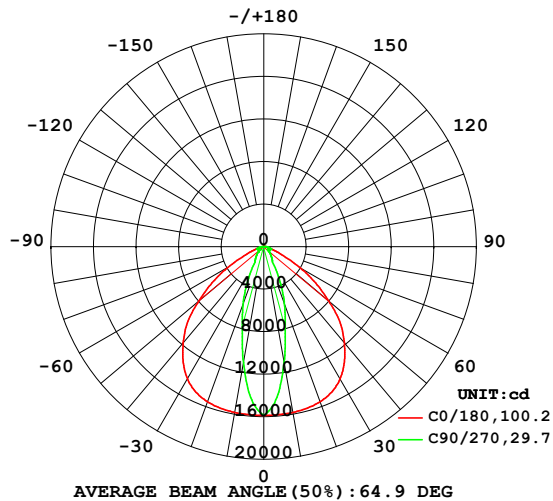


LUMINAIRE PHOTOMETRIC TEST REPORT

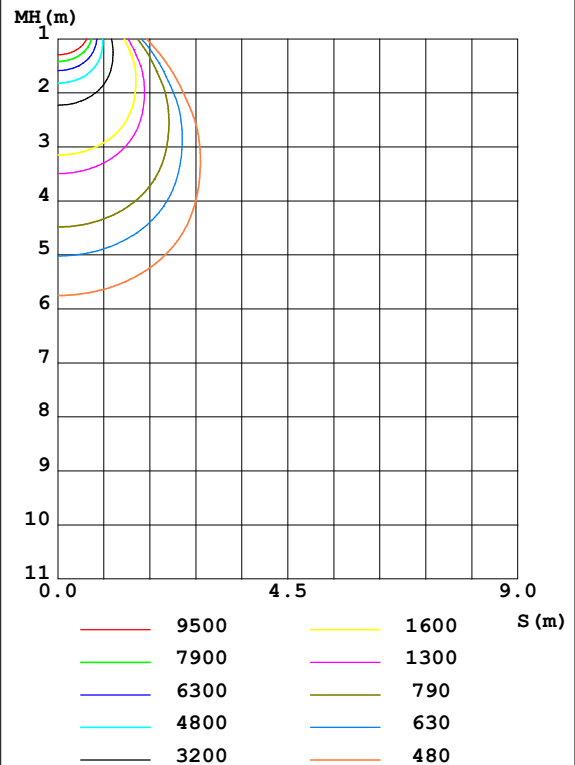
Test:U:230.0V I:0.5324A P:120.0W PF:0.9797 Lamp Flux:15479.9x1 lm		
NAME: LHB03-120	TYPE:120W	WEIGHT:
SPEC.:5000K Ra80 30100DEG L00301	DIM.: 0.621*0.307*0.061	SERIAL No.:
MFR.:	SUR.:0.57*0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 129.03 lm/W			
MODEL	LHB03-120	Imax(cd)	15874	S/MH(C0/180)	1.32
NOMINAL POWER(W)	120	LOR(%)	100.0	S/MH(C90/270)	0.49
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	15480	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	15479.9	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

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:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
5	1586	1487	1423	1487	1586	1487	1423	1487	0- 5	366.1	366.1	2.37,2.37
10	1583	1290	1106	1290	1583	1289	1106	1289	5- 10	1001	1367	8.83,8.83
15	1573	1040	785.8	1040	1573	1039	785.8	1039	10- 15	1423	2790	18,18
20	1552	791.7	570.3	791.7	1552	790.1	570.3	790.1	15- 20	1646	4436	28.7,28.7
25	1510	609.5	368.7	609.5	1510	608.3	368.7	608.3	20- 25	1730	6166	39.8,39.8
30	1436	444.7	167.2	444.7	1436	444.2	167.2	444.2	25- 30	1664	7829	50.6,50.6
35	1322	277.4	136.9	277.4	1322	277.9	136.9	277.9	30- 35	1501	9330	60.3,60.3
40	1180	130.6	106.5	130.6	1180	132.0	106.5	132.0	35- 40	1350	10680	69,69
45	1020	104.3	76.20	104.3	1020	105.4	76.20	105.4	40- 45	1181	11862	76.6,76.6
50	798.2	77.78	45.88	77.78	798.2	78.35	45.88	78.35	45- 50	977.7	12839	82.9,82.9
55	595.9	50.70	52.24	50.70	595.9	50.93	52.24	50.93	50- 55	748.9	13588	87.8,87.8
60	385.6	27.01	58.60	27.01	385.6	26.97	58.60	26.97	55- 60	578.2	14166	91.5,91.5
65	203.2	24.47	64.96	24.47	203.2	24.49	64.96	24.49	60- 65	454.2	14621	94.4,94.4
70	106.8	21.51	71.32	21.51	106.8	21.53	71.32	21.53	65- 70	346.2	14967	96.7,96.7
75	47.48	18.13	53.84	18.13	47.48	18.13	53.84	18.13	70- 75	247.1	15214	98.3,98.3
80	17.06	12.11	36.36	12.11	17.06	12.11	36.36	12.11	75- 80	153.3	15367	99.3,99.3
85	3.830	6.465	18.89	6.465	3.830	6.483	18.89	6.483	80- 85	82.83	15450	99.8,99.8
90	0.5031	1.195	1.408	1.195	0.5031	1.237	1.408	1.237	85- 90	29.82	15480	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): 11862 lm

%lum = 76.6%

%lamp = 76.6%

Conical surface Flux(120deg): 14166 lm

%lum = 91.5%

%lamp = 91.5%

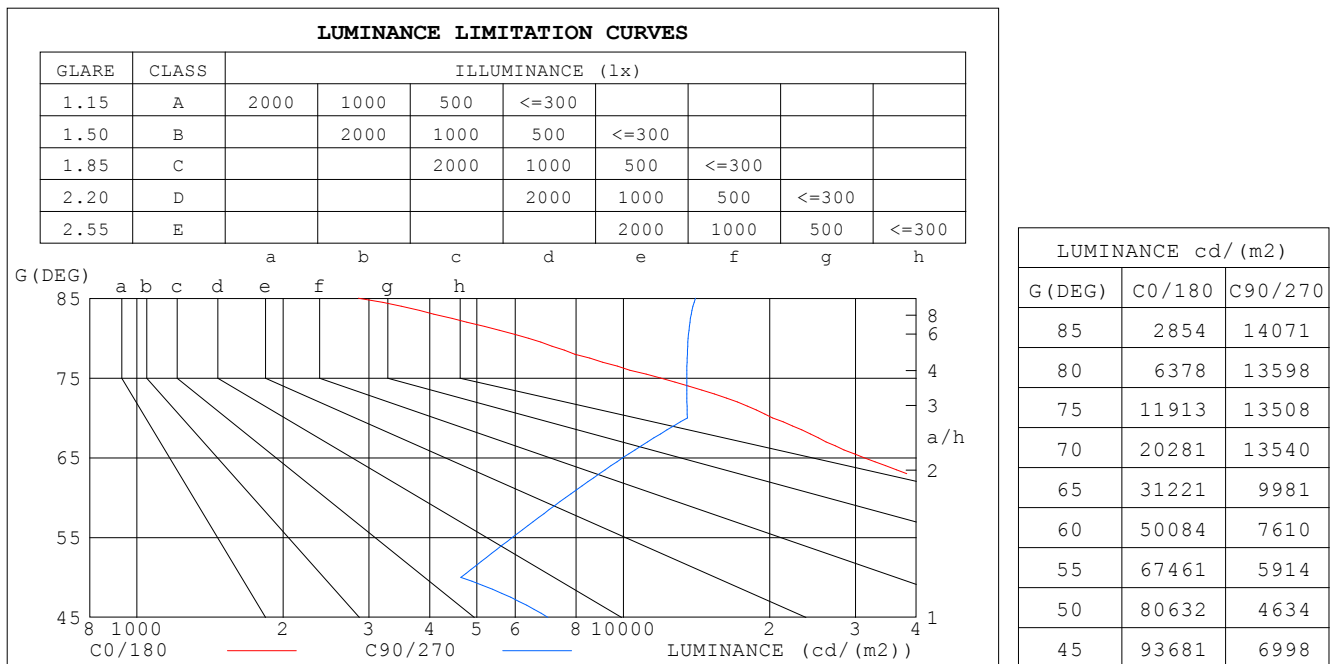
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-07-03

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

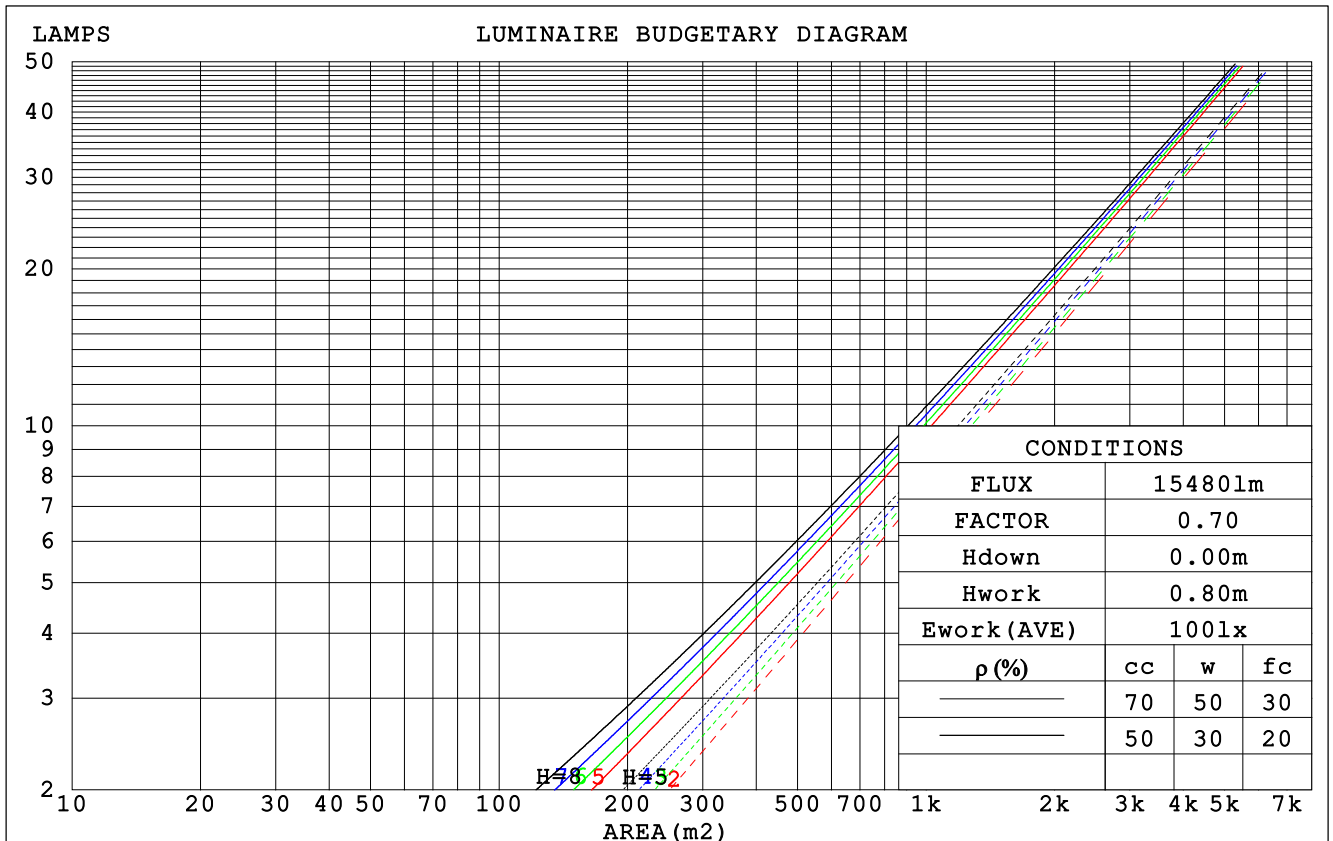
Checker:

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	1.00
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	.74	.80	.76	.73	.71
4.0	.81	.74	.69	.80	.74	.69	.78	.72	.68	.76	.71	.67	.74	.70	.66	.64
5.0	.75	.68	.62	.74	.67	.62	.72	.66	.61	.70	.65	.61	.68	.64	.60	.58
6.0	.69	.62	.57	.68	.61	.56	.67	.61	.56	.65	.60	.56	.64	.59	.55	.53
7.0	.64	.57	.52	.63	.57	.52	.62	.56	.51	.61	.55	.51	.60	.55	.51	.49
8.0	.60	.53	.48	.59	.52	.48	.58	.52	.48	.57	.51	.47	.56	.51	.47	.45
9.0	.56	.49	.44	.55	.49	.44	.54	.48	.44	.53	.48	.44	.53	.47	.44	.42
10.0	.53	.46	.41	.52	.46	.41	.51	.45	.41	.50	.45	.41	.50	.45	.41	.39



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	.116	.037	.190	.110	.035		
2.0	.221	.121	.037	.215	.119	.037	.204	.114	.035	.194	.109	.034	.185	.105	.033		
3.0	.208	.111	.033	.203	.109	.033	.194	.105	.032	.185	.101	.031	.176	.098	.030		
4.0	.196	.102	.030	.191	.100	.030	.183	.097	.029	.175	.094	.028	.168	.091	.028		
5.0	.184	.094	.027	.180	.092	.027	.172	.090	.026	.165	.087	.026	.159	.085	.026		
6.0	.173	.087	.025	.169	.085	.025	.163	.083	.024	.157	.081	.024	.151	.079	.024		
7.0	.163	.080	.023	.160	.080	.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	.146	.070	.020	.143	.070	.020	.139	.069	.019	.134	.067	.019	.130	.066	.019		
10.0	.138	.066	.018	.136	.066	.018	.132	.065	.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	.050	.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	.136	.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	.016	.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	.062	.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	26.8	28.0	27.0	28.1	28.3	14.4	15.6	14.6	15.8	15.9
3H	27.4	28.5	27.7	28.7	29.0	18.1	19.2	18.4	19.4	19.7
4H	27.5	28.6	27.8	28.8	29.1	19.7	20.7	20.0	21.0	21.2
6H	27.5	28.5	27.8	28.7	29.0	20.8	21.8	21.2	22.1	22.3
8H	27.5	28.4	27.8	28.7	29.0	21.3	22.2	21.6	22.5	22.7
12H	27.4	28.3	27.8	28.6	28.9	21.6	22.5	21.9	22.8	23.0
4H 2H	26.5	27.5	26.8	27.8	28.0	14.8	15.9	15.1	16.1	16.3
3H	27.2	28.1	27.5	28.4	28.6	18.7	19.6	19.0	19.8	20.1
4H	27.3	28.1	27.7	28.4	28.8	20.4	21.3	20.8	21.6	21.9
6H	27.3	28.1	27.7	28.4	28.8	21.8	22.5	22.2	22.9	23.2
8H	27.3	28.0	27.7	28.3	28.7	22.3	23.0	22.7	23.3	23.7
12H	27.3	27.9	27.7	28.3	28.7	22.7	23.3	23.1	23.7	24.1
8H 4H	27.2	27.9	27.6	28.2	28.6	20.5	21.2	20.9	21.5	21.9
6H	27.2	27.8	27.7	28.2	28.6	22.0	22.6	22.4	23.0	23.4
8H	27.2	27.7	27.7	28.1	28.6	22.7	23.1	23.1	23.6	24.0
12H	27.2	27.6	27.7	28.1	28.5	23.2	23.7	23.7	24.1	24.6
12H 4H	27.2	27.8	27.6	28.2	28.5	20.4	21.1	20.9	21.4	21.8
6H	27.2	27.7	27.6	28.1	28.6	22.0	22.5	22.4	22.9	23.3
8H	27.2	27.6	27.7	28.1	28.5	22.7	23.1	23.1	23.5	24.0
Variations with the observer position at spacings:										
S = 1.0H	+ 1.6 / - 1.7					+ 0.2 / - 0.3				
1.5H	+ 3.1 / - 3.7					+ 0.1 / - 0.2				
2.0H	+ 4.5 / - 6.1					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 15480 lm Total Lamp Luminous Flux.(8log(F/F0) = 9.5)

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	57	52
0.80	81	73	67	80	72	67	79	71	66	61
1.00	88	80	74	87	79	74	85	80	74	68
1.25	94	86	81	93	85	81	90	84	80	74
1.50	98	91	85	96	90	85	94	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	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		

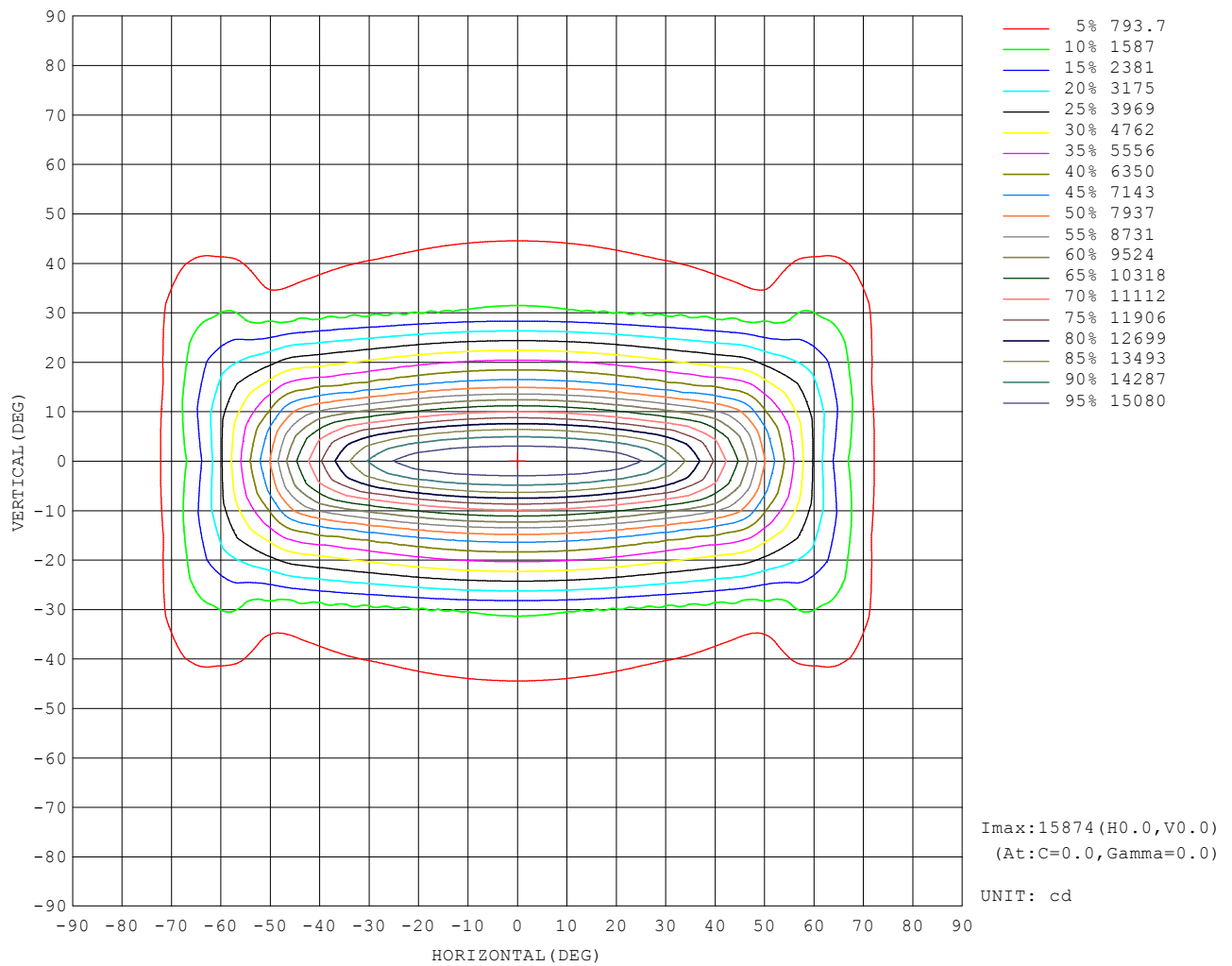
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-07-03

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



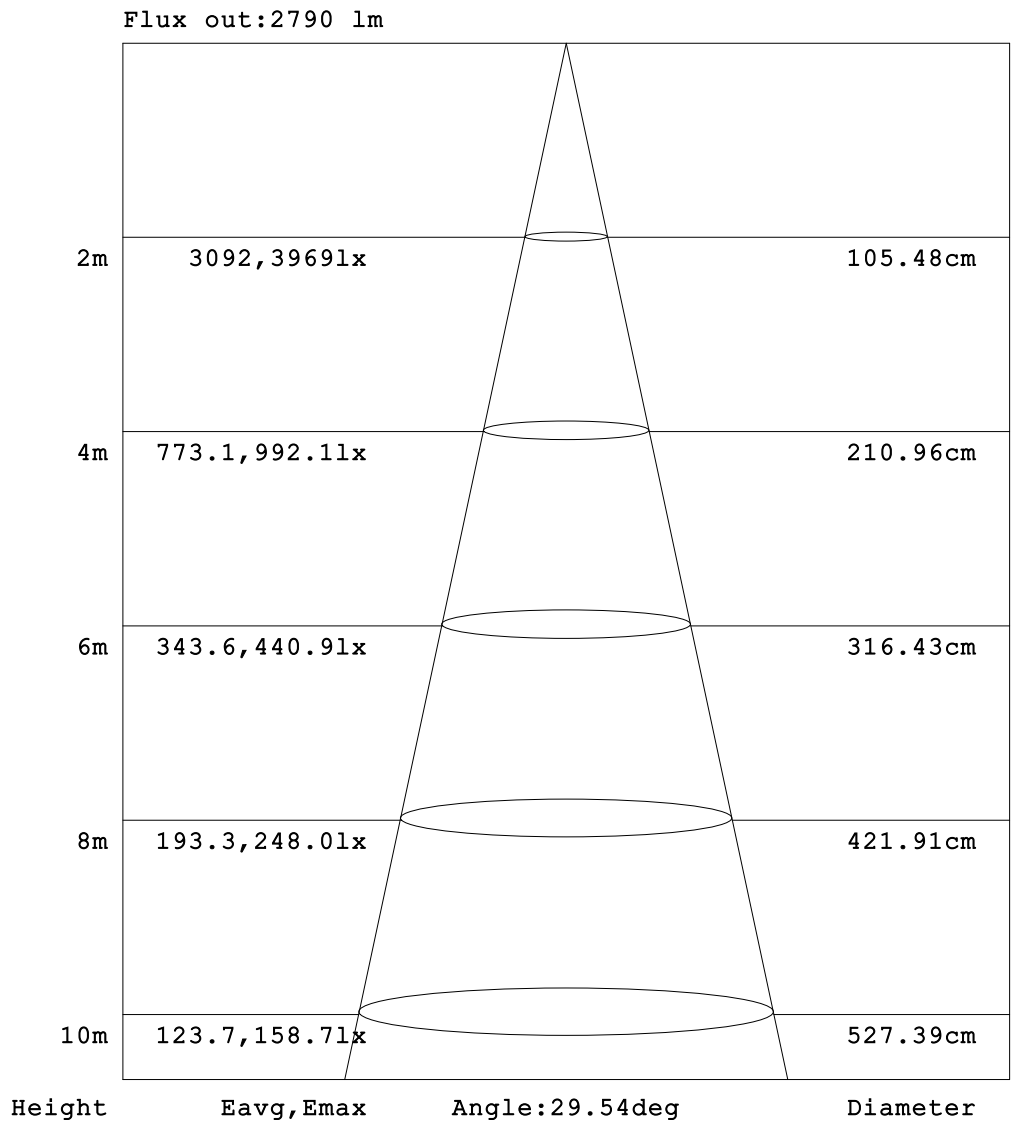
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-07-03

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.

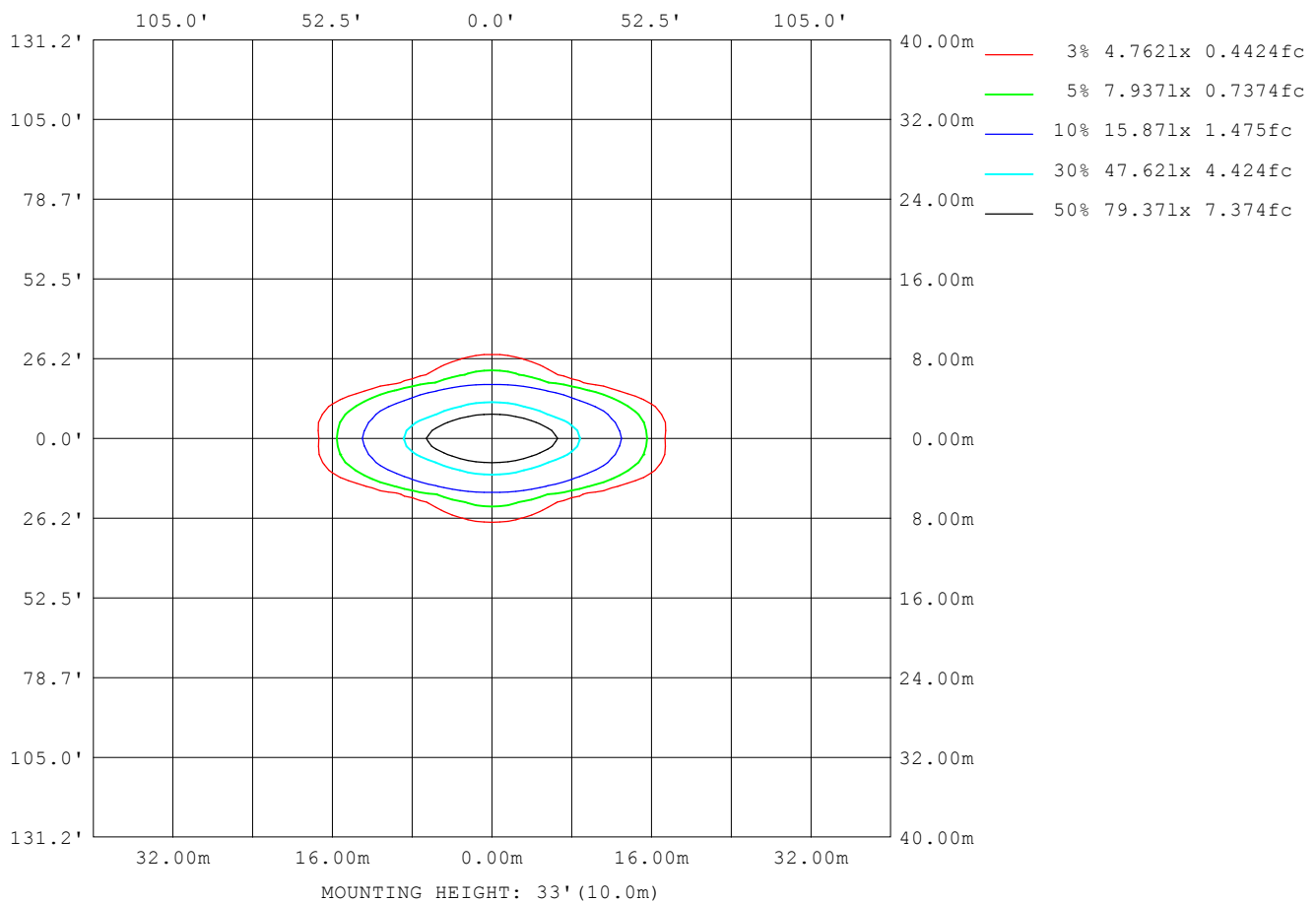
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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



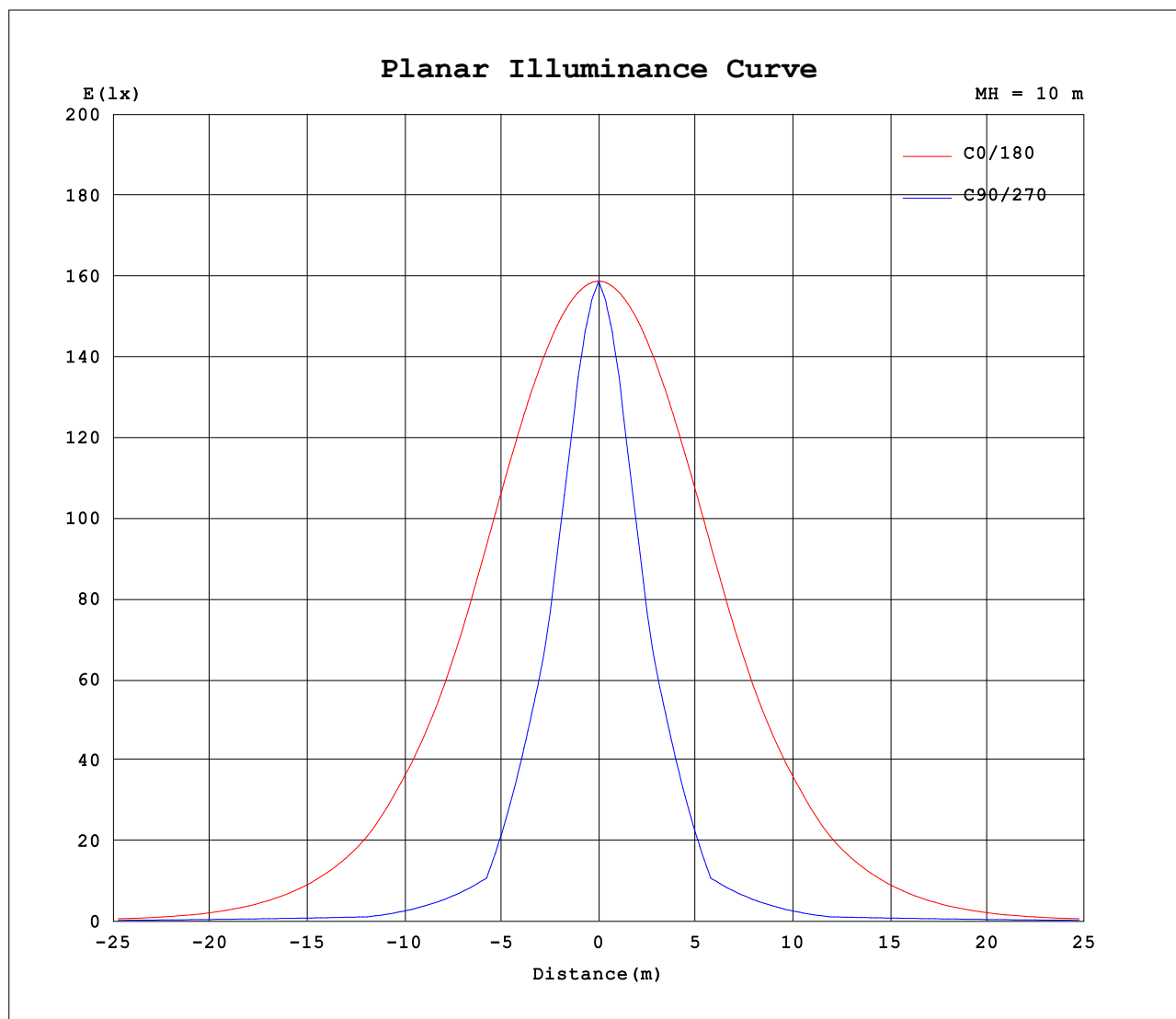
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-07-03

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:

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: