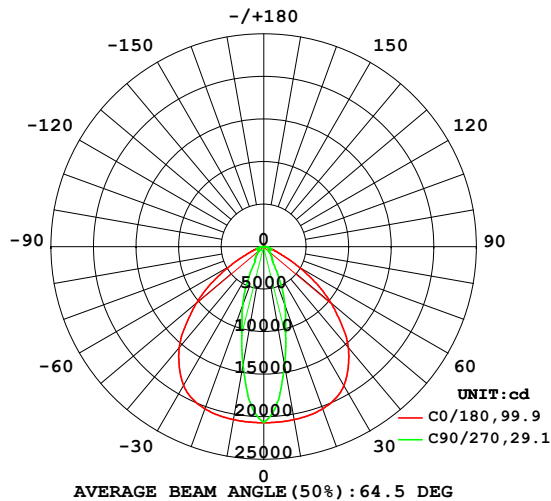


LUMINAIRE PHOTOMETRIC TEST REPORT

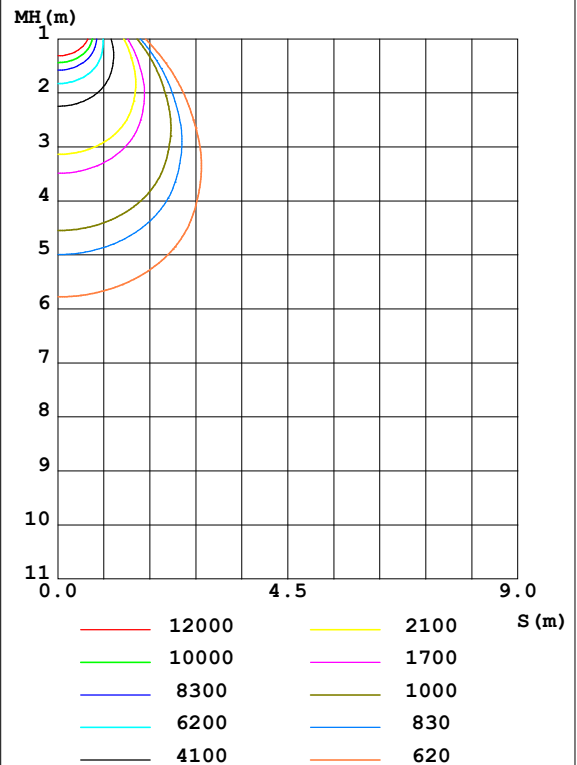
Test:U:230.0V I:0.6648A P:147.3W PF:0.9631 Lamp Flux:19863x1 lm		
NAME: LHB03-150	TYPE:150W	WEIGHT:
SPEC.:5000K Ra80 30100DEG L00301	DIM.: 0.621*0.307*0.061	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 134.87 lm/W			
MODEL	LHB03-150	Imax(cd)	20695	S/MH(C0/180)	1.32
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH(C90/270)	0.48
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	19863	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	19863	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:2017-07-03

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	2069	1929	1840	1929	2069	1929	1840	1929	0- 5	476.0	476.0	2.4,2.4
10	2064	1659	1413	1659	2064	1658	1413	1658	5- 10	1294	1770	8.91,8.91
15	2053	1326	1003	1326	2053	1325	1003	1325	10- 15	1831	3601	18.1,18.1
20	2028	1010	728.4	1010	2028	1009	728.4	1009	15- 20	2115	5716	28.8,28.8
25	1979	778.8	470.8	778.8	1979	777.9	470.8	777.9	20- 25	2223	7939	40,40
30	1885	568.3	213.2	568.3	1885	567.6	213.2	567.6	25- 30	2140	10079	50.7,50.7
35	1731	355.0	174.8	355.0	1731	354.8	174.8	354.8	30- 35	1933	12013	60.5,60.5
40	1547	167.3	136.5	167.3	1547	167.5	136.5	167.5	35- 40	1741	13753	69.2,69.2
45	1296	133.8	98.08	133.8	1296	133.6	98.08	133.6	40- 45	1518	15271	76.9,76.9
50	1033	100.3	59.70	100.3	1033	100.3	59.70	100.3	45- 50	1239	16510	83.1,83.1
55	753.5	65.53	67.90	65.53	753.5	65.51	67.90	65.51	50- 55	960.3	17470	88,88
60	469.8	35.66	76.10	35.66	469.8	35.72	76.10	35.72	55- 60	733.4	18204	91.6,91.6
65	240.5	32.46	84.29	32.46	240.5	32.53	84.29	32.53	60- 65	571.1	18775	94.5,94.5
70	131.5	28.31	92.49	28.31	131.5	28.39	92.49	28.39	65- 70	430.9	19206	96.7,96.7
75	61.04	23.63	69.66	23.63	61.04	23.70	69.66	23.70	70- 75	312.7	19518	98.3,98.3
80	22.52	15.81	46.83	15.81	22.52	15.89	46.83	15.89	75- 80	198.1	19717	99.3,99.3
85	5.265	8.461	23.99	8.461	5.265	8.518	23.99	8.518	80- 85	108.1	19825	99.8,99.8
90	0.5992	1.516	1.160	1.516	0.5992	1.550	1.160	1.550	85- 90	38.24	19863	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): 15271 lm

%lum = 76.9%

%lamp = 76.9%

Conical surface Flux(120deg): 18204 lm

%lum = 91.6%

%lamp = 91.6%

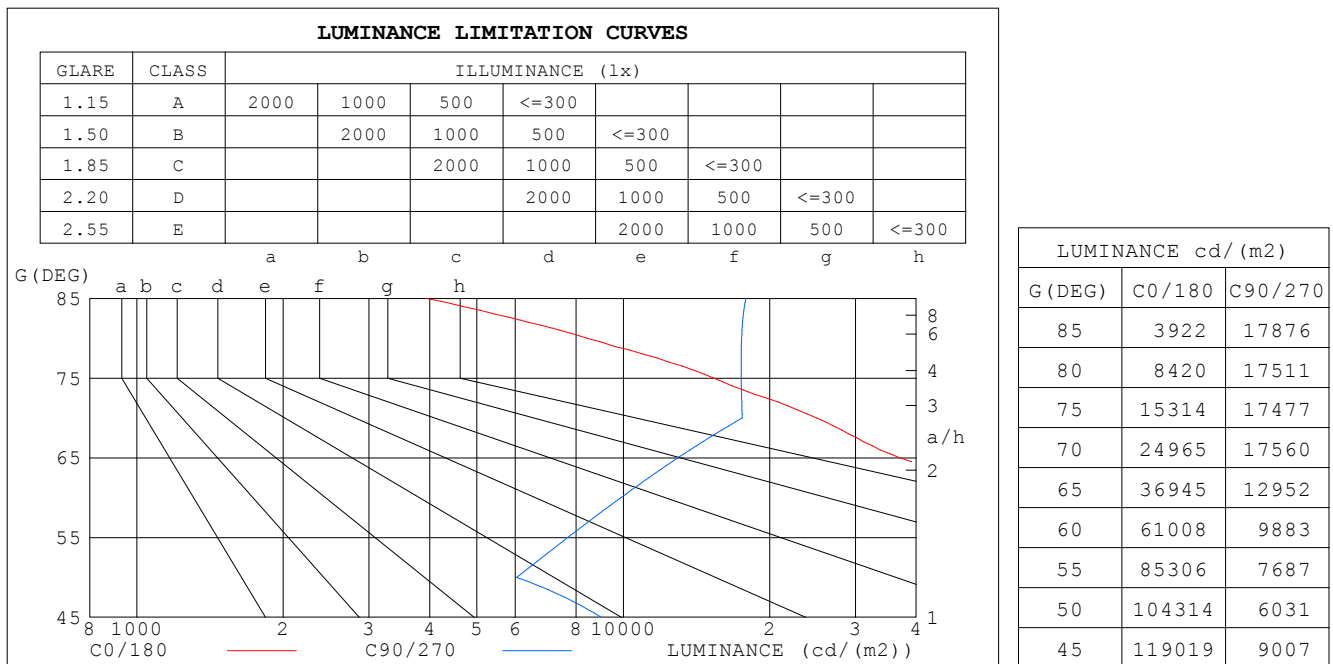
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-07-03

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

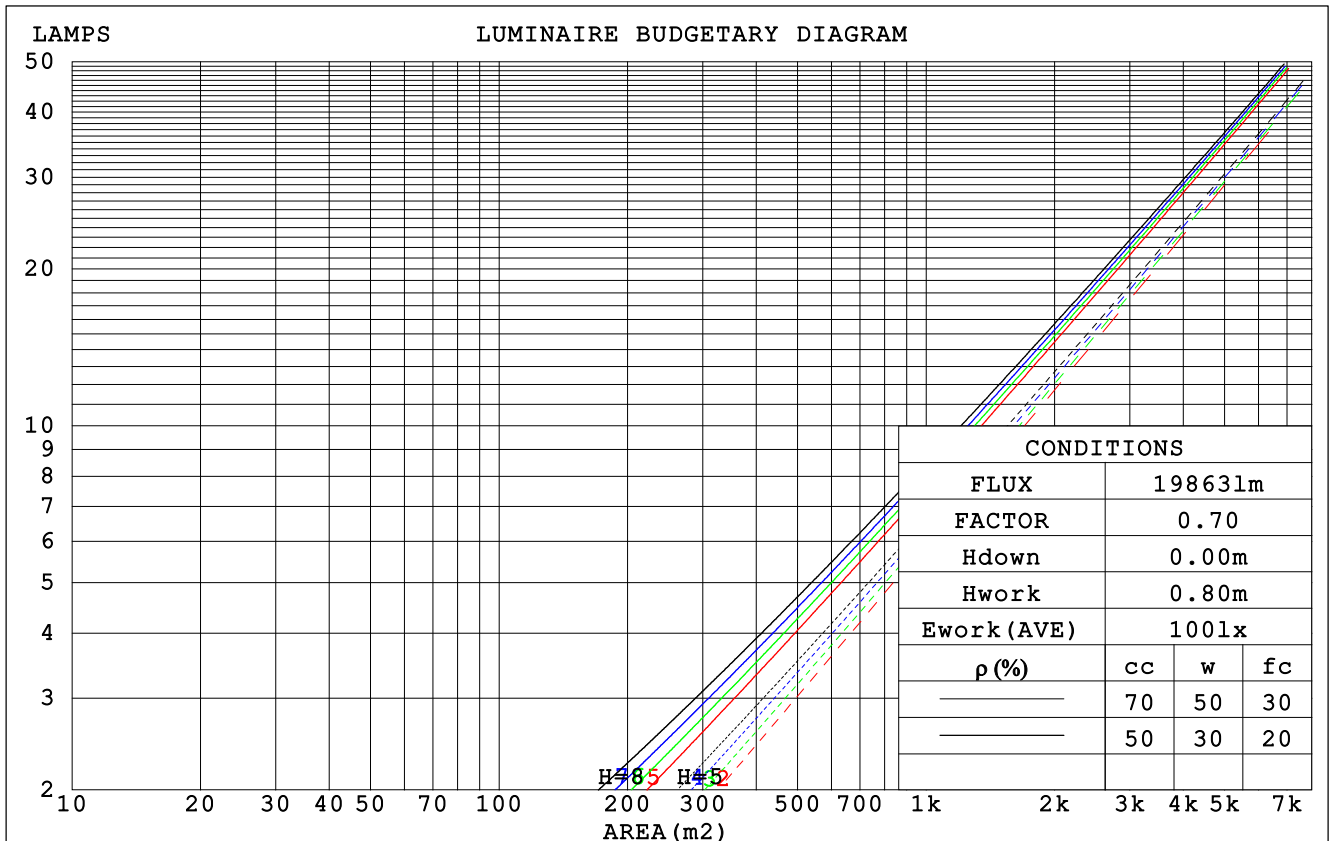
Checker:

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



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

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	.232	.132	.042	.225	.128	.041	.212	.122	.039	.200	.115	.037	.189	.110	.035	
2.0	.221	.121	.037	.215	.118	.036	.204	.113	.035	.194	.109	.034	.184	.104	.033	
3.0	.208	.111	.033	.203	.109	.033	.193	.105	.032	.184	.101	.031	.176	.097	.030	
4.0	.195	.101	.030	.191	.100	.029	.182	.097	.029	.174	.094	.028	.167	.091	.028	
5.0	.183	.093	.027	.179	.092	.027	.172	.089	.026	.165	.087	.026	.159	.085	.025	
6.0	.172	.086	.025	.169	.085	.025	.162	.083	.024	.156	.081	.024	.151	.079	.024	
7.0	.162	.080	.023	.159	.079	.023	.154	.078	.022	.148	.076	.022	.143	.074	.022	
8.0	.154	.075	.021	.151	.074	.021	.146	.073	.021	.141	.071	.021	.136	.070	.020	
9.0	.145	.070	.020	.143	.070	.020	.138	.068	.019	.134	.067	.019	.130	.066	.019	
10.0	.138	.066	.018	.136	.066	.018	.132	.064	.018	.128	.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	.096	.079	.064	.055	.046	.038	.018	.015	.012		
3.0	.153	.114	.083	.131	.098	.072	.090	.068	.051	.052	.040	.030	.017	.013	.010		
4.0	.144	.100	.066	.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	.100	.058	.029	.069	.041	.020	.040	.024	.012	.013	.008	.004		
9.0	.110	.061	.029	.095	.053	.025	.066	.038	.018	.038	.022	.011	.012	.007	.003		
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:2017-07-03

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	27.5	28.7	27.8	28.9	29.1	15.3	16.5	15.6	16.7	16.9
3H	28.1	29.2	28.4	29.4	29.7	19.1	20.2	19.4	20.4	20.6
4H	28.2	29.3	28.5	29.5	29.7	20.7	21.7	21.0	21.9	22.2
6H	28.2	29.2	28.5	29.4	29.7	21.8	22.8	22.1	23.0	23.3
8H	28.2	29.1	28.5	29.4	29.6	22.2	23.1	22.5	23.4	23.7
12H	28.1	29.0	28.5	29.3	29.6	22.5	23.4	22.8	23.7	24.0
4H 2H	27.3	28.3	27.6	28.5	28.8	15.8	16.8	16.1	17.0	17.3
3H	27.9	28.8	28.2	29.0	29.3	19.6	20.5	20.0	20.8	21.1
4H	28.0	28.8	28.3	29.1	29.4	21.4	22.2	21.8	22.5	22.9
6H	28.0	28.7	28.4	29.1	29.4	22.8	23.5	23.1	23.8	24.2
8H	28.0	28.7	28.4	29.0	29.4	23.3	23.9	23.7	24.3	24.7
12H	28.0	28.6	28.4	29.0	29.4	23.7	24.3	24.1	24.7	25.1
8H 4H	27.9	28.5	28.3	28.9	29.3	21.5	22.1	21.9	22.5	22.9
6H	27.9	28.5	28.3	28.9	29.3	23.0	23.5	23.4	23.9	24.3
8H	27.9	28.4	28.4	28.8	29.3	23.6	24.1	24.1	24.5	25.0
12H	27.9	28.3	28.4	28.7	29.2	24.2	24.6	24.7	25.1	25.5
12H 4H	27.8	28.5	28.3	28.8	29.2	21.4	22.0	21.8	22.4	22.8
6H	27.9	28.4	28.3	28.8	29.2	23.0	23.4	23.4	23.9	24.3
8H	27.9	28.3	28.3	28.7	29.2	23.6	24.1	24.1	24.5	25.0
Variations with the observer position at spacings:										
S = 1.0H	+ 1.7 / - 1.9					+ 0.2 / - 0.3				
1.5H	+ 3.1 / - 3.9					+ 0.1 / - 0.2				
2.0H	+ 4.5 / - 6.2					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 19863 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.4)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	72	63	58	72	63	58	71	63	58	53
0.80	81	73	67	81	72	67	79	72	67	61
1.00	88	80	75	87	79	74	85	80	74	68
1.25	94	86	81	93	86	81	90	84	80	74
1.50	98	91	86	96	90	85	94	88	84	78
2.00	102	96	92	101	95	91	98	93	89	83
2.50	105	100	95	103	98	94	100	96	92	85
3.00	108	103	99	106	101	98	102	98	95	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		

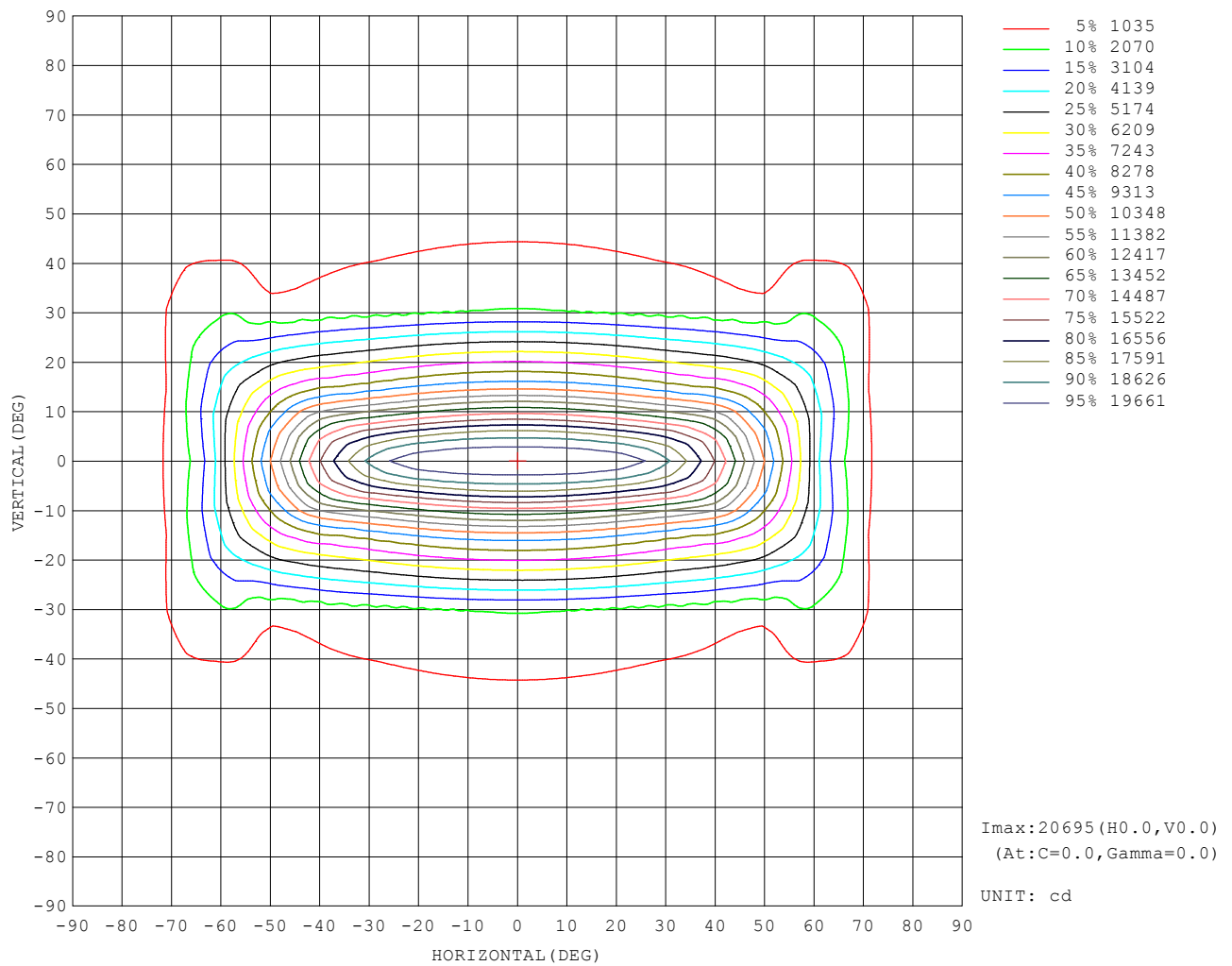
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



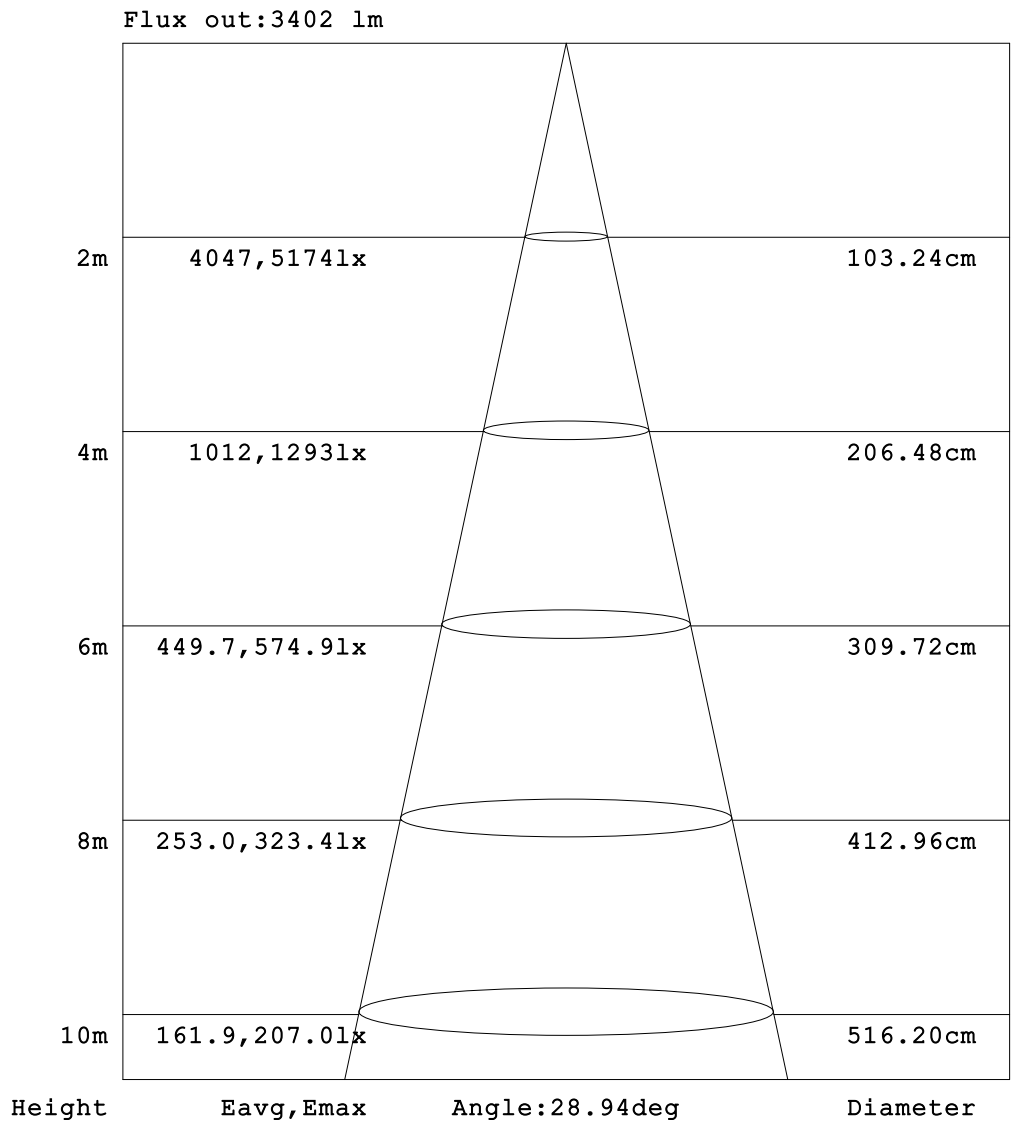
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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.

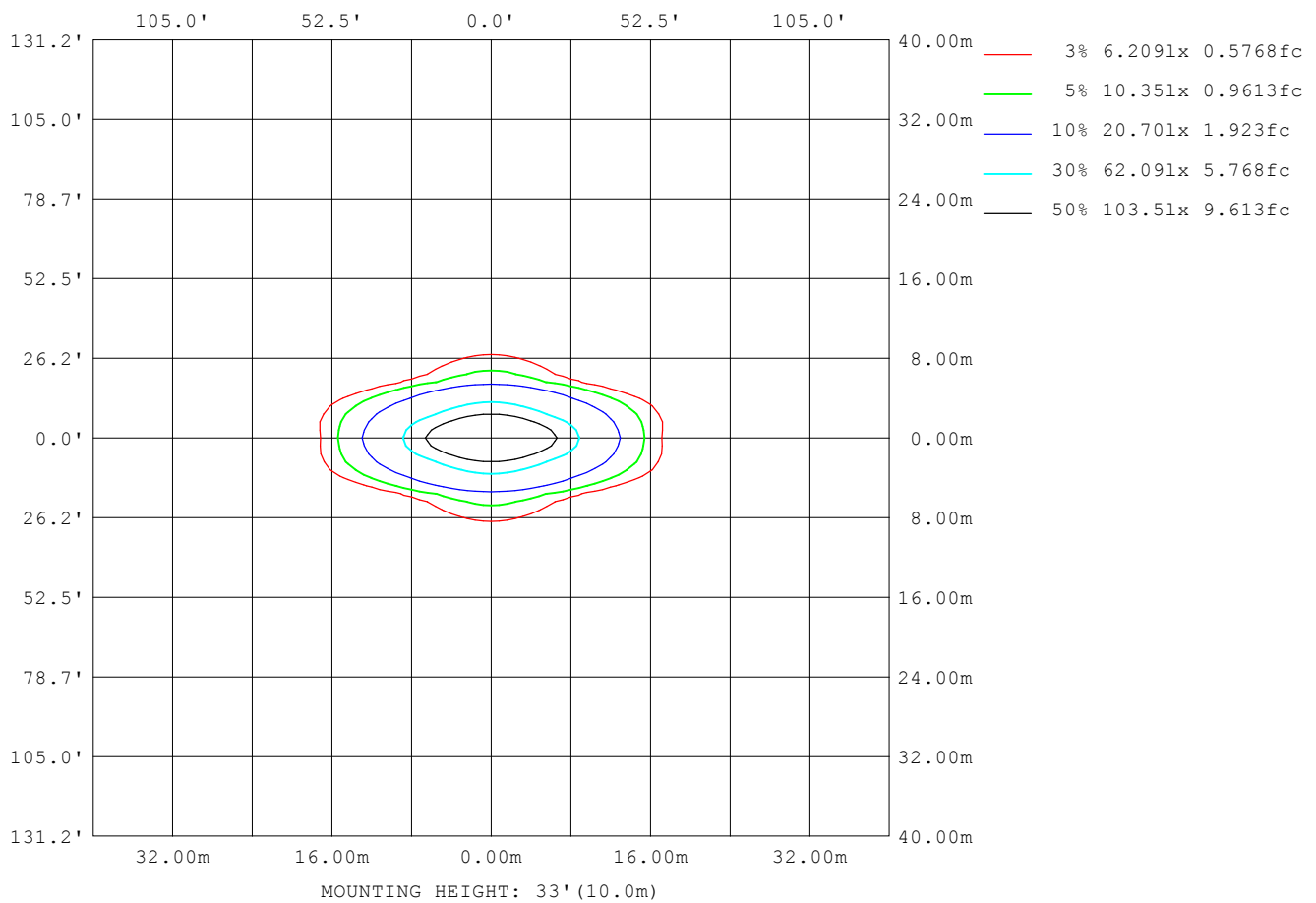
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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



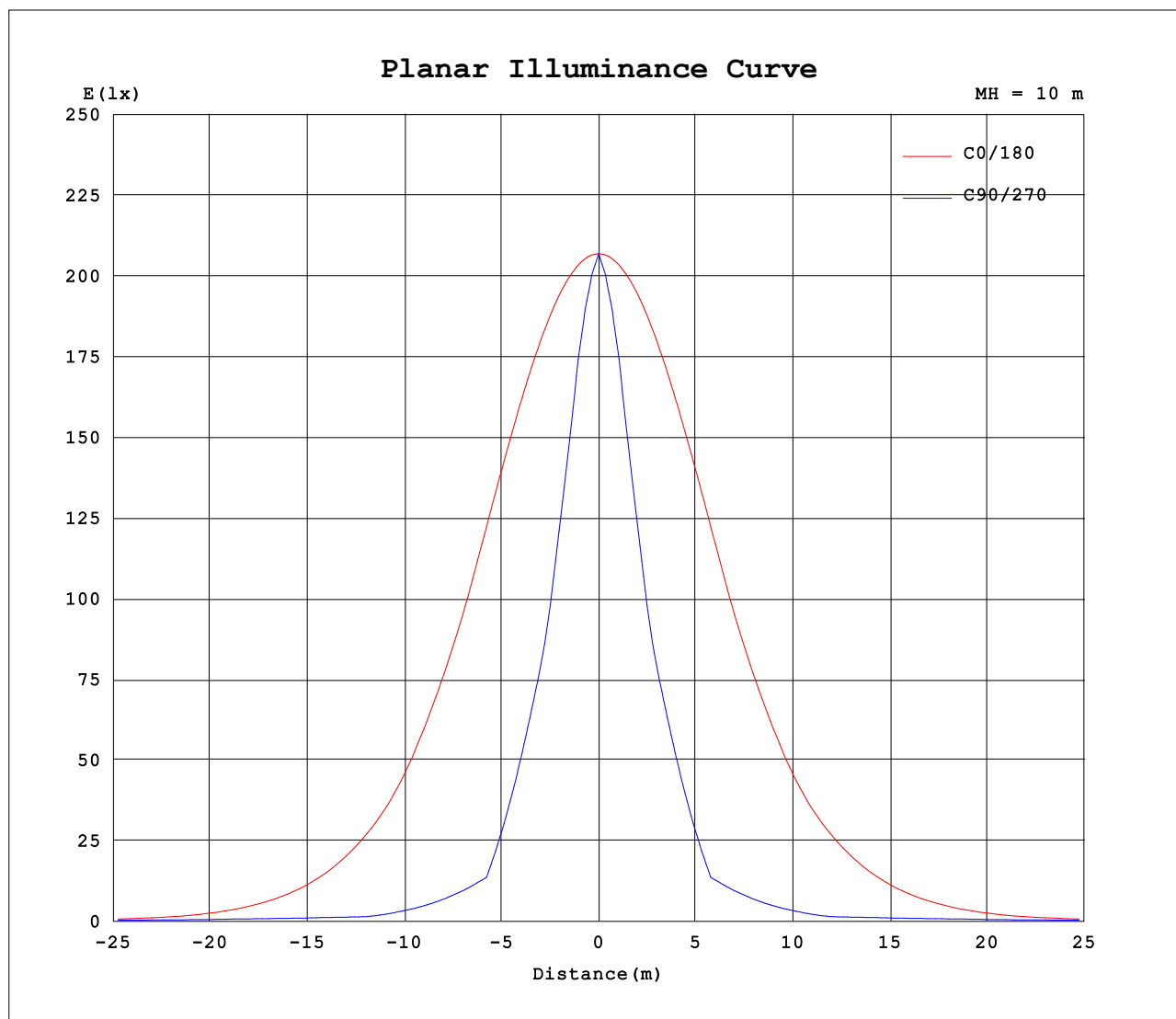
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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:

Assessor: