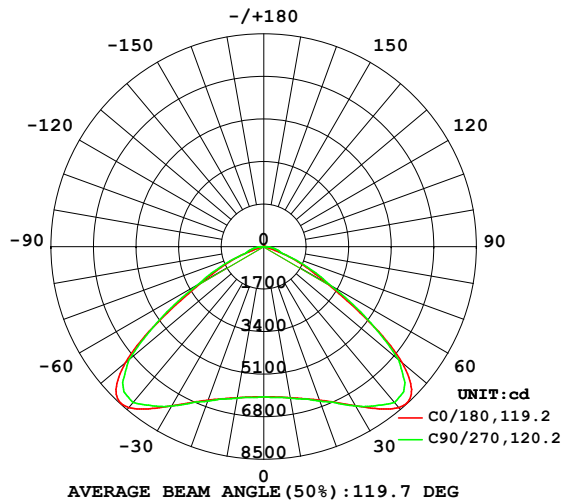


LUMINAIRE PHOTOMETRIC TEST REPORT

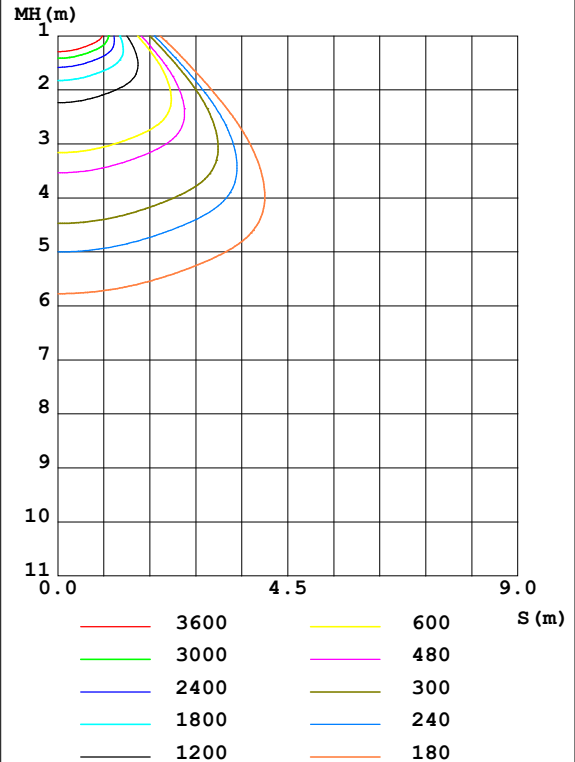
Test:U:230.0V I:0.6518A P:148.4W PF:0.9901 Lamp Flux:23461.2x1 lm		
NAME: LHB01-150H	TYPE:150W	WEIGHT:
SPEC.:5000K Ra70 L06403	DIM.: 1.178*0.137*0.102	SERIAL No.:
MFR.:	SUR.:1.17*0.1	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 158.10 lm/W			
MODEL	LHB01-150H	Imax(cd)	8473	S/MH(C0/180)	1.82
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH(C90/270)	1.80
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	23461	η UP,DN(C0-180)	0.0,50.1
NOMINAL FLUX(lm)	23461.2	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.75
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.75

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:2017-09-26

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	6032	6053	6053	6053	6032	6055	6053	6055	0- 5	144.2	144.2	0.61,0.61
10	6130	6133	6147	6133	6130	6144	6147	6144	5- 10	436.1	580.3	2.47,2.47
15	6290	6305	6304	6305	6290	6328	6304	6328	10- 15	738.9	1319	5.62,5.62
20	6530	6532	6568	6532	6530	6568	6568	6568	15- 20	1060	2379	10.1,10.1
25	6872	6882	6894	6882	6872	6917	6894	6917	20- 25	1410	3789	16.1,16.1
30	7338	7342	7354	7342	7338	7363	7354	7363	25- 30	1802	5591	23.8,23.8
35	7905	7860	7762	7860	7905	7850	7762	7850	30- 35	2242	7833	33.4,33.4
40	8394	8291	8134	8291	8394	8253	8134	8253	35- 40	2693	10526	44.9,44.9
45	8341	8059	7947	8059	8341	8058	7947	8058	40- 45	3055	13581	57.9,57.9
50	7210	7145	7032	7145	7210	7140	7032	7140	45- 50	3105	16686	71.1,71.1
55	4934	5085	5063	5085	4934	4935	5063	4935	50- 55	2640	19326	82.4,82.4
60	2881	3096	3028	3096	2881	3002	3028	3002	55- 60	1827	21153	90.2,90.2
65	1704	1847	1907	1847	1704	1788	1907	1788	60- 65	1154	22307	95.1,95.1
70	651.8	905.1	786.1	905.1	651.8	891.0	786.1	891.0	65- 70	656.5	22963	97.9,97.9
75	120.7	239.4	591.3	239.4	120.7	241.3	591.3	241.3	70- 75	260.6	23224	99,99
80	62.67	115.5	396.5	115.5	62.67	118.2	396.5	118.2	75- 80	131.3	23355	99.5,99.5
85	21.03	60.20	201.7	60.20	21.03	61.57	201.7	61.57	80- 85	77.53	23433	99.9,99.9
90	6.772	7.629	6.951	7.629	6.772	7.944	6.951	7.944	85- 90	28.40	23461	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): 13581 lm

%lum = 57.9%

%lamp = 57.9%

Conical surface Flux(120deg): 21153 lm

%lum = 90.2%

%lamp = 90.2%

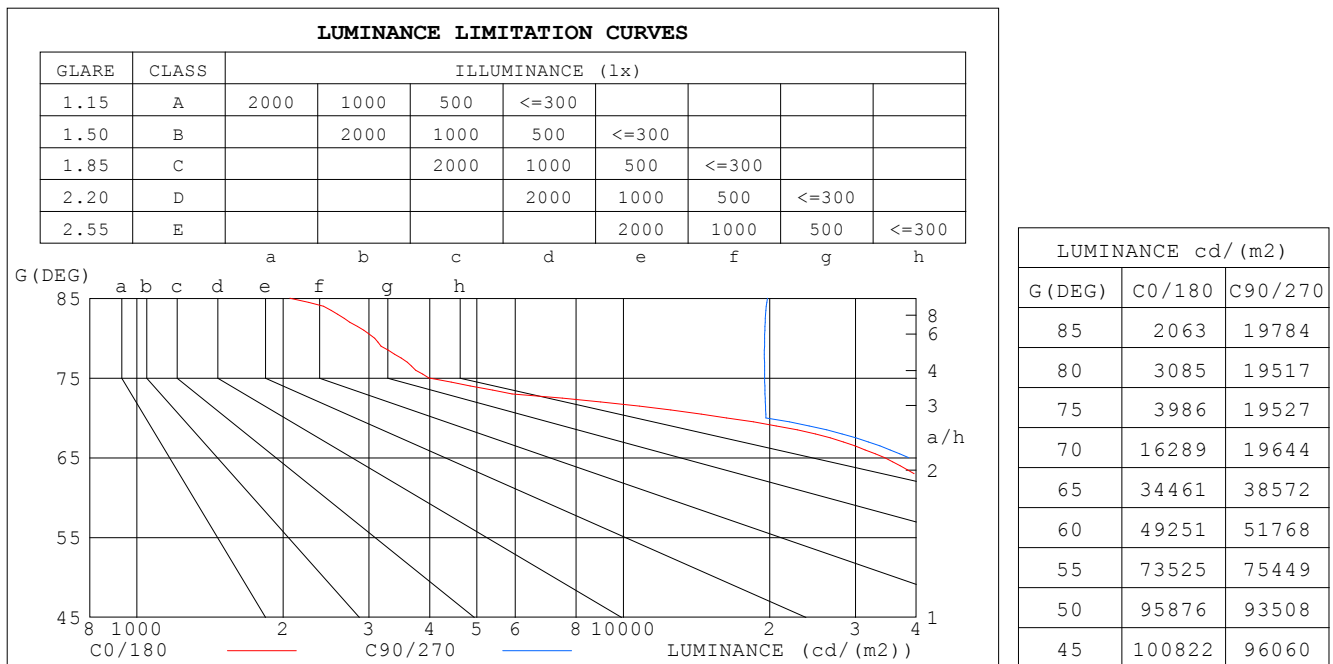
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2017-09-26

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: 2017-09-26

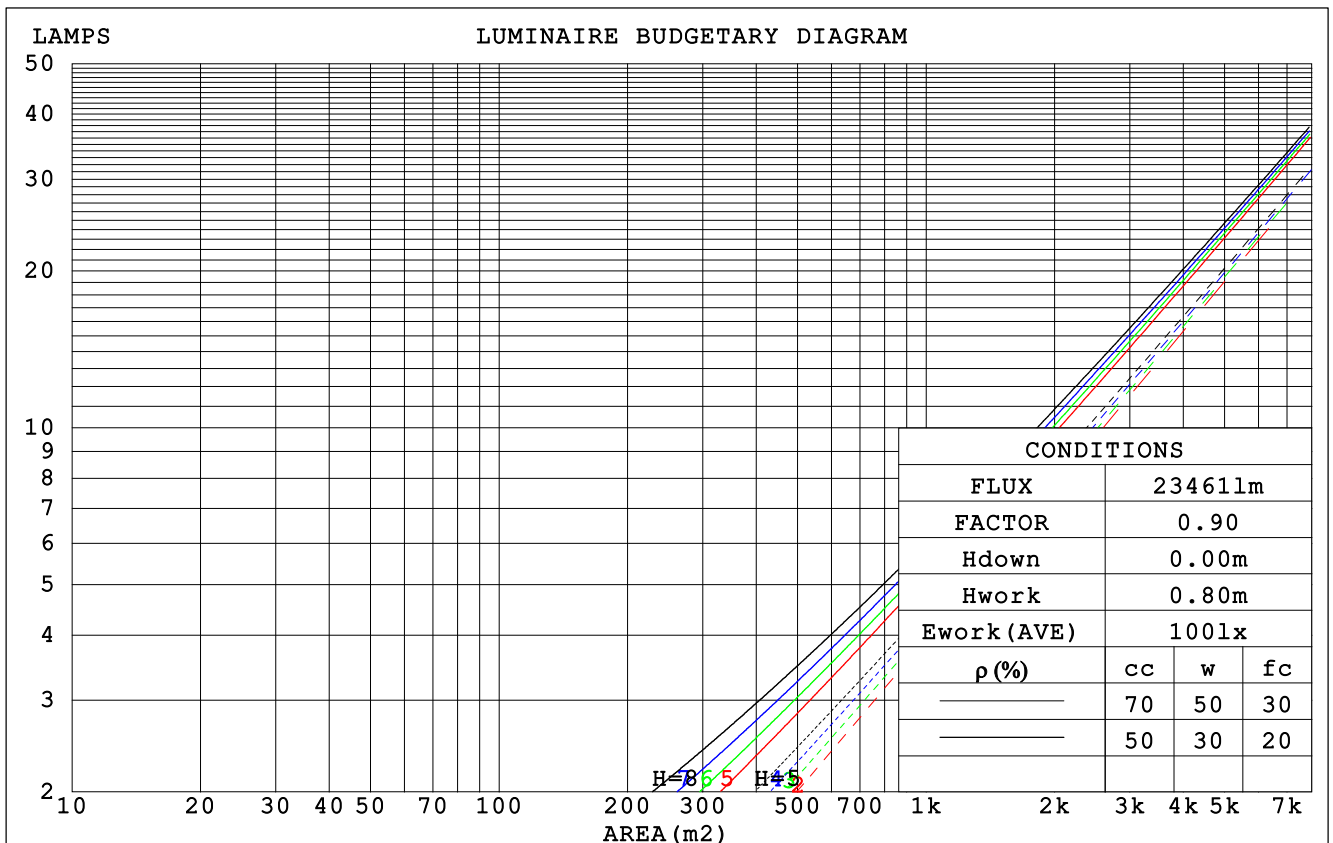
Checker:

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	1.00
1.0	1.06	1.02	.99	1.04	1.01	.97	.00	.97	.94	.96	.94	.92	.92	.91	.89	.87
2.0	.94	.87	.82	.92	.86	.81	.88	.83	.79	.85	.81	.78	.82	.79	.76	.74
3.0	.82	.75	.69	.81	.74	.68	.78	.72	.67	.75	.70	.66	.73	.68	.65	.63
4.0	.73	.65	.58	.72	.64	.58	.69	.62	.57	.67	.61	.56	.65	.60	.56	.53
5.0	.65	.56	.50	.64	.56	.49	.62	.54	.49	.60	.53	.48	.58	.52	.48	.46
6.0	.58	.49	.43	.57	.49	.43	.55	.48	.42	.54	.47	.42	.52	.46	.42	.40
7.0	.52	.44	.37	.51	.43	.37	.50	.42	.37	.48	.42	.37	.47	.41	.36	.35
8.0	.47	.39	.33	.47	.38	.33	.45	.38	.33	.44	.37	.32	.43	.37	.32	.30
9.0	.43	.35	.29	.42	.35	.29	.41	.34	.29	.40	.34	.29	.39	.33	.29	.27
10.0	.39	.31	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.26	.24



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2017-09-26

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	.267	.152	.048	.260	.148	.047	.247	.141	.045	.235	.135	.043	.223	.130	.042		
2.0	.262	.143	.044	.256	.141	.043	.244	.136	.042	.234	.131	.041	.224	.127	.040		
3.0	.250	.133	.040	.245	.131	.039	.234	.127	.039	.225	.123	.038	.216	.120	.037		
4.0	.236	.123	.036	.231	.121	.036	.222	.118	.035	.214	.115	.035	.206	.112	.034		
5.0	.222	.113	.033	.218	.112	.033	.210	.109	.032	.202	.107	.032	.195	.104	.031		
6.0	.209	.105	.030	.205	.103	.030	.198	.101	.029	.191	.099	.029	.185	.097	.029		
7.0	.196	.097	.027	.193	.096	.027	.186	.094	.027	.180	.092	.027	.174	.091	.027		
8.0	.184	.090	.025	.181	.089	.025	.176	.088	.025	.170	.086	.025	.165	.085	.025		
9.0	.174	.084	.023	.171	.083	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023		
10.0	.164	.079	.022	.162	.078	.022	.157	.077	.022	.152	.076	.022	.148	.075	.021		

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	.168	.132	.102	.144	.114	.088	.099	.079	.061	.057	.046	.036	.018	.015	.012	
3.0	.161	.114	.077	.138	.098	.067	.095	.068	.047	.055	.040	.028	.018	.013	.009	
4.0	.154	.101	.060	.132	.087	.052	.091	.061	.037	.052	.036	.022	.017	.012	.007	
5.0	.147	.090	.048	.126	.078	.042	.087	.055	.030	.050	.032	.018	.016	.010	.006	
6.0	.141	.082	.040	.121	.071	.035	.083	.050	.025	.048	.029	.015	.016	.010	.005	
7.0	.134	.075	.034	.116	.065	.029	.080	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.128	.069	.029	.111	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.123	.065	.025	.106	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.060	.022	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-09-26

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	28.1	29.5	28.3	29.7	30.0	28.1	29.6	28.4	29.8	30.0
3H	28.2	29.5	28.5	29.8	30.0	28.3	29.7	28.6	29.9	30.1
4H	28.1	29.4	28.4	29.6	29.9	28.3	29.6	28.6	29.8	30.1
6H	28.0	29.2	28.3	29.4	29.7	28.3	29.5	28.7	29.8	30.1
8H	27.9	29.1	28.3	29.4	29.6	28.3	29.5	28.7	29.8	30.1
12H	27.9	29.0	28.2	29.3	29.6	28.3	29.4	28.7	29.7	30.0
4H 2H	28.2	29.5	28.5	29.7	30.0	28.2	29.5	28.6	29.8	30.0
3H	28.4	29.5	28.7	29.8	30.1	28.5	29.6	28.8	29.9	30.2
4H	28.3	29.3	28.7	29.6	29.9	28.5	29.5	28.9	29.9	30.2
6H	28.2	29.1	28.6	29.4	29.8	28.6	29.5	29.0	29.8	30.2
8H	28.2	29.0	28.6	29.3	29.7	28.7	29.5	29.1	29.8	30.2
12H	28.1	28.9	28.6	29.2	29.6	28.7	29.4	29.1	29.8	30.2
8H 4H	28.2	29.0	28.6	29.4	29.7	28.5	29.3	28.9	29.6	30.0
6H	28.1	28.8	28.6	29.2	29.6	28.6	29.2	29.0	29.6	30.1
8H	28.1	28.7	28.6	29.1	29.5	28.6	29.2	29.1	29.6	30.1
12H	28.1	28.6	28.5	29.0	29.5	28.7	29.2	29.2	29.7	30.1
12H 4H	28.2	28.9	28.6	29.3	29.7	28.4	29.1	28.8	29.5	29.9
6H	28.1	28.7	28.6	29.1	29.6	28.5	29.1	29.0	29.5	30.0
8H	28.1	28.6	28.5	29.0	29.5	28.6	29.1	29.1	29.6	30.0
Variations with the observer position at spacings:										
S = 1.0H	+ 0.7 / - 0.8					+ 0.5 / - 0.6				
1.5H	+ 0.6 / - 1.7					+ 0.6 / - 1.4				
2.0H	+ 1.9 / - 2.4					+ 1.6 / - 2.2				

CIE Pub.117 Corrected 23461 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.0)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-09-26

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) $k(RI) \times RCR = 5$									
$k = 0.60$	56	44	37	55	44	37	54	44	37	30
0.80	68	56	49	67	56	49	65	55	48	41
1.00	78	67	60	77	67	60	75	68	59	53
1.25	86	76	69	84	75	69	82	74	68	61
1.50	91	82	75	89	81	75	86	79	74	67
2.00	98	90	84	96	89	84	93	87	82	75
2.50	101	94	89	99	93	88	96	90	86	78
3.00	104	98	93	102	97	92	98	94	90	82
4.00	108	103	99	105	101	97	101	98	94	86
5.00	110	105	102	107	103	100	103	100	97	88
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

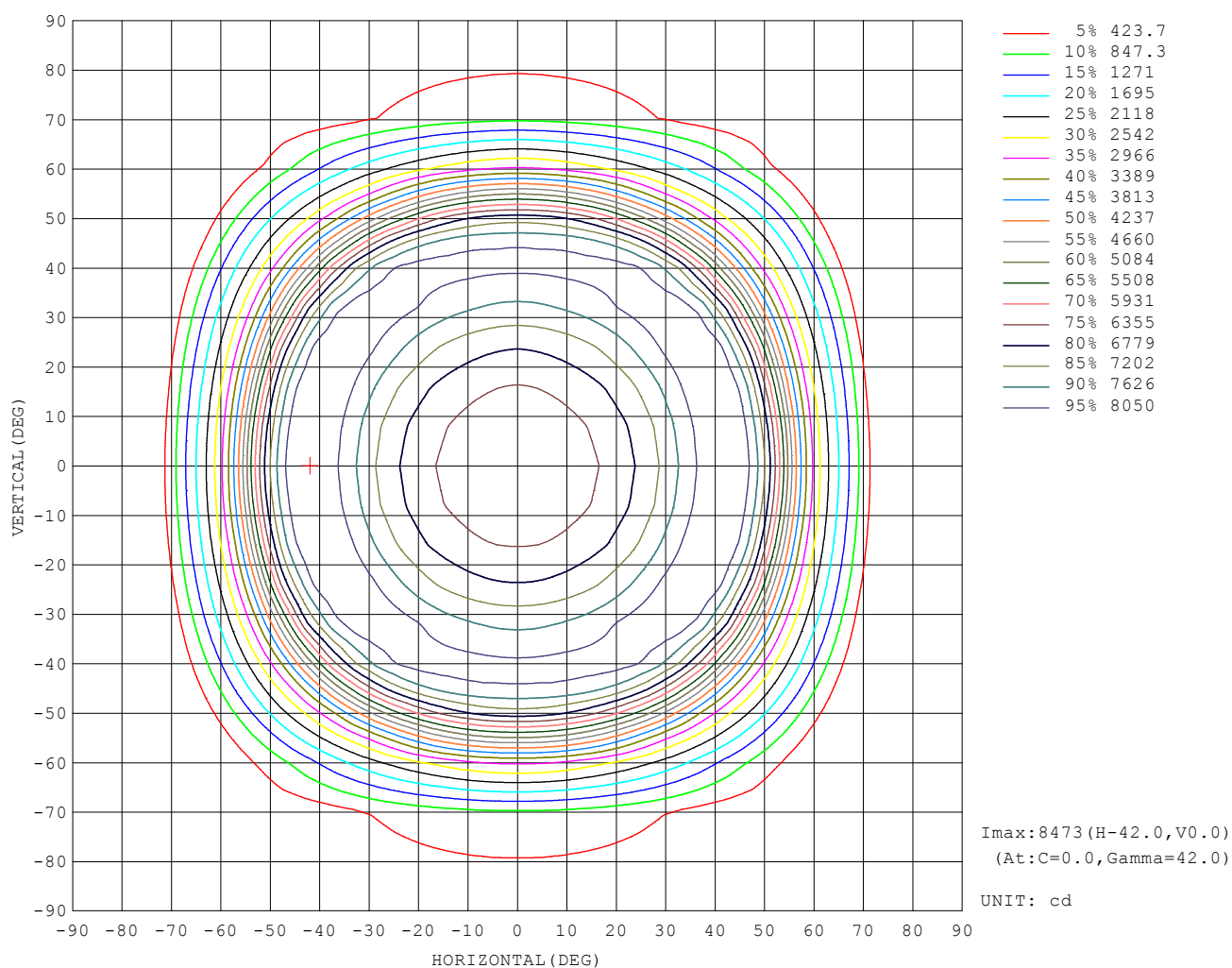
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

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



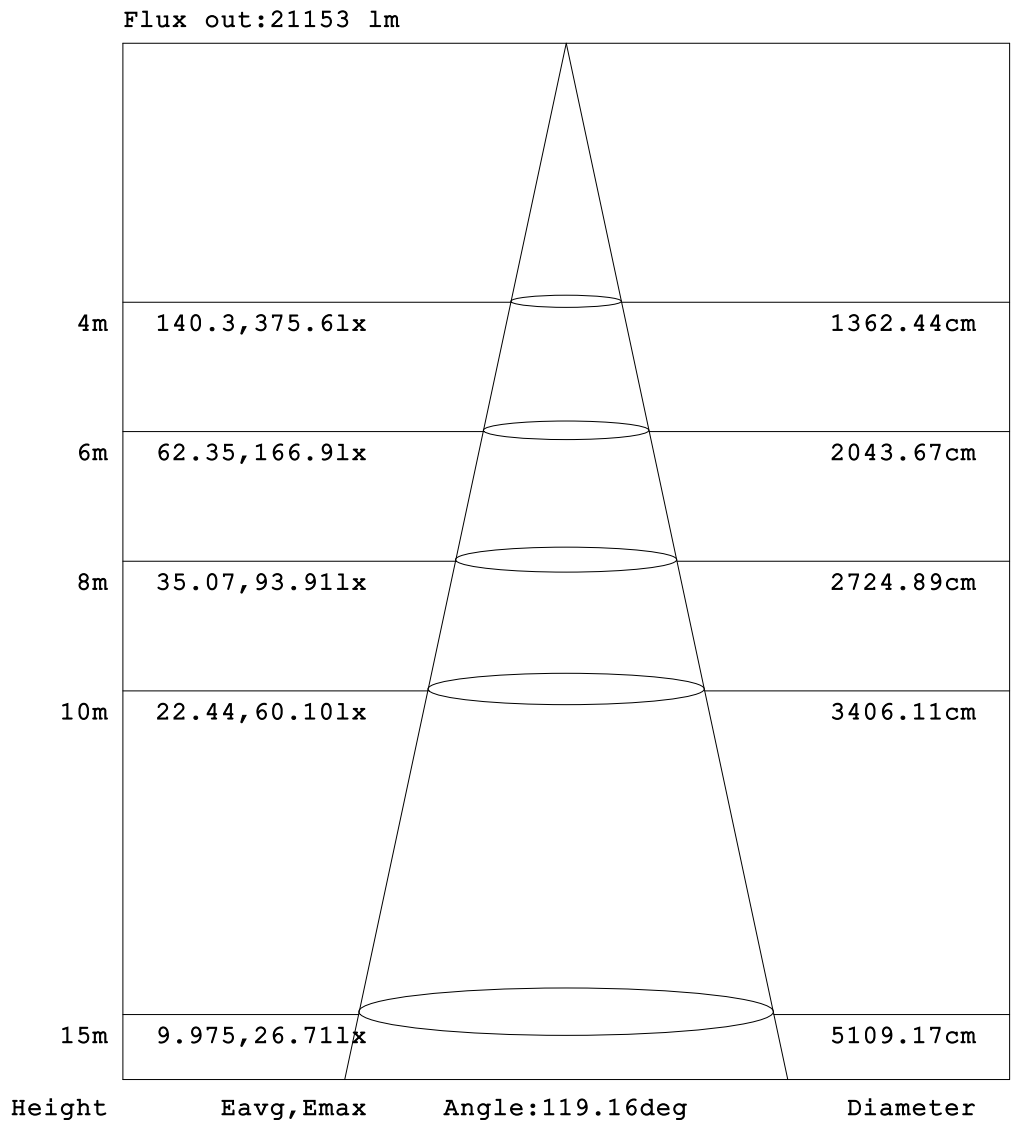
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

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.

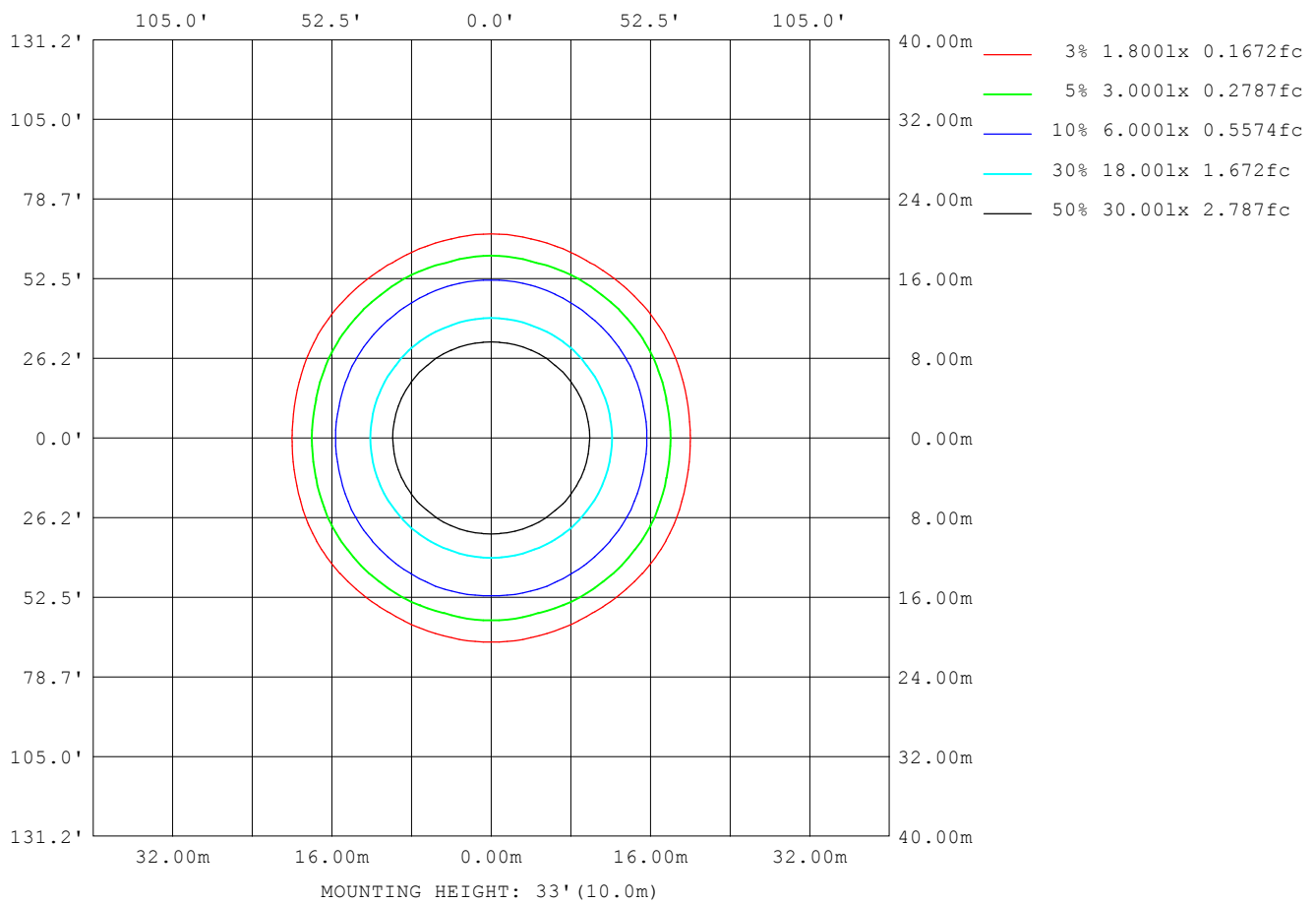
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2017-09-26

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



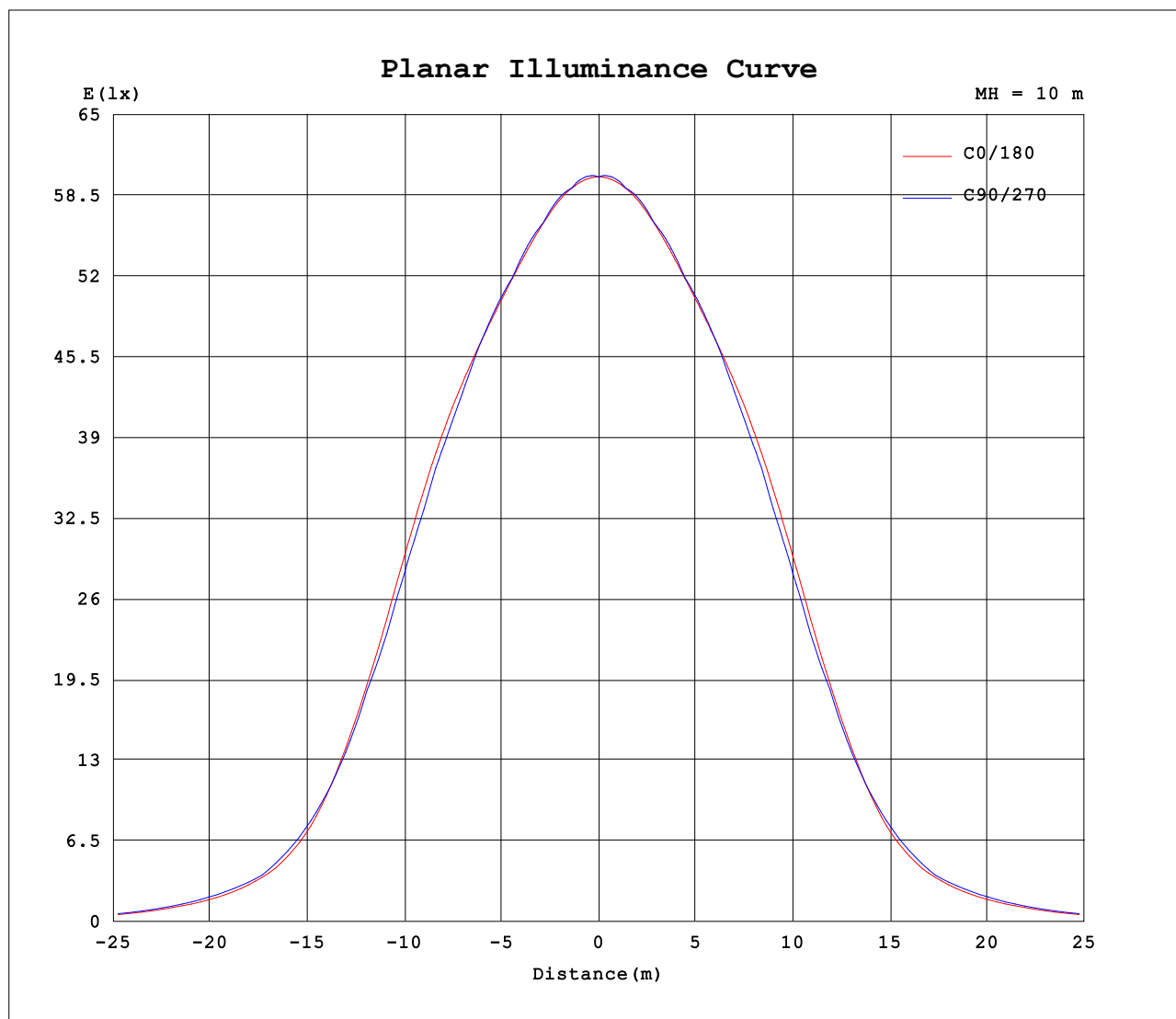
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2017-09-26

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: 2017-09-26

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: