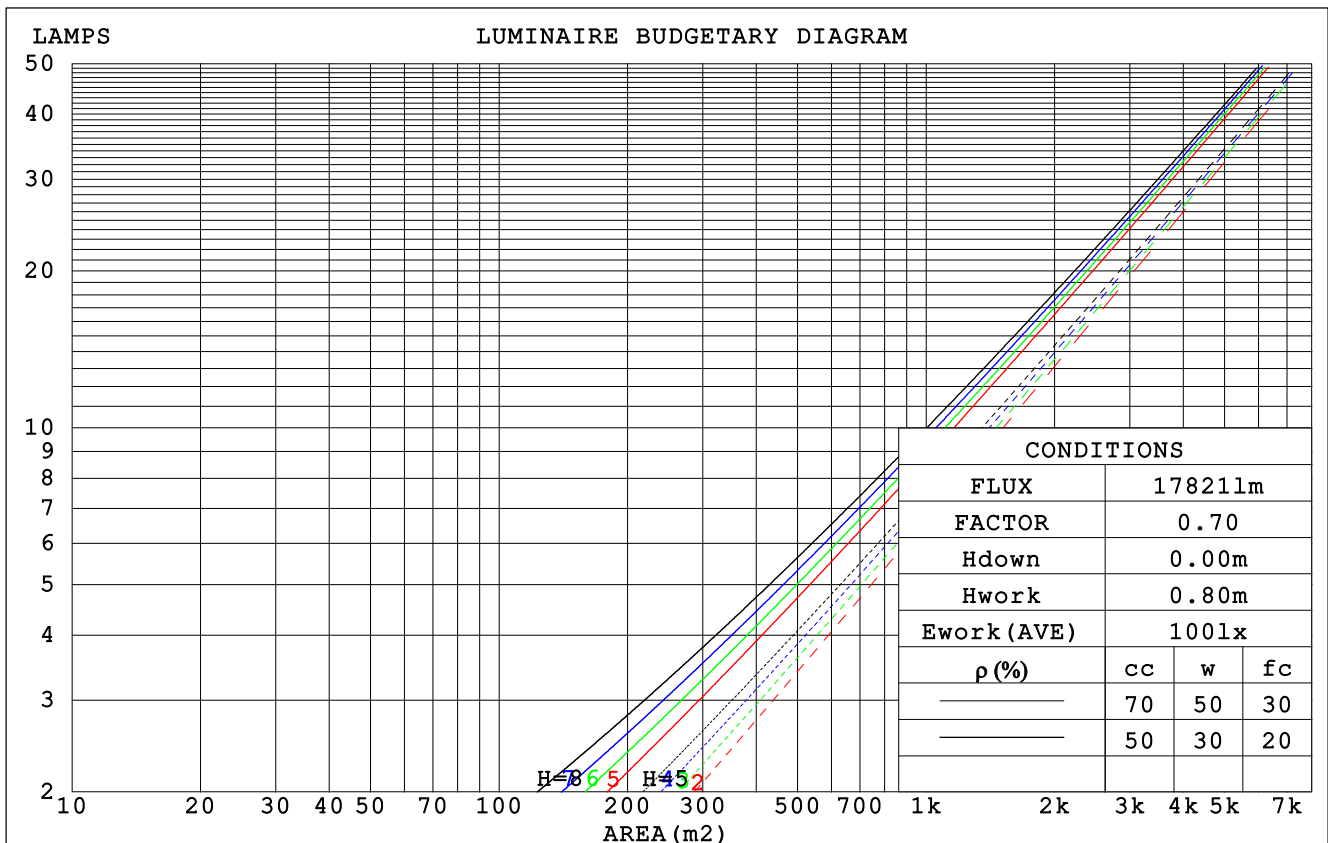
Checker:

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

pcc	80%			70%			50%			30%			10%			0
p _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p _{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	.00
1.0	1.06	1.03	.99	1.04	1.01	.98	.00	.97	.95	.96	.94	.92	.92	.91	.89	.87
2.0	.95	.89	.84	.93	.87	.83	.89	.85	.81	.86	.82	.79	.83	.80	.77	.75
3.0	.85	.78	.72	.83	.77	.71	.80	.75	.70	.78	.73	.69	.75	.71	.68	.66
4.0	.76	.69	.63	.75	.68	.62	.73	.66	.61	.71	.65	.61	.68	.64	.60	.58
5.0	.69	.61	.55	.68	.61	.55	.66	.60	.54	.64	.58	.54	.63	.57	.53	.51
6.0	.63	.55	.49	.62	.55	.49	.61	.54	.49	.59	.53	.48	.57	.52	.48	.46
7.0	.58	.50	.44	.57	.49	.44	.56	.49	.44	.54	.48	.43	.53	.47	.43	.41
8.0	.53	.45	.40	.53	.45	.40	.51	.45	.40	.50	.44	.39	.49	.43	.39	.38
9.0	.49	.42	.36	.49	.41	.36	.48	.41	.36	.47	.40	.36	.46	.40	.36	.34
10.0	.46	.38	.33	.45	.38	.33	.44	.38	.33	.43	.37	.33	.42	.37	.33	.31



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-07-03

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	.265	.150	.048	.258	.147	.047	.245	.140	.045	.233	.134	.043	.222	.128	.041	
2.0	.251	.138	.042	.245	.135	.042	.234	.130	.040	.223	.125	.039	.214	.121	.038	
3.0	.235	.125	.037	.230	.123	.037	.220	.119	.036	.211	.115	.035	.202	.112	.035	
4.0	.220	.114	.034	.215	.112	.033	.206	.109	.033	.198	.106	.032	.190	.103	.032	
5.0	.205	.105	.030	.201	.103	.030	.193	.101	.030	.186	.098	.029	.179	.096	.029	
6.0	.192	.096	.028	.189	.095	.027	.182	.093	.027	.175	.091	.027	.169	.089	.026	
7.0	.180	.089	.025	.177	.088	.025	.171	.086	.025	.165	.085	.025	.160	.083	.024	
8.0	.170	.083	.023	.167	.082	.023	.161	.081	.023	.156	.079	.023	.151	.078	.023	
9.0	.160	.078	.022	.158	.077	.022	.153	.076	.021	.148	.074	.021	.144	.073	.021	
10.0	.152	.073	.020	.149	.072	.020	.145	.071	.020	.141	.070	.020	.137	.069	.020	

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	.177	.157	.138	.152	.134	.119	.104	.092	.082	.060	.053	.048	.019	.017	.015	
2.0	.167	.132	.103	.143	.114	.089	.098	.079	.062	.056	.046	.036	.018	.015	.012	
3.0	.158	.114	.079	.135	.098	.069	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.150	.100	.063	.128	.087	.054	.088	.060	.038	.051	.035	.023	.016	.012	.007	
5.0	.142	.090	.051	.122	.078	.044	.084	.054	.031	.049	.032	.019	.016	.010	.006	
6.0	.135	.081	.042	.116	.070	.037	.080	.049	.026	.046	.029	.015	.015	.009	.005	
7.0	.128	.074	.036	.111	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.122	.068	.031	.105	.059	.027	.073	.041	.019	.042	.024	.011	.014	.008	.004	
9.0	.117	.063	.027	.101	.055	.023	.070	.038	.017	.041	.023	.010	.013	.007	.003	
10.0	.112	.059	.024	.096	.051	.021	.067	.036	.015	.039	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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	24.8	26.2	25.1	26.4	26.6	21.8	23.2	22.1	23.4	23.6
3H	25.4	26.6	25.7	26.9	27.1	23.8	25.0	24.1	25.2	25.5
4H	25.6	26.8	25.9	27.0	27.3	24.8	26.0	25.1	26.2	26.4
6H	25.7	26.8	26.0	27.1	27.3	25.6	26.7	25.9	26.9	27.2
8H	25.7	26.8	26.0	27.1	27.3	25.9	27.0	26.2	27.2	27.5
12H	25.7	26.7	26.0	27.0	27.3	26.1	27.1	26.5	27.4	27.7
4H 2H	24.9	26.0	25.2	26.3	26.5	22.3	23.5	22.6	23.8	24.0
3H	25.6	26.6	26.0	26.9	27.2	24.4	25.4	24.7	25.7	26.0
4H	25.9	26.8	26.3	27.1	27.5	25.5	26.4	25.8	26.7	27.1
6H	26.1	26.9	26.5	27.3	27.6	26.5	27.3	26.9	27.6	28.0
8H	26.1	26.9	26.6	27.3	27.7	26.9	27.6	27.3	28.0	28.4
12H	26.2	26.9	26.6	27.2	27.6	27.2	27.9	27.6	28.3	28.7
8H 4H	26.0	26.7	26.4	27.1	27.5	25.6	26.3	26.0	26.7	27.1
6H	26.3	26.9	26.7	27.3	27.7	26.7	27.3	27.1	27.7	28.2
8H	26.4	26.9	26.8	27.3	27.8	27.2	27.8	27.7	28.2	28.6
12H	26.4	26.9	26.9	27.3	27.8	27.7	28.1	28.1	28.6	29.1
12H 4H	26.0	26.7	26.4	27.1	27.5	25.6	26.3	26.0	26.6	27.0
6H	26.3	26.9	26.8	27.3	27.7	26.7	27.3	27.2	27.7	28.1
8H	26.4	26.9	26.9	27.4	27.8	27.2	27.7	27.7	28.2	28.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.5					+ 0.3 / - 0.4				
1.5H	+ 0.4 / - 0.7					+ 0.3 / - 0.4				
2.0H	+ 1.3 / - 1.5					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 17821 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.0)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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) $k(RI) \times RCR = 5$									
$k = 0.60$	66	56	50	66	56	50	64	55	50	44
0.80	76	66	60	75	66	60	73	65	59	53
1.00	83	74	68	82	74	68	80	74	67	61
1.25	90	81	75	88	80	75	86	79	74	68
1.50	94	86	80	93	85	80	90	83	79	72
2.00	100	93	87	98	91	86	95	89	85	78
2.50	103	96	91	101	95	90	97	92	89	81
3.00	105	100	95	103	98	94	100	95	92	84
4.00	109	104	100	106	102	99	102	99	96	88
5.00	111	107	103	108	105	102	104	101	99	90
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

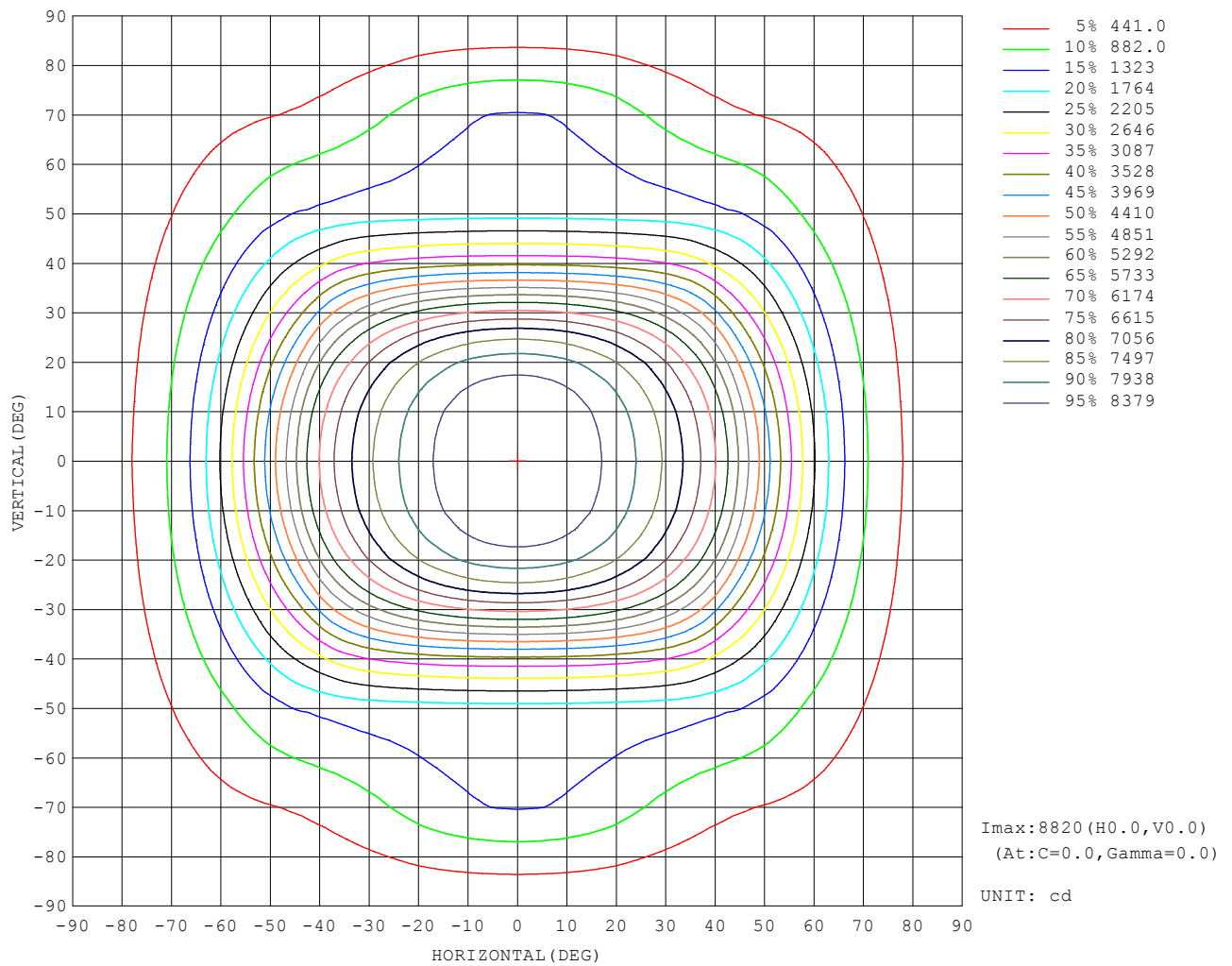
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



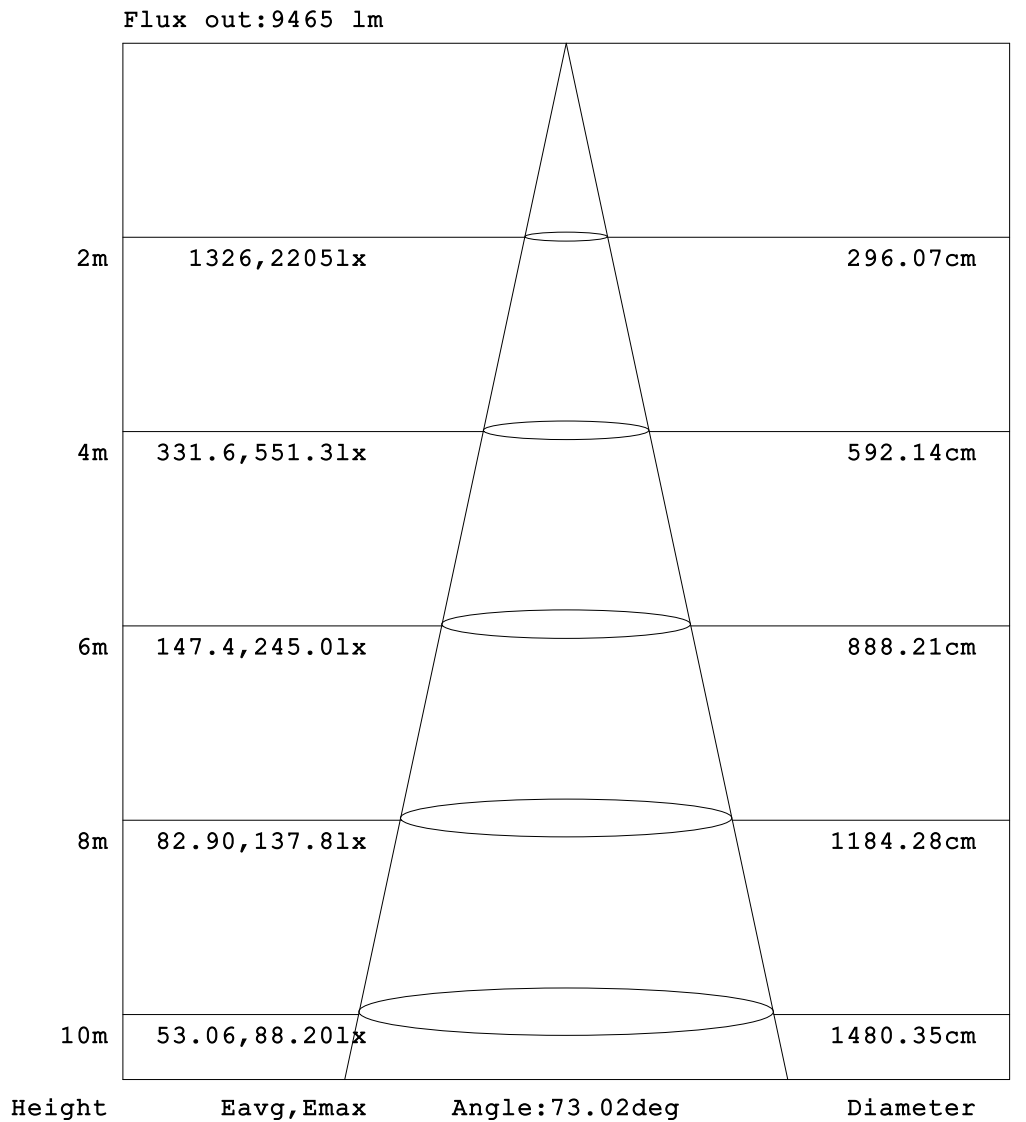
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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.

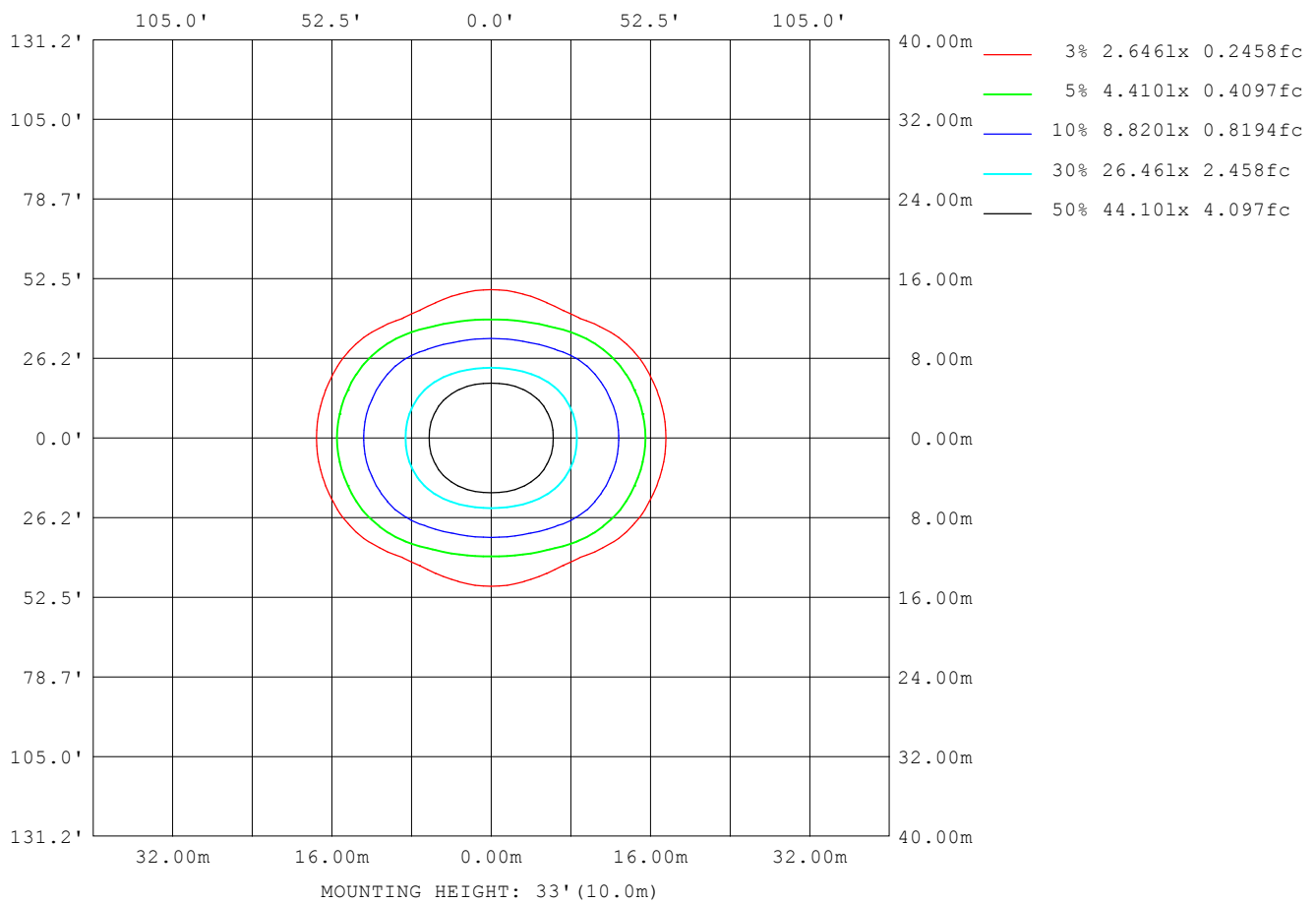
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



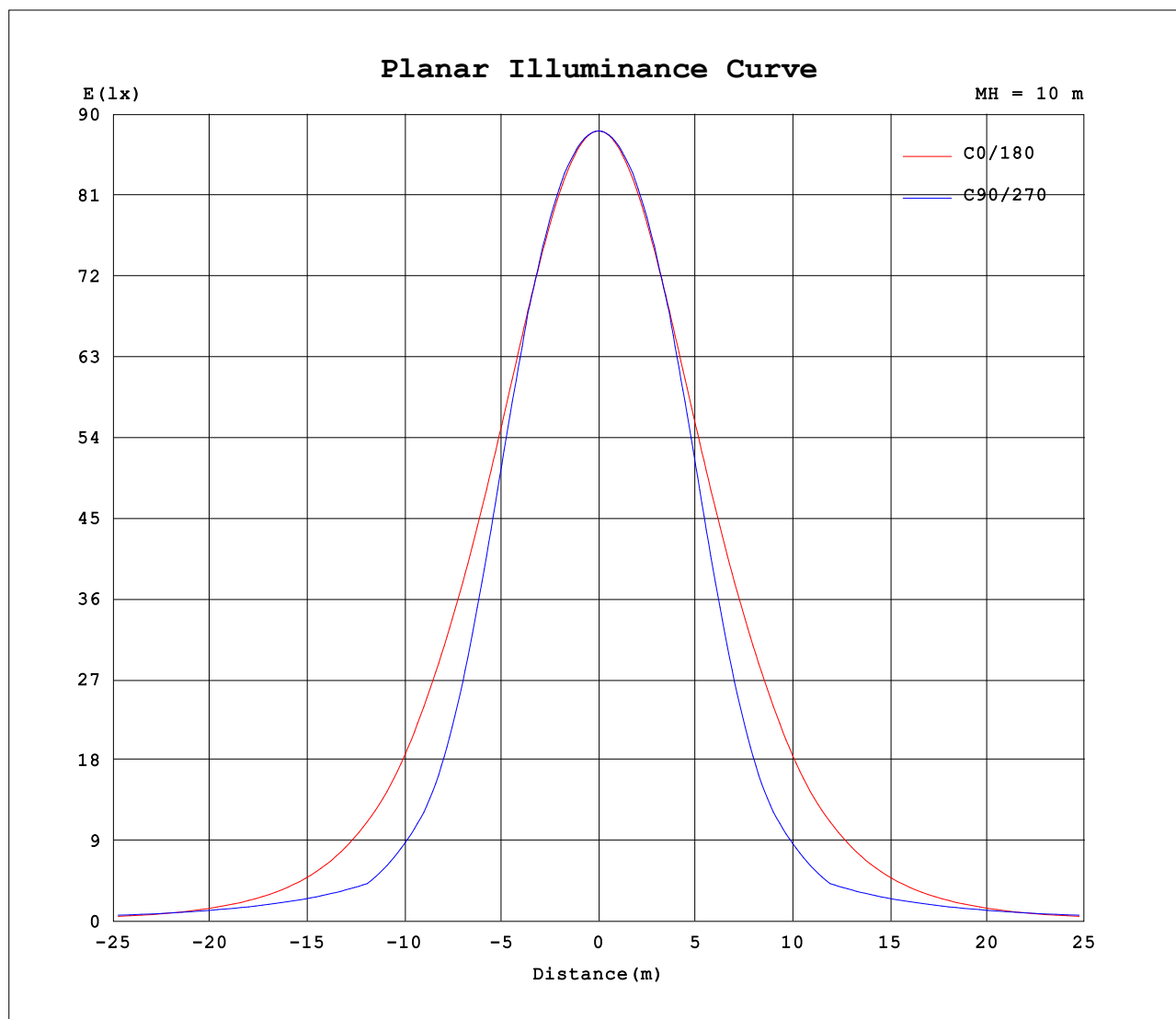
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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: 2017-07-03

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: cd

Assessor: