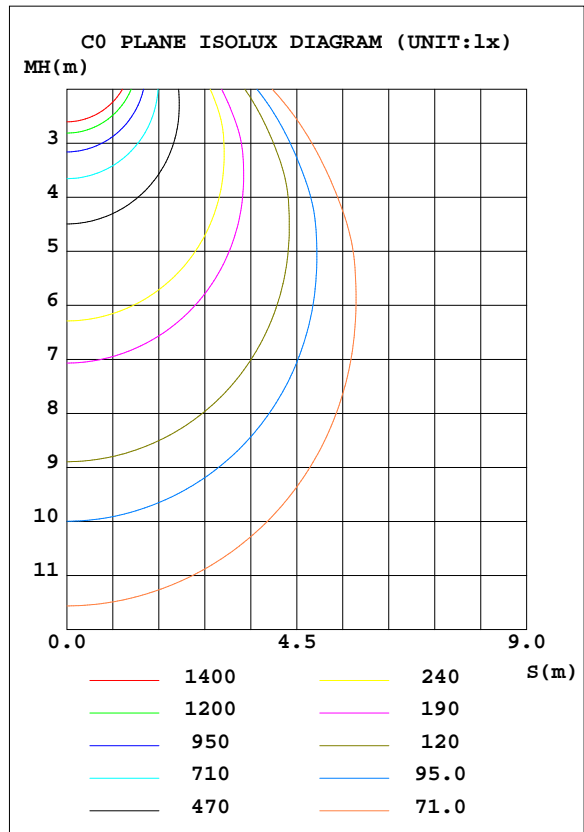
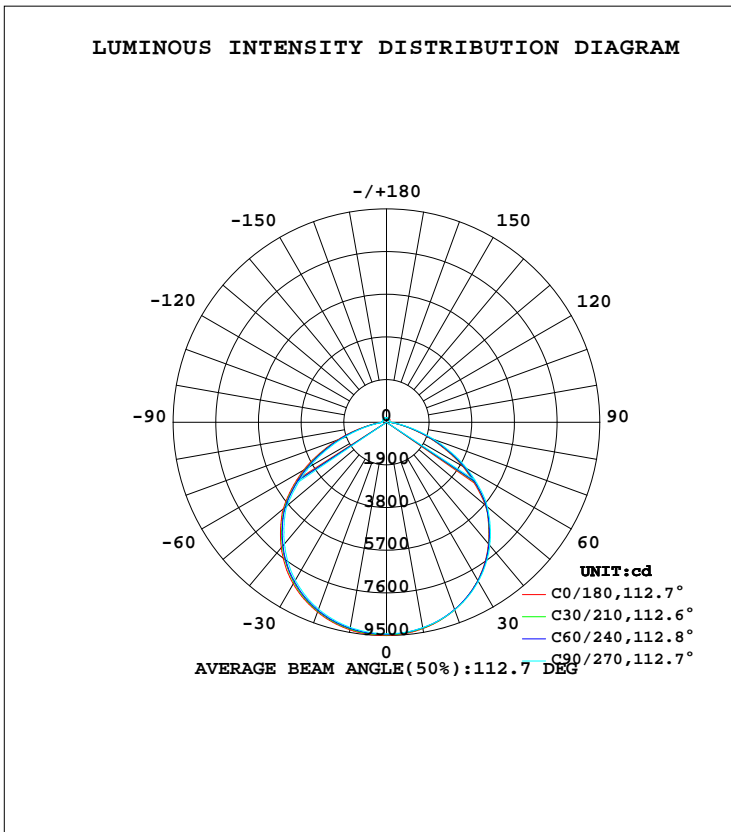


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:229.8V I:0.9060A P:202.4W PF:0.9710 Lamp Flux:27664.6x1 lm		
NAME: HB350-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 136.68 lm/W			
MODEL	HB350-200W	I _{max} (cd)	9494	S/MH(C0/180)	1.27
NOMINAL POWER(W)	200	LOR(%)	100.0	S/MH(C90/270)	1.29
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	27665	h UP, DN(C0-180)	1.9, 48.0
NOMINAL FLUX(lm)	27664.6	CIE CLASS	DIRECT	h UP, DN(C180-360)	2.2, 47.9
LAMPS INSIDE	1	h up(%)	4.1	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	229.9	h down(%)	95.9	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2015-06-13

gg Range: 0 - 180DEG
 gg Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.250m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum,lamp
10	9329	9301	9287	9271	9385	9331	9275	9237	0- 10	893.9	893.9	3.23,3.23
20	8884	8875	8887	8878	8989	8930	8857	8805	10- 20	2577	3471	12.5,12.5
30	8134	8147	8180	8188	8307	8223	8123	8069	20- 30	3948	7419	26.8,26.8
40	7059	7094	7158	7176	7291	7198	7079	7016	30- 40	4807	12226	44.2,44.2
50	5743	5785	5864	5903	6007	5897	5784	5704	40- 50	5020	17246	62.3,62.3
60	3918	4006	4135	4190	4258	4140	3971	3899	50- 60	4431	21677	78.4,78.4
70	2024	2108	2256	2318	2348	2226	2070	2019	60- 70	3071	24748	89.5,89.5
80	589.0	631.8	711.4	749.3	756.4	698.4	617.7	592.5	70- 80	1421	26170	94.6,94.6
90	179.5	169.2	162.4	162.6	176.9	175.6	179.2	185.9	80- 90	362.5	26532	95.9,95.9
100	174.6	174.0	175.9	178.0	200.1	197.7	193.8	191.4	90-100	207.3	26739	96.7,96.7
110	154.3	151.4	150.3	150.8	180.5	179.8	179.2	178.4	100-110	184.3	26924	97.3,97.3
120	151.7	147.3	142.4	141.2	175.3	176.9	178.4	179.0	110-120	161.2	27085	97.9,97.9
130	182.2	169.2	166.7	171.0	206.6	206.1	212.3	223.8	120-130	162.5	27247	98.5,98.5
140	161.3	160.4	157.5	156.8	190.9	191.9	190.9	189.2	130-140	138.9	27386	99,99
150	175.0	173.5	171.9	170.7	198.8	198.8	199.2	198.2	140-150	112.8	27499	99.4,99.4
160	190.5	189.4	188.0	186.7	207.5	207.0	207.0	206.3	150-160	88.56	27587	99.7,99.7
170	203.9	203.1	202.1	200.4	212.4	211.4	210.9	210.2	160-170	57.25	27645	99.9,99.9
180	212.2	211.7	210.7	209.7	212.7	211.6	210.2	209.7	170-180	19.91	27665	100,100
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			

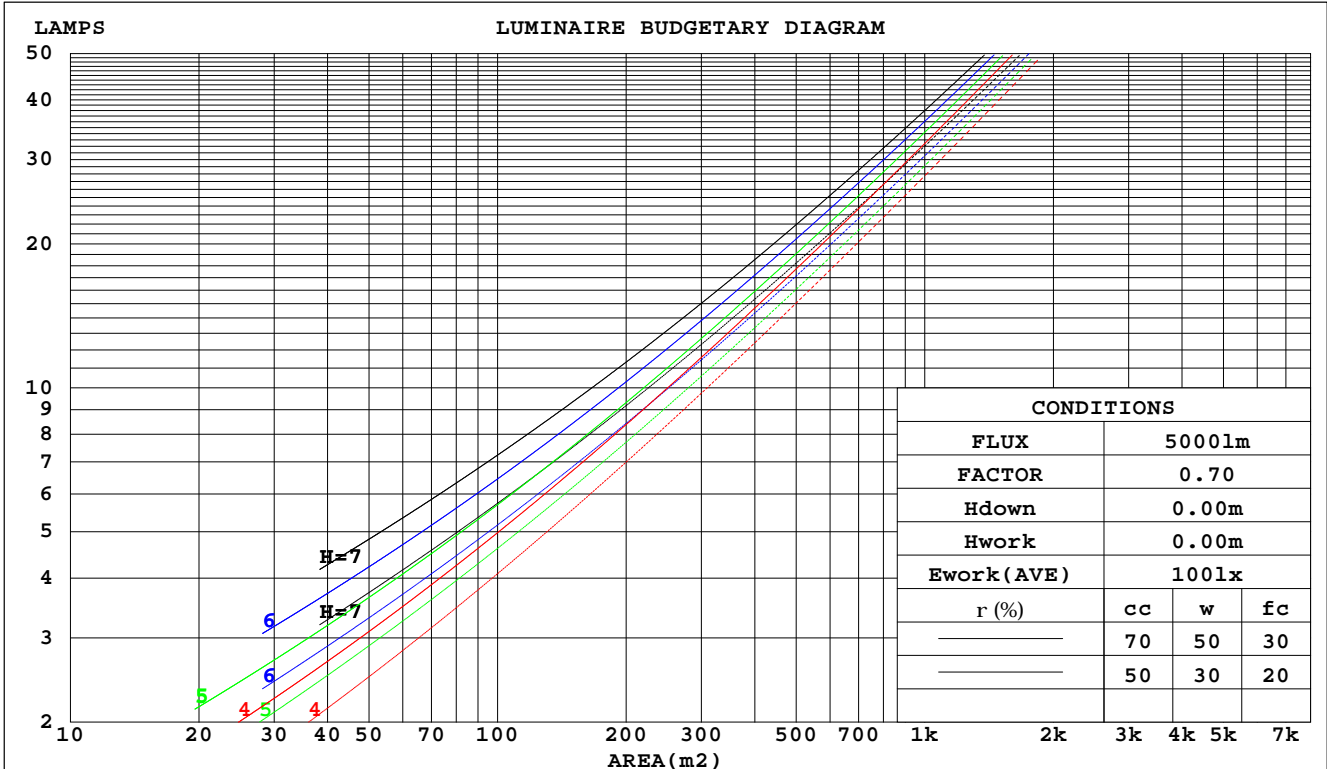
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2015-06-13

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.250m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:229.8V I:0.9060A P:202.4W PF:0.9710 Lamp Flux:27664.6x1 lm		
NAME: HB350-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

rcc	80%			70%			50%			30%			10%			0
r _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r _{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.18	1.18	1.18	1.15	1.15	1.15	1.09	1.09	1.09	1.03	1.03	1.03	.98	.98	.98	.96
1.0	1.04	.90	.96	1.01	.97	.94	.96	.93	.90	.92	.89	.87	.87	.85	.84	.81
2.0	.91	.84	.79	.89	.83	.77	.84	.79	.75	.80	.76	.73	.77	.74	.70	.68
3.0	.80	.72	.66	.78	.71	.65	.74	.68	.63	.71	.66	.61	.68	.64	.60	.58
4.0	.71	.62	.56	.69	.61	.55	.66	.59	.54	.63	.57	.53	.61	.56	.52	.49
5.0	.63	.54	.48	.62	.54	.47	.59	.52	.47	.57	.51	.46	.55	.49	.45	.43
6.0	.57	.48	.42	.56	.47	.41	.54	.46	.41	.51	.45	.40	.50	.44	.39	.37
7.0	.52	.43	.37	.51	.42	.37	.49	.41	.36	.47	.40	.35	.45	.39	.35	.33
8.0	.47	.39	.33	.46	.38	.33	.44	.37	.32	.43	.36	.32	.41	.36	.31	.29
9.0	.43	.35	.29	.42	.35	.29	.41	.34	.29	.39	.33	.29	.38	.32	.28	.26
10.0	.40	.32	.27	.39	.32	.26	.38	.31	.26	.37	.30	.26	.35	.30	.26	.24



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2015-06-13

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.250m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:229.8V I:0.9060A P:202.4W PF:0.9710 Lamp Flux:27664.6x1 lm		
NAME: HB350-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.293	.167	.053	.285	.163	.052	.270	.155	.049	.255	.147	.047	.242	.140	.045	
2.0	.279	.153	.047	.272	.150	.046	.258	.144	.045	.246	.138	.043	.234	.132	.042	
3.0	.261	.139	.042	.254	.136	.041	.242	.131	.040	.230	.126	.039	.220	.122	.038	
4.0	.242	.126	.037	.236	.124	.037	.225	.119	.036	.215	.115	.035	.206	.112	.034	
5.0	.225	.114	.033	.220	.113	.033	.210	.109	.032	.201	.106	.031	.192	.103	.031	
6.0	.209	.105	.030	.204	.103	.030	.196	.100	.029	.187	.097	.029	.180	.095	.028	
7.0	.195	.096	.027	.191	.095	.027	.183	.093	.027	.176	.090	.026	.169	.088	.026	
8.0	.183	.089	.025	.179	.088	.025	.172	.086	.024	.165	.084	.024	.158	.081	.024	
9.0	.171	.083	.023	.168	.082	.023	.161	.080	.023	.155	.078	.022	.149	.076	.022	
10.0	.161	.077	.021	.158	.076	.021	.152	.075	.021	.147	.073	.021	.141	.071	.020	

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.222	.222	.222	.189	.189	.189	.129	.129	.129	.074	.074	.074	.024	.024	.024	
1.0	.211	.188	.167	.180	.161	.144	.123	.111	.099	.071	.064	.058	.023	.021	.019	
2.0	.202	.164	.131	.173	.141	.113	.119	.097	.079	.068	.057	.046	.022	.018	.015	
3.0	.194	.146	.107	.167	.126	.093	.114	.088	.065	.066	.051	.039	.021	.017	.013	
4.0	.187	.133	.091	.160	.115	.079	.110	.080	.056	.064	.047	.033	.021	.015	.011	
5.0	.180	.122	.080	.154	.106	.070	.106	.074	.049	.062	.043	.029	.020	.014	.010	
6.0	.173	.114	.072	.149	.099	.063	.103	.069	.044	.059	.041	.026	.019	.013	.009	
7.0	.166	.107	.066	.143	.093	.057	.099	.065	.041	.057	.038	.024	.019	.013	.008	
8.0	.160	.102	.061	.138	.088	.054	.095	.062	.038	.055	.036	.023	.018	.012	.007	
9.0	.154	.097	.058	.133	.084	.050	.092	.059	.036	.054	.035	.021	.017	.011	.007	
10.0	.149	.092	.055	.128	.080	.048	.089	.056	.034	.052	.033	.020	.017	.011	.007	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2015-06-13

gg Range: 0 - 180DEG
 gg Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.250m [K=1.0000]
 Remarks:

Uncorrected UGR Table

Test:U:229.8V I:0.9060A P:202.4W PF:0.9710 Lamp Flux:27664.6x1 lm										
NAME: HB350-200W					TYPE:			WEIGHT:		
DIM.:					SPEC.:			SERIAL No.:		
MFR.:					SUR.:			PROTECTION ANGLE:		
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	28.0	29.5	28.4	29.7	30.0	28.2	29.6	28.5	29.9	30.2
3H	29.1	30.4	29.5	30.7	31.1	29.4	30.7	29.7	31.0	31.3
4H	29.4	30.7	29.8	31.0	31.3	29.7	31.0	30.1	31.3	31.7
6H	29.5	30.7	29.9	31.1	31.4	29.9	31.1	30.3	31.4	31.8
8H	29.6	30.7	30.0	31.0	31.4	30.0	31.1	30.4	31.4	31.8
12H	29.6	30.6	30.0	31.0	31.4	30.0	31.1	30.4	31.4	31.8
4H 2H	28.5	29.8	28.9	30.1	30.4	28.7	29.9	29.0	30.2	30.6
3H	29.8	30.9	30.2	31.2	31.6	30.0	31.1	30.4	31.4	31.8
4H	30.2	31.1	30.6	31.5	32.0	30.4	31.4	30.9	31.8	32.2
6H	30.4	31.2	30.8	31.7	32.1	30.7	31.6	31.2	32.0	32.4
8H	30.4	31.2	30.9	31.7	32.1	30.8	31.6	31.2	32.0	32.5
12H	30.4	31.2	30.9	31.6	32.1	30.8	31.5	31.3	32.0	32.5
8H 4H	30.3	31.1	30.7	31.5	32.0	30.5	31.3	31.0	31.8	32.2
6H	30.6	31.2	31.1	31.7	32.2	30.9	31.5	31.4	32.0	32.5
8H	30.7	31.2	31.2	31.7	32.3	31.0	31.6	31.5	32.1	32.6
12H	30.7	31.2	31.3	31.7	32.3	31.1	31.6	31.6	32.1	32.7
12H 4H	30.3	31.0	30.7	31.5	31.9	30.5	31.2	31.0	31.7	32.2
6H	30.6	31.2	31.1	31.7	32.2	30.9	31.5	31.4	32.0	32.5
8H	30.7	31.2	31.2	31.7	32.3	31.0	31.5	31.6	32.0	32.6
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
1.5H	+ 0.2 / - 0.5					+ 0.2 / - 0.4				
2.0H	+ 0.4 / - 0.4					+ 0.4 / - 0.4				

CIE Pub.117 Corrected 27665 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.5)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2015-06-13

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.250m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:229.8V I:0.9060A P:202.4W PF:0.9710 Lamp Flux:27664.6x1 lm		
NAME: HB350-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

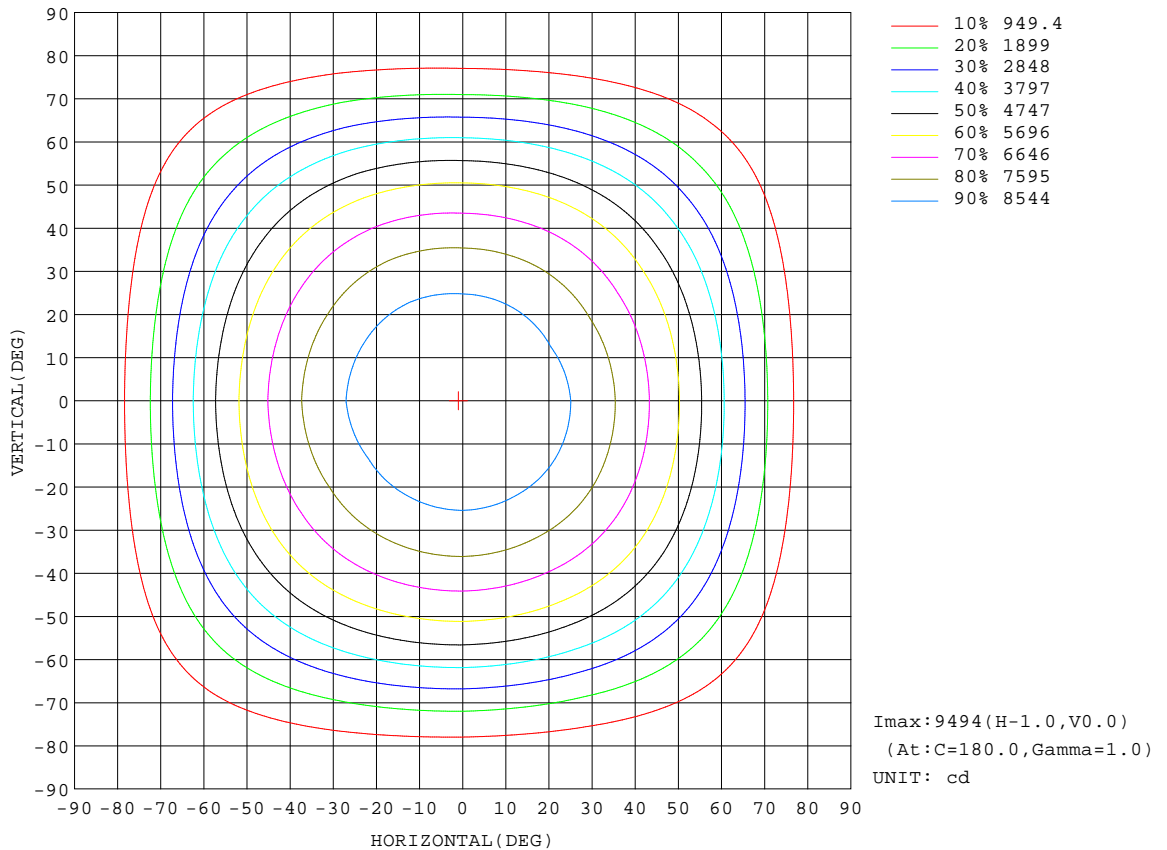
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	57	45	38	56	45	38	55	44	38	32
0.80	67	56	48	66	55	48	64	54	48	41
1.00	76	65	57	74	64	57	72	65	56	49
1.25	83	72	65	81	72	65	78	70	64	56
1.50	88	78	71	86	77	71	83	75	69	61
2.00	95	86	80	93	85	79	89	82	77	69
2.50	98	91	85	96	89	84	92	86	81	73
3.00	102	95	90	99	93	88	95	90	86	76
4.00	106	100	96	103	98	94	98	94	91	81
5.00	108	103	99	105	101	97	100	97	94	83
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHR NOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2015-06-13

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.250m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:229.8V I:0.9060A P:202.4W PF:0.9710 Lamp Flux:27664.6x1 lm		
NAME: HB350-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



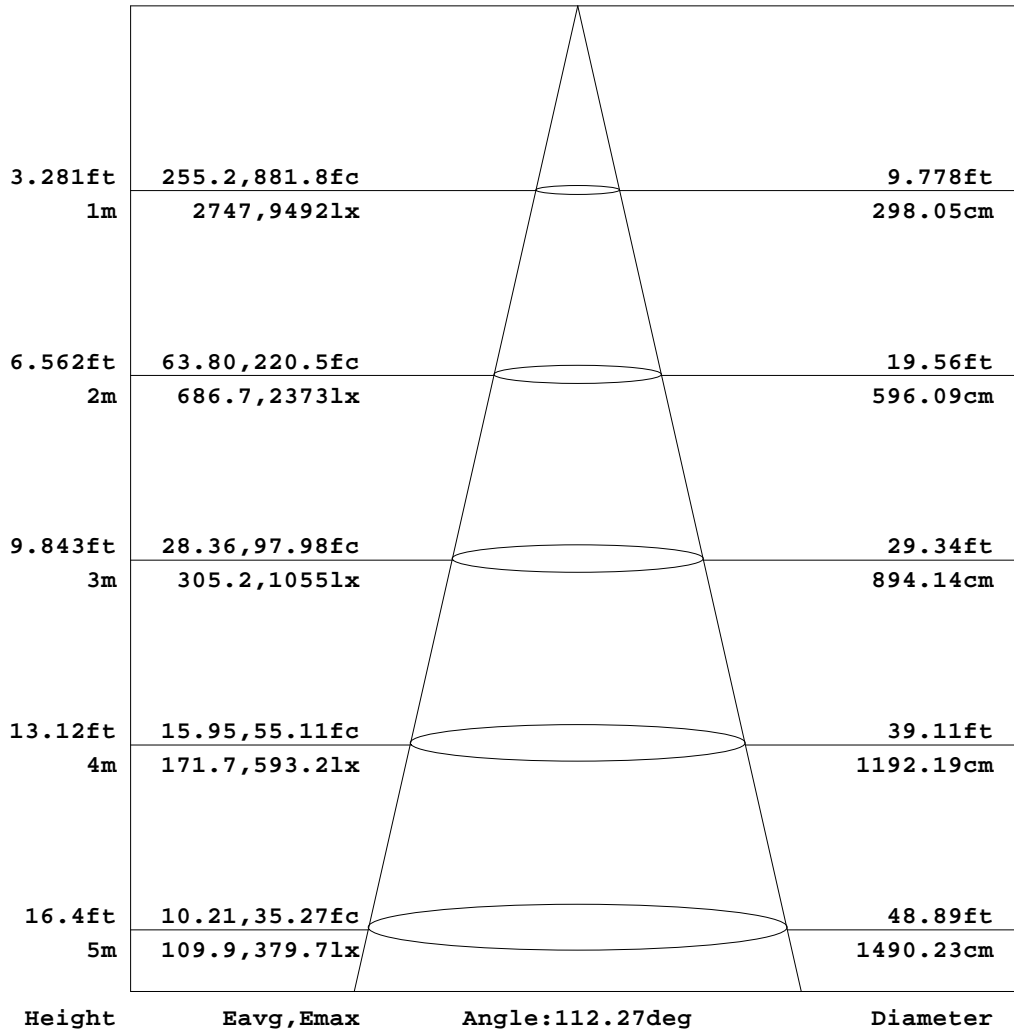
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2015-06-13

g g Range: 0 - 180DEG
 g g Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity: 65.0%
 Test Distance: 8.250m [K=1.0000]
 Remarks:

AAI Figure

Test:U:229.8V I:0.9060A P:202.4W PF:0.9710 Lamp Flux:27664.6x1 lm		
NAME: HB350-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

Flux out:20463 lm



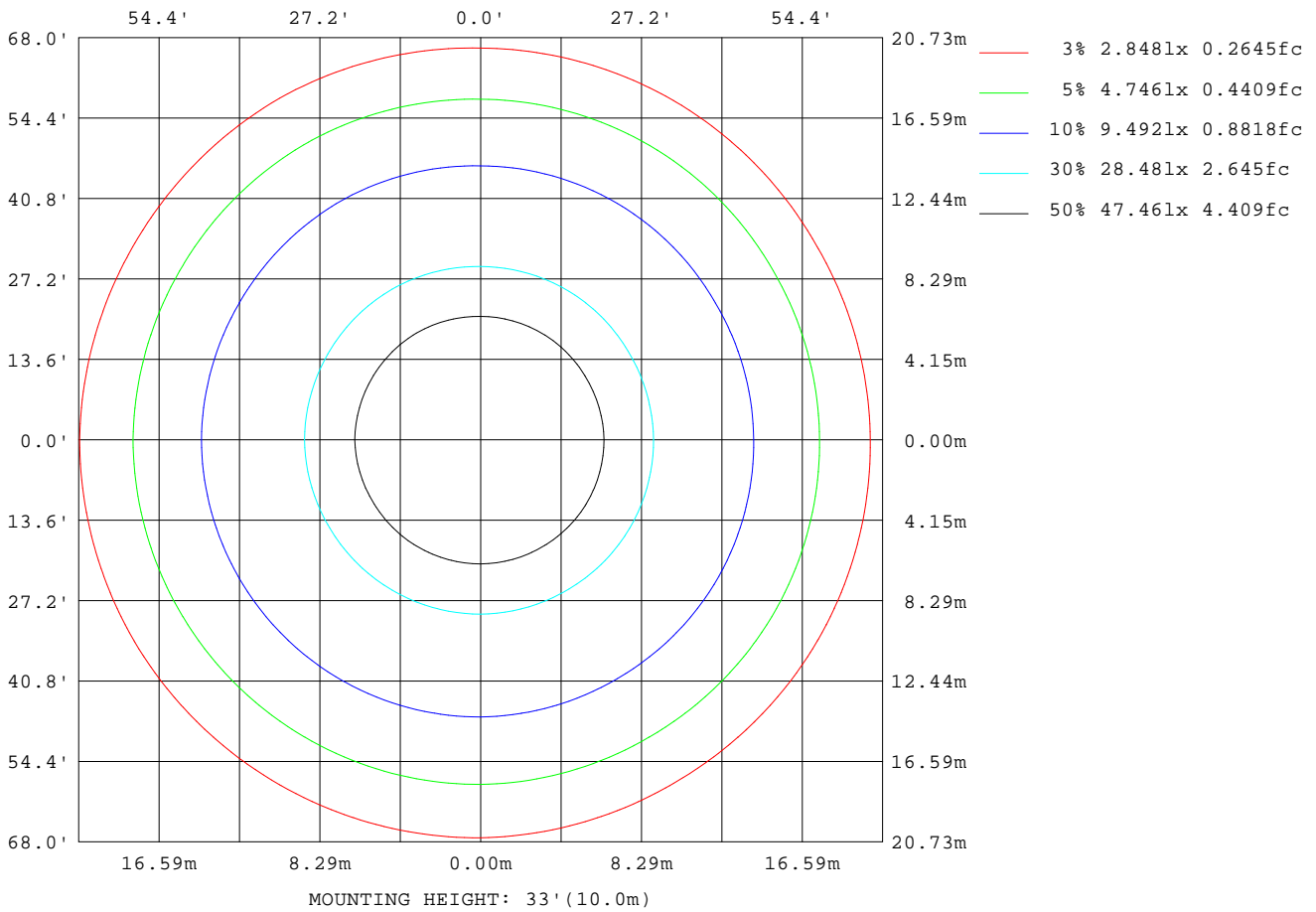
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2015-06-13

gg Range: 0 - 180DEG
 gg Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.250m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

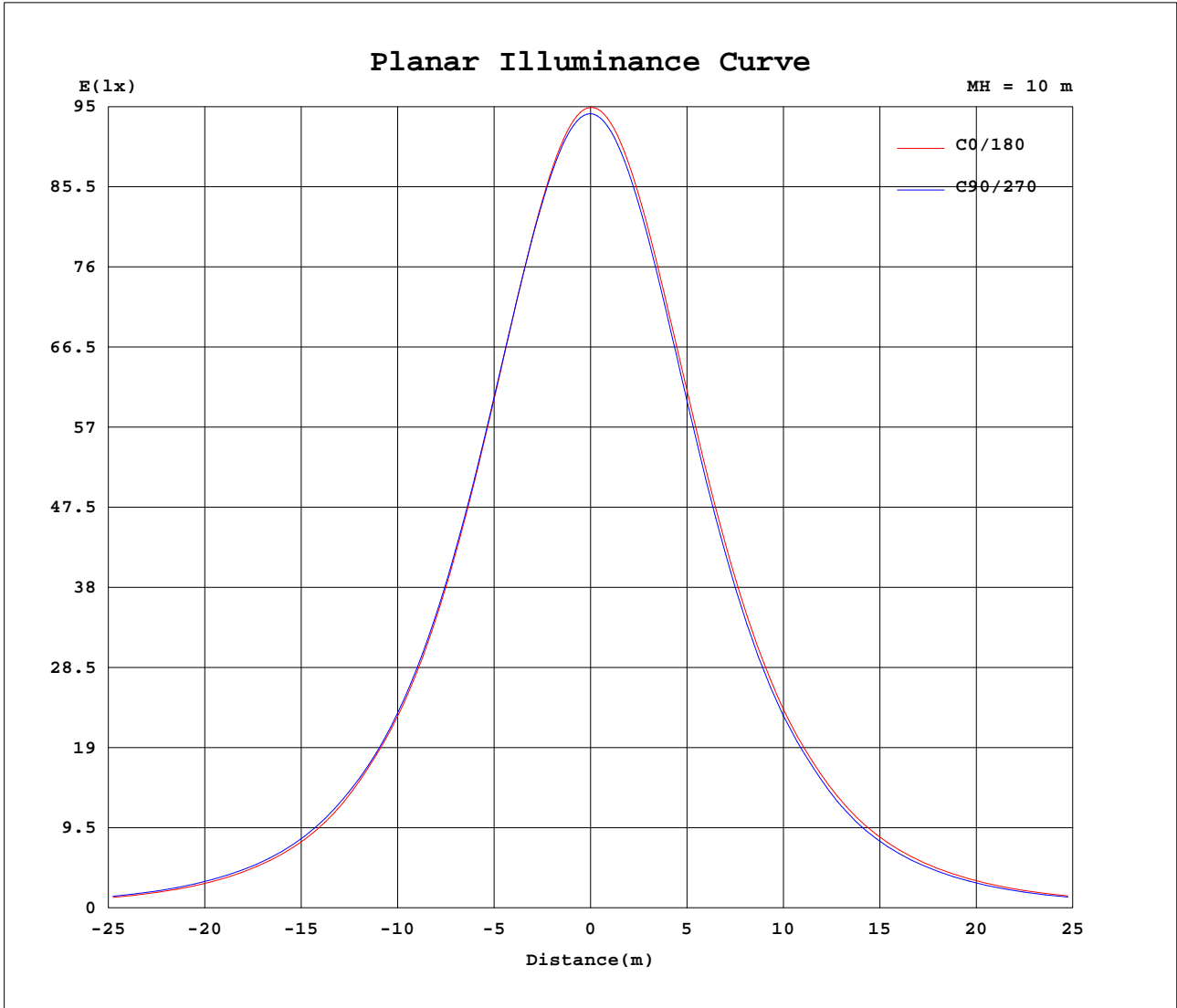
Test:U:229.8V I:0.9060A P:202.4W PF:0.9710 Lamp Flux:27664.6x1 lm		
NAME: HB350-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2015-06-13

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.250m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2015-06-13

Range: 0 - 180DEG
 Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity: 65.0%
 Test Distance: 8.250m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:229.8V I:0.9060A P:202.4W PF:0.9710 Lamp Flux:27664.6x1 lm		
NAME: HB350-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG) g (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	9492	9464	9440	9418	9398	9378	9492	9464	9440	9418	9398	9378						
5	9447	9423	9400	9388	9371	9358	9474	9440	9412	9380	9358	9335						
10	9329	9310	9291	9287	9275	9268	9385	9347	9315	9275	9249	9224						
15	9144	9135	9119	9122	9109	9108	9224	9184	9152	9102	9069	9043						
20	8884	8880	8870	8887	8875	8880	8989	8947	8913	8857	8821	8789						
25	8548	8554	8549	8575	8568	8579	8687	8636	8600	8523	8498	8457						
30	8134	8146	8149	8180	8183	8193	8307	8243	8203	8123	8090	8048						
35	7634	7663	7661	7711	7713	7729	7841	7768	7731	7634	7608	7560						
40	7059	7092	7096	7158	7163	7188	7291	7221	7175	7079	7045	6988						
45	6427	6453	6468	6532	6546	6573	6668	6588	6556	6448	6428	6377						
50	5743	5779	5791	5864	5884	5922	6007	5915	5880	5784	5738	5669						
55	4819	4905	4933	5036	5069	5102	5150	5050	5010	4856	4812	4748						
60	3918	3984	4027	4135	4175	4206	4258	4176	4105	3971	3926	3873						
65	2931	3011	3065	3191	3239	3280	3284	3200	3131	2994	2943	2891						
70	2024	2091	2126	2256	2290	2346	2348	2246	2207	2070	2054	1984						
75	1188	1239	1270	1388	1418	1470	1452	1343	1336	1244	1206	1169						
80	589	618	645	711	739	760	756	715	682	618	603	582						
85	238	254	270	308	325	335	338	312	298	265	255	240						
90	180	172	166	162	163	162	177	176	175	179	184	188						
95	190	189	189	187	188	186	204	204	205	203	203	203						
100	175	174	174	176	177	179	200	199	197	194	191	191						
105	162	161	161	161	162	163	189	189	187	184	183	183						
110	154	153	150	150	150	152	181	181	179	179	179	178						
115	151	149	145	145	145	146	177	177	177	178	178	180						
120	152	149	146	142	141	142	175	176	178	178	179	179						
125	179	173	165	161	160	157	194	200	197	206	208	207						
130	182	172	167	167	169	173	207	203	209	212	225	222						
135	163	163	160	157	155	158	195	196	197	193	189	189						
140	161	162	159	158	157	157	191	192	192	191	190	188						
145	168	167	165	164	163	163	194	194	195	195	194	193						
150	175	174	173	172	171	170	199	198	199	199	199	198						
155	183	182	181	180	179	178	203	203	203	203	203	202						
160	191	190	189	188	187	186	207	207	207	207	207	206						
165	198	197	196	196	194	194	211	210	209	209	209	208						
170	204	204	203	202	201	200	212	212	211	211	211	210						
175	209	209	208	207	206	206	213	213	212	211	211	210						
180	212	212	211	211	210	210	213	212	212	210	210	209						

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2015-06-13

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.250m [K=1.0000]
 Remarks: