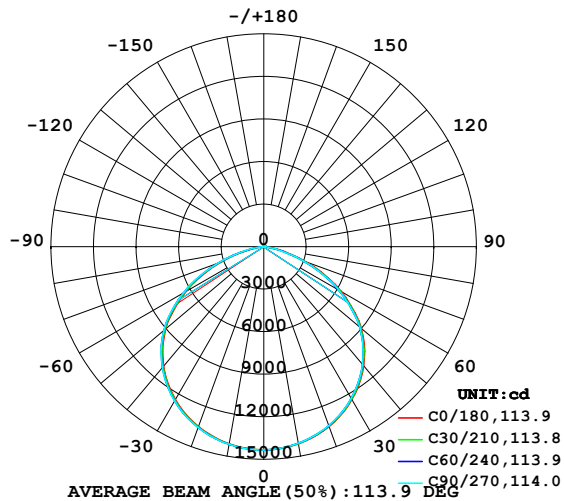


LUMINAIRE PHOTOMETRIC TEST REPORT

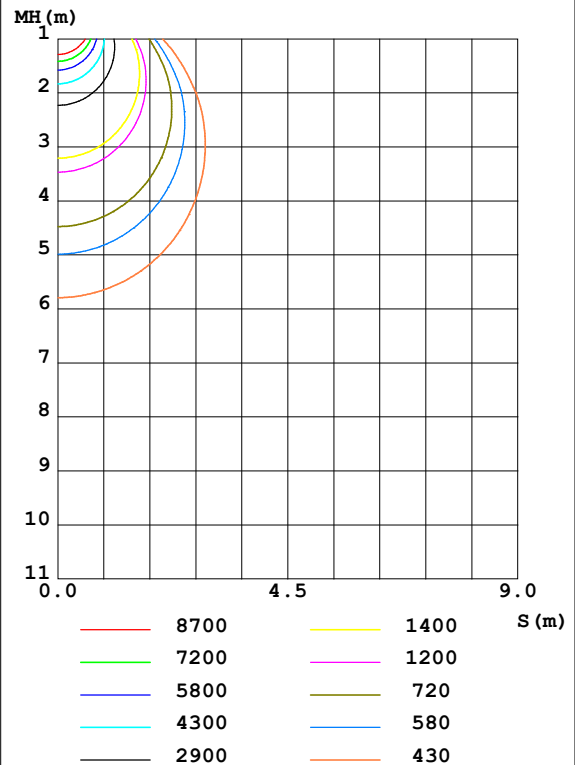
Test:U:229.6V I:1.313A P:296.5W PF:0.9833 Lamp Flux:40406.6x1 lm		
NAME: HB08-300	TYPE:300W	WEIGHT:
SPEC.:5000K Ra70 120DEG H00A02	DIM.: 0.39*0.39*0.12	SERIAL No.:
MFR.:	SUR.:0.23*0.23	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 136.29 lm/W			
MODEL	HB08-300	I _{max} (cd)	14334	S/MH(C0/180)	1.29
NOMINAL POWER(W)	300	LOR(%)	100.0	S/MH(C90/270)	1.30
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	40407	η UP,DN(C0-180)	0.4,48.8
NOMINAL FLUX(lm)	40406.6	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.4,50.4
LAMPS INSIDE	1	η up(%)	0.8	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	η down(%)	99.2	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2016-06-14

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [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
10	1411	1409	1408	1409	1412	1414	1415	1414	0- 10	1357	1357	3.36, 3.36
20	1349	1345	1343	1344	1350	1355	1357	1355	10- 20	3914	5271	13, 13
30	1245	1238	1235	1237	1247	1254	1257	1254	20- 30	6009	11280	27.9, 27.9
40	1097	1087	1084	1086	1099	1109	1113	1110	30- 40	7366	18646	46.1, 46.1
50	900.6	888.4	883.9	887.8	904.0	916.6	921.3	916.7	40- 50	7756	26402	65.3, 65.3
60	627.9	613.7	610.3	615.9	635.0	650.2	655.2	648.2	50- 60	6887	33289	82.4, 82.4
70	318.0	303.1	298.4	306.9	325.6	343.0	346.6	340.2	60- 70	4739	38029	94.1, 94.1
80	55.82	46.76	44.39	48.84	61.55	71.56	73.90	68.79	70- 80	1913	39942	98.8, 98.8
90	1.128	1.169	1.180	1.161	1.063	1.027	1.017	1.034	80- 90	139.6	40081	99.2, 99.2
100	2.126	2.193	2.216	2.186	2.045	1.983	1.965	1.996	90-100	17.02	40098	99.2, 99.2
110	3.456	3.535	3.567	3.532	3.351	3.273	3.253	3.291	100-110	28.81	40127	99.3, 99.3
120	4.890	4.975	5.012	4.979	4.777	4.691	4.672	4.713	110-120	40.81	40168	99.4, 99.4
130	6.356	6.446	6.481	6.453	6.240	6.151	6.126	6.173	120-130	49.83	40218	99.5, 99.5
140	7.746	7.828	7.859	7.841	7.646	7.567	7.539	7.584	130-140	54.20	40272	99.7, 99.7
150	8.921	8.990	9.022	9.013	8.847	8.786	8.754	8.790	140-150	52.08	40324	99.8, 99.8
160	9.869	9.921	9.953	9.943	9.834	9.786	9.765	9.784	150-160	43.35	40367	99.9, 99.9
170	10.59	10.62	10.65	10.63	10.58	10.55	10.54	10.54	160-170	28.92	40396	100, 100
180	10.88	10.90	10.91	10.89	10.91	10.89	10.89	10.89	170-180	10.25	40407	100, 100
DEG	LUMINOUS INTENSITY: $\times 10\text{cd}$									UNIT: lm		

Conical surface Flux(90deg): 23323 lm

%lum = 57.7%

%lamp = 57.7%

Conical surface Flux(120deg): 33289 lm

%lum = 82.4%

%lamp = 82.4%

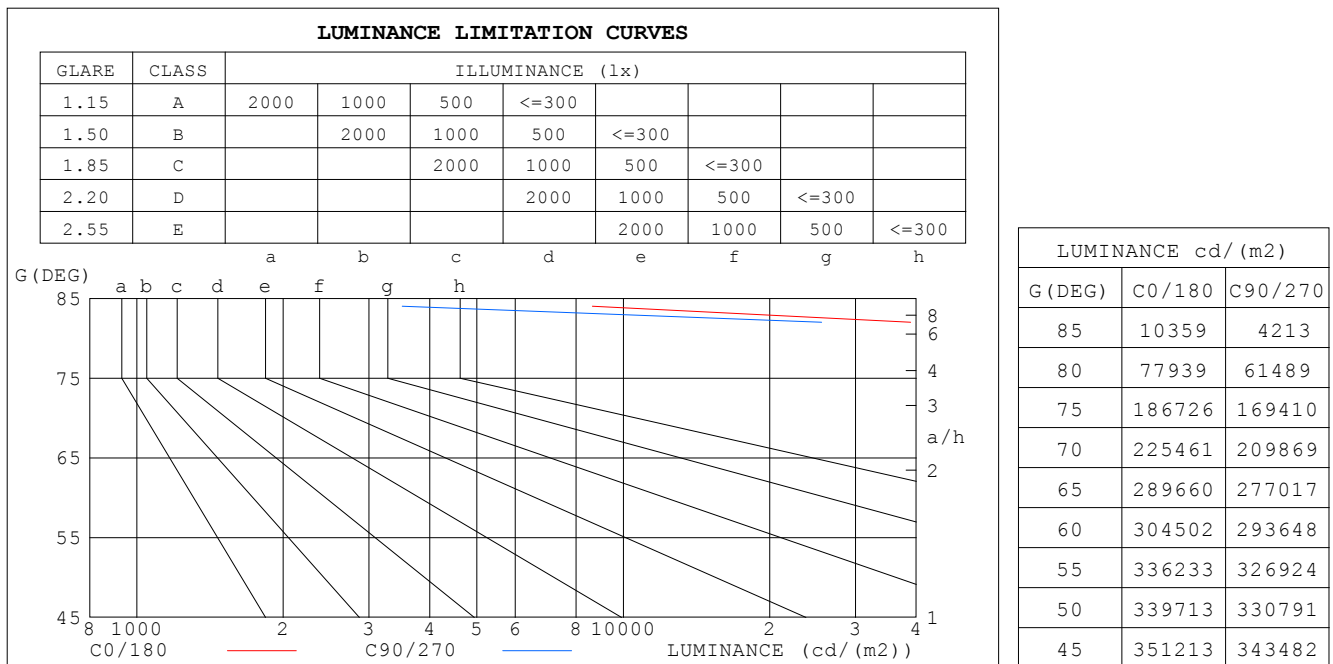
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2016-06-14

Checker:

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.470m [K=1.0000]
 Remarks:

Assessor:

LUMINANCE LIMITATION CURVES



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2016-06-14

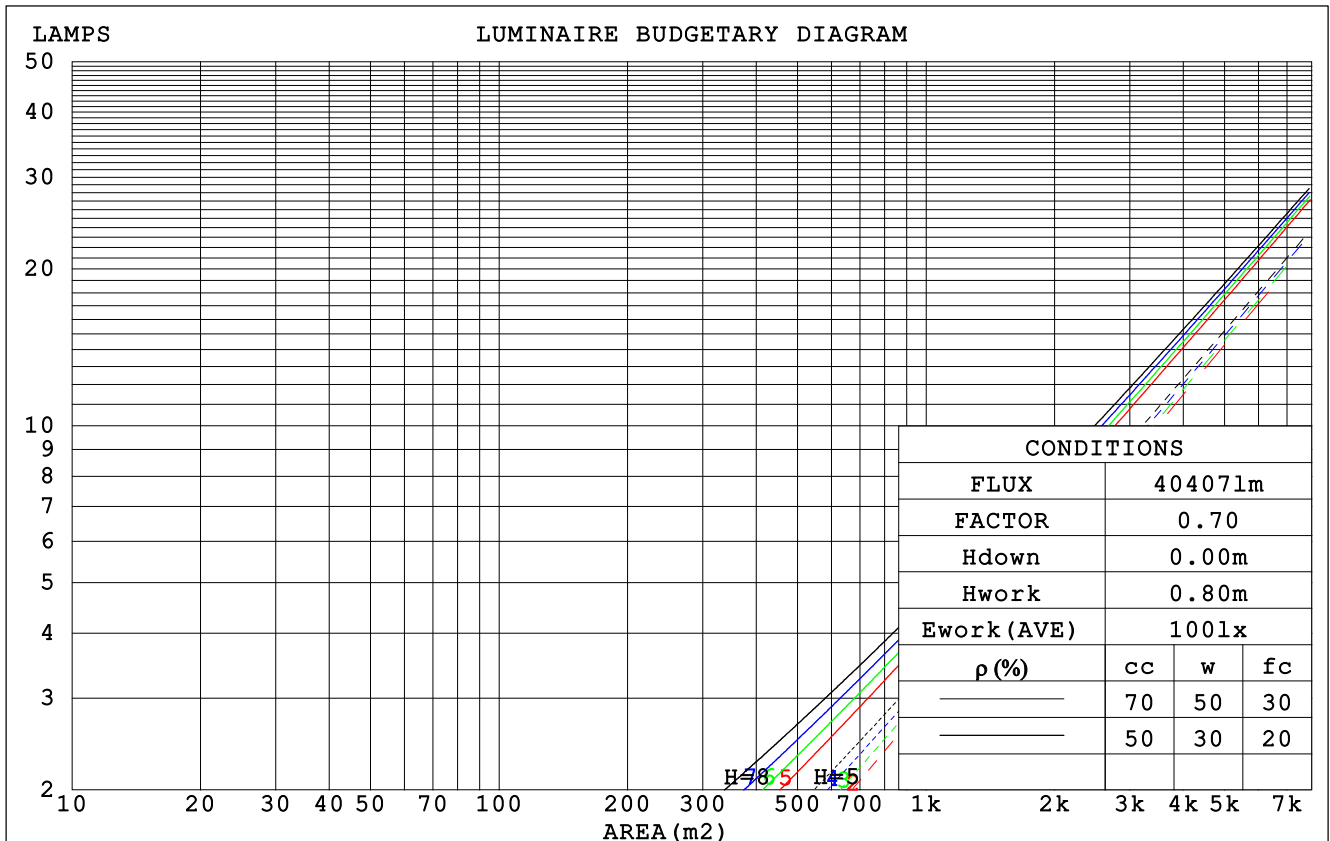
γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

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	1.01	1.01	1.01	.99
1.0	1.05	1.01	.98	1.03	.99	.96	.98	.95	.93	.94	.92	.90	.91	.89	.87	.85
2.0	.92	.86	.80	.90	.84	.79	.86	.82	.77	.83	.79	.75	.80	.77	.74	.71
3.0	.81	.73	.67	.79	.72	.66	.76	.70	.65	.74	.68	.64	.71	.66	.63	.60
4.0	.72	.63	.57	.70	.62	.56	.68	.61	.55	.65	.59	.55	.63	.58	.54	.52
5.0	.64	.55	.49	.63	.55	.49	.61	.54	.48	.59	.52	.47	.57	.51	.47	.45
6.0	.58	.49	.43	.57	.48	.42	.55	.47	.42	.53	.47	.41	.51	.46	.41	.39
7.0	.52	.44	.38	.51	.43	.37	.50	.42	.37	.48	.42	.37	.47	.41	.36	.34
8.0	.48	.39	.33	.47	.39	.33	.46	.38	.33	.44	.38	.33	.43	.37	.33	.31
9.0	.44	.36	.30	.43	.35	.30	.42	.35	.30	.41	.34	.30	.40	.34	.29	.28
10.0	.40	.32	.27	.40	.32	.27	.39	.32	.27	.38	.31	.27	.37	.31	.27	.25



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2016-06-14

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.470m [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	.282	.161	.051	.275	.157	.050	.262	.150	.048	.249	.144	.046	.238	.138	.044	
2.0	.274	.150	.046	.268	.148	.045	.256	.142	.044	.245	.137	.043	.235	.133	.042	
3.0	.258	.137	.041	.252	.135	.041	.242	.131	.040	.232	.127	.039	.223	.123	.038	
4.0	.241	.125	.037	.236	.123	.036	.226	.120	.036	.218	.117	.035	.209	.114	.035	
5.0	.224	.114	.033	.220	.113	.033	.211	.110	.032	.204	.107	.032	.196	.105	.032	
6.0	.209	.105	.030	.205	.104	.030	.198	.101	.029	.191	.099	.029	.184	.097	.029	
7.0	.195	.097	.027	.192	.096	.027	.185	.094	.027	.179	.092	.027	.173	.090	.026	
8.0	.183	.089	.025	.180	.088	.025	.174	.087	.025	.168	.085	.025	.163	.084	.024	
9.0	.172	.083	.023	.169	.082	.023	.164	.081	.023	.158	.079	.023	.154	.078	.023	
10.0	.162	.078	.022	.159	.077	.021	.154	.076	.021	.150	.074	.021	.145	.073	.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	.197	.197	.197	.168	.168	.168	.115	.115	.115	.066	.066	.066	.021	.021	.021	
1.0	.185	.163	.143	.158	.140	.123	.108	.096	.085	.062	.056	.049	.020	.018	.016	
2.0	.176	.138	.106	.151	.119	.092	.103	.082	.064	.060	.048	.038	.019	.015	.012	
3.0	.168	.120	.082	.144	.104	.071	.099	.072	.050	.057	.042	.029	.018	.014	.010	
4.0	.161	.107	.066	.138	.093	.057	.095	.064	.040	.055	.038	.024	.018	.012	.008	
5.0	.154	.097	.054	.132	.084	.047	.091	.058	.033	.053	.034	.020	.017	.011	.007	
6.0	.147	.088	.046	.126	.076	.040	.087	.054	.028	.051	.031	.017	.016	.010	.006	
7.0	.140	.081	.040	.121	.071	.035	.083	.049	.025	.048	.029	.015	.016	.010	.005	
8.0	.134	.076	.035	.115	.066	.031	.080	.046	.022	.046	.027	.013	.015	.009	.004	
9.0	.128	.071	.032	.110	.061	.028	.077	.043	.020	.045	.025	.012	.014	.008	.004	
10.0	.123	.066	.029	.106	.058	.025	.073	.041	.018	.043	.024	.011	.014	.008	.004	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2016-06-14

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [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	33.0	34.4	33.2	34.7	34.9	32.8	34.3	33.1	34.5	34.7
3H	34.1	35.4	34.4	35.7	35.9	33.9	35.2	34.2	35.5	35.7
4H	34.3	35.6	34.6	35.9	36.1	34.1	35.4	34.4	35.6	35.9
6H	34.3	35.5	34.7	35.8	36.1	34.1	35.3	34.4	35.6	35.9
8H	34.3	35.5	34.6	35.8	36.1	34.0	35.2	34.4	35.5	35.8
12H	34.2	35.4	34.6	35.7	36.0	34.0	35.1	34.3	35.4	35.7
4H 2H	33.4	34.7	33.8	35.0	35.3	33.3	34.6	33.6	34.9	35.1
3H	34.7	35.8	35.0	36.1	36.4	34.5	35.6	34.8	35.9	36.2
4H	35.0	36.0	35.4	36.3	36.7	34.7	35.8	35.1	36.1	36.4
6H	35.0	35.9	35.4	36.3	36.7	34.8	35.7	35.2	36.0	36.4
8H	35.0	35.8	35.4	36.2	36.6	34.7	35.6	35.2	36.0	36.4
12H	34.9	35.7	35.4	36.1	36.5	34.7	35.5	35.1	35.9	36.3
8H 4H	35.0	35.8	35.4	36.2	36.6	34.8	35.6	35.2	36.0	36.4
6H	35.1	35.8	35.6	36.2	36.6	34.9	35.5	35.3	36.0	36.4
8H	35.1	35.7	35.5	36.1	36.6	34.8	35.4	35.3	35.9	36.3
12H	35.0	35.5	35.5	36.0	36.5	34.8	35.3	35.3	35.8	36.3
12H 4H	35.0	35.7	35.4	36.1	36.6	34.8	35.5	35.2	35.9	36.3
6H	35.1	35.7	35.5	36.1	36.6	34.8	35.4	35.3	35.9	36.3
8H	35.0	35.6	35.5	36.0	36.5	34.8	35.3	35.3	35.8	36.3
Variations with the observer position at spacings:										
S = 1.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.3				
1.5H	+ 0.2 / - 0.5					+ 0.3 / - 0.5				
2.0H	+ 0.5 / - 0.5					+ 0.5 / - 0.5				

CIE Pub.117 Corrected 40407 lm Total Lamp Luminous Flux.(8log(F/F0) = 12.9)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2016-06-14

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [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) $k(RI) \times RCR = 5$									
$k = 0.60$	58	47	40	57	46	40	56	46	39	33
0.80	68	57	50	67	57	50	66	56	49	42
1.00	77	66	59	76	66	59	74	67	58	51
1.25	84	74	67	83	74	67	80	72	66	59
1.50	89	80	73	88	79	73	85	77	72	64
2.00	96	88	82	94	87	81	91	85	80	72
2.50	100	93	87	98	91	86	94	89	84	76
3.00	103	97	92	101	95	91	97	92	88	80
4.00	107	102	98	105	100	96	100	97	93	85
5.00	109	105	101	107	103	100	102	99	96	87
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

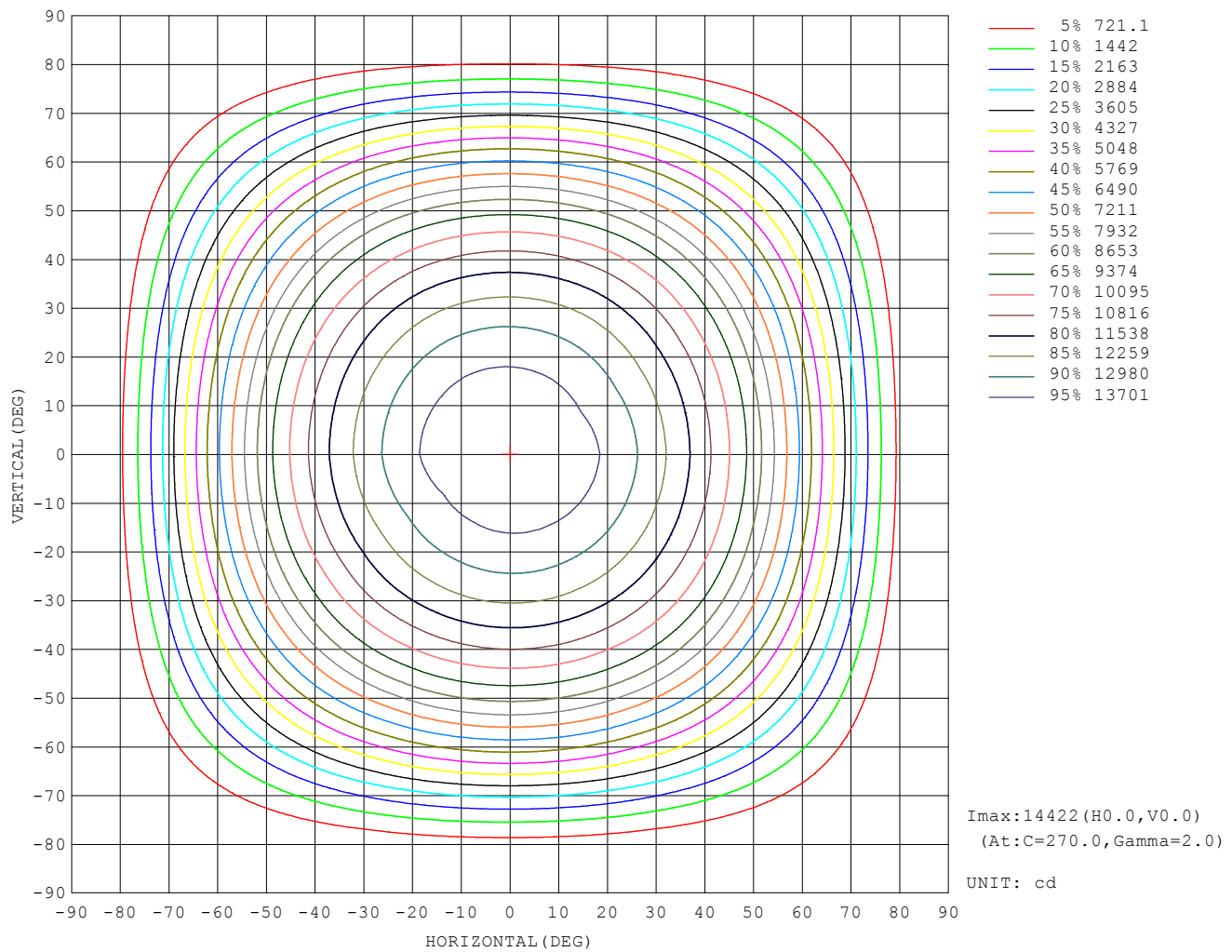
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2016-06-14

Checker:

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.470m [K=1.0000]
 Remarks:

Assessor:

ISOCANDELA DIAGRAM



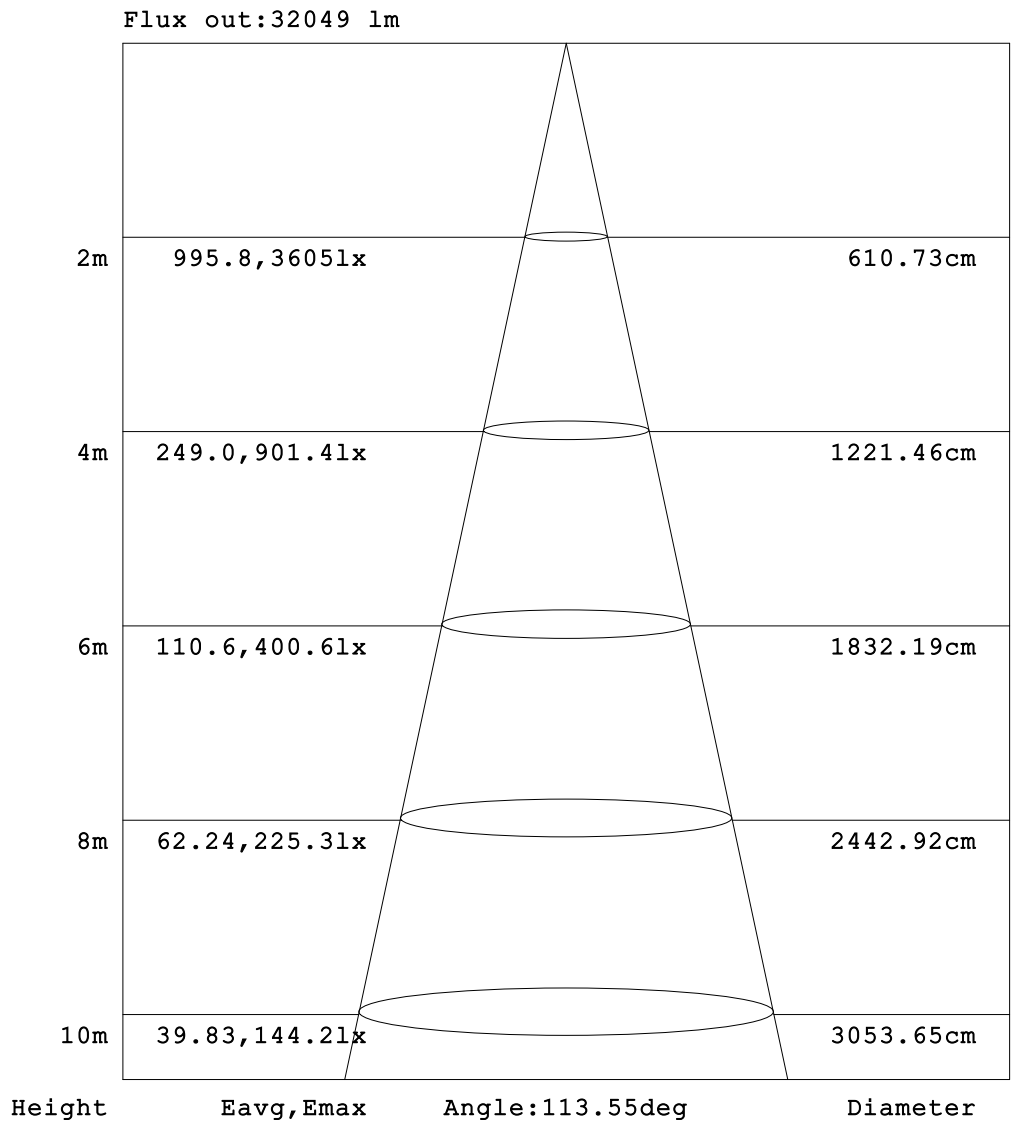
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2016-06-14

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [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.

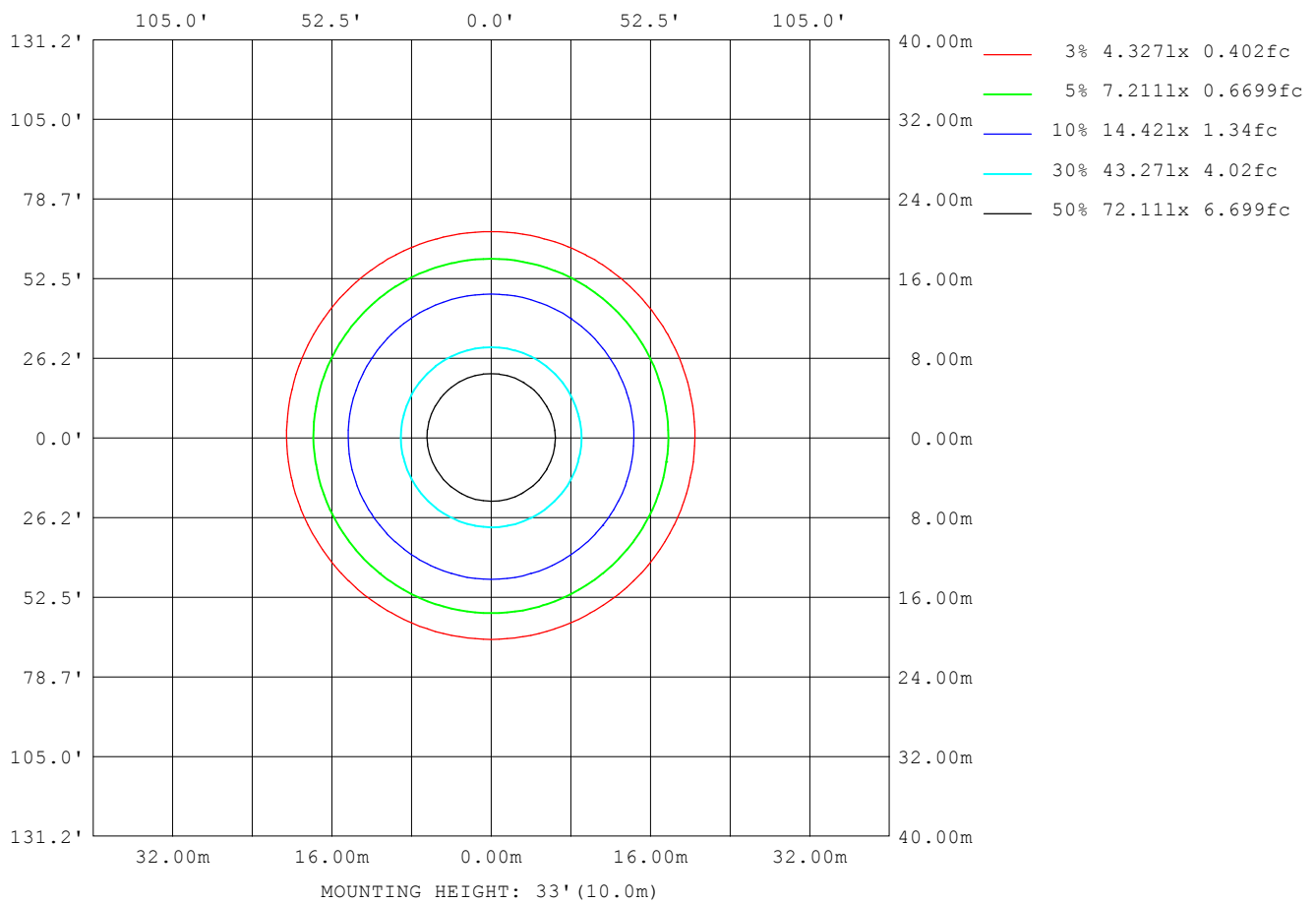
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2016-06-14

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Checker:

Assessor:

ISOLUX DIAGRAM



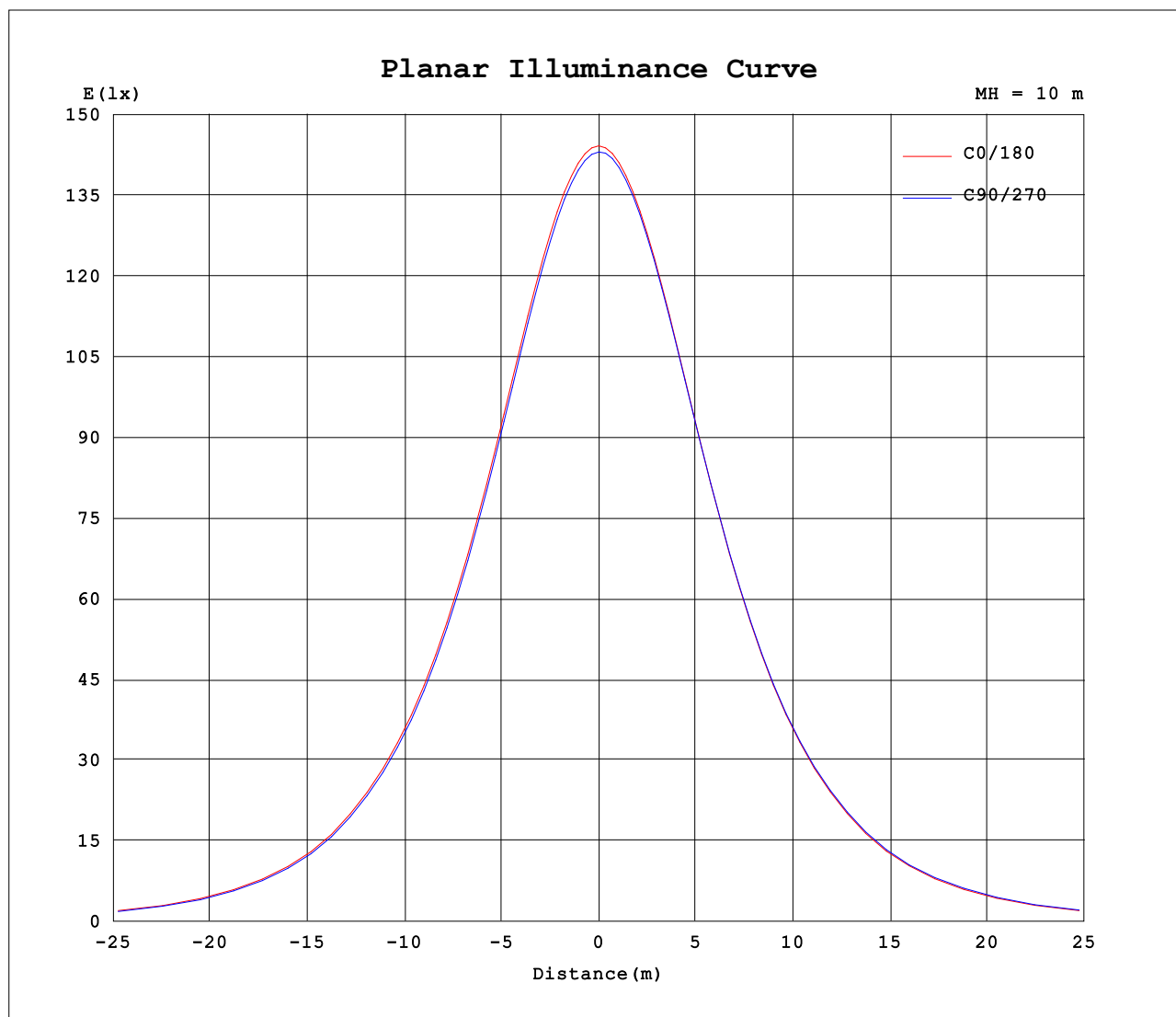
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2016-06-14

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Checker:

Assessor:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2016-06-14

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Checker:

Assessor:

LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: ×10cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	1433	1433	1433	1433	1433	1433	1433	1433	1433	1433	1433	1433						
5	1429	1428	1428	1428	1428	1428	1429	1430	1431	1431	1431	1430						
10	1411	1409	1408	1408	1408	1409	1412	1414	1415	1415	1415	1413						
15	1391	1389	1387	1387	1386	1389	1392	1394	1397	1397	1397	1394						
20	1349	1346	1343	1343	1343	1346	1350	1353	1357	1357	1357	1354						
25	1313	1309	1305	1305	1305	1308	1314	1318	1322	1322	1322	1318						
30	1245	1240	1235	1235	1235	1239	1247	1252	1256	1257	1257	1252						
35	1191	1186	1180	1180	1180	1185	1193	1199	1204	1205	1204	1199						
40	1097	1091	1084	1084	1083	1090	1099	1106	1112	1113	1113	1106						
45	1024	1017	1010	1010	1010	1017	1027	1034	1042	1042	1042	1035						
50	901	892	884	884	884	892	904	912	921	921	921	912						
55	795	786	778	779	780	790	803	811	822	821	818	808						
60	628	618	609	610	611	621	635	645	655	655	654	643						
65	505	495	485	487	488	500	514	526	536	535	533	520						
70	318	307	299	298	302	312	326	338	348	347	346	334						
75	199	189	183	182	185	194	207	217	226	225	223	213						
80	55.8	49.4	44.2	44.4	45.5	52.2	61.5	68.4	74.7	73.9	72.8	64.8						
85	3.72	2.15	1.62	1.53	1.74	2.86	5.19	7.57	9.99	18.0	9.61	6.75						
90	1.13	1.16	1.18	1.18	1.18	1.15	1.06	1.04	1.02	1.02	1.02	1.05						
95	1.48	1.52	1.55	1.54	1.54	1.50	1.40	1.37	1.34	1.35	1.35	1.38						
100	2.13	2.18	2.21	2.22	2.20	2.17	2.04	2.00	1.97	1.96	1.98	2.01						
105	2.63	2.68	2.72	2.73	2.72	2.67	2.53	2.48	2.45	2.45	2.46	2.50						
110	3.46	3.52	3.55	3.57	3.55	3.51	3.35	3.29	3.25	3.25	3.27	3.32						
115	4.03	4.09	4.13	4.14	4.13	4.09	3.92	3.85	3.82	3.82	3.83	3.88						
120	4.89	4.96	5.00	5.01	5.00	4.96	4.78	4.71	4.67	4.67	4.69	4.74						
125	5.47	5.54	5.58	5.60	5.59	5.55	5.36	5.29	5.25	5.25	5.26	5.32						
130	6.36	6.43	6.47	6.48	6.47	6.43	6.24	6.17	6.13	6.13	6.15	6.20						
135	6.94	7.01	7.04	7.06	7.05	7.01	6.82	6.75	6.72	6.71	6.73	6.78						
140	7.75	7.81	7.84	7.86	7.86	7.83	7.65	7.58	7.55	7.54	7.56	7.61						
145	8.24	8.31	8.33	8.35	8.35	8.32	8.15	8.09	8.07	8.05	8.07	8.11						
150	8.92	8.98	9.00	9.02	9.02	9.00	8.85	8.79	8.78	8.75	8.78	8.80						
155	9.33	9.38	9.40	9.42	9.43	9.41	9.27	9.22	9.21	9.19	9.20	9.23						
160	9.87	9.92	9.92	9.95	9.95	9.94	9.83	9.79	9.78	9.77	9.77	9.79						
165	10.2	10.2	10.2	10.3	10.3	10.2	10.2	10.1	10.1	10.1	10.1	10.1						
170	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.5	10.6	10.5	10.5	10.5						
175	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.7	10.8	10.7	10.8	10.7						
180	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2016-06-14

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Checker:

Assessor: