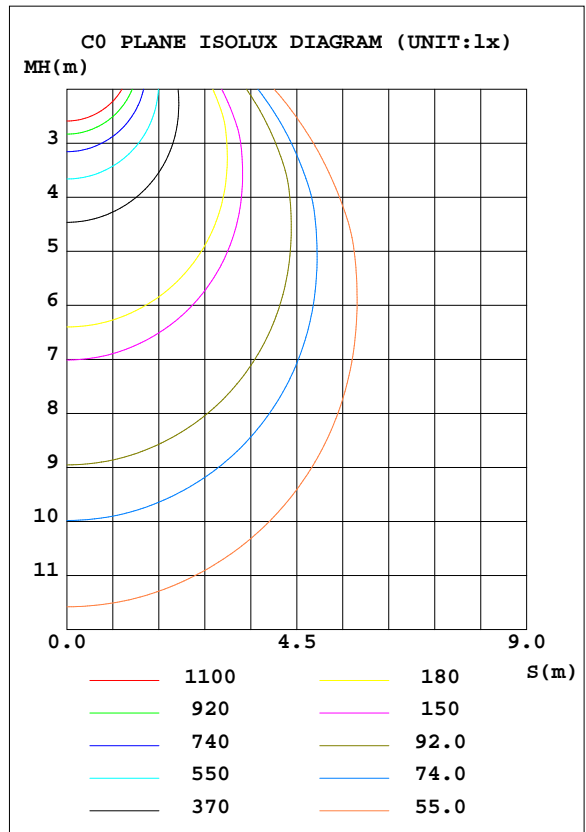
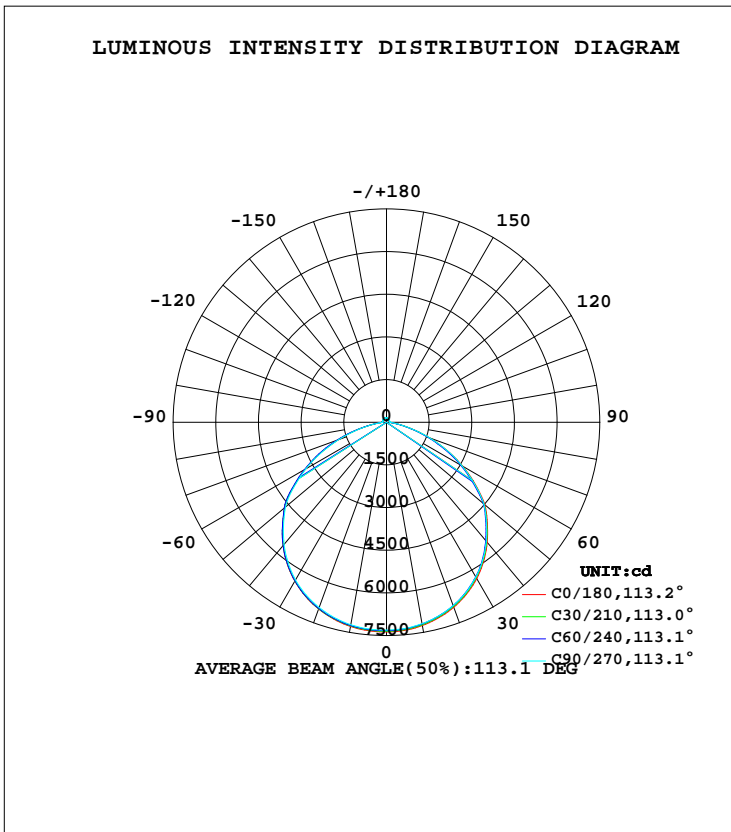


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:229.9V I:0.6910A P:154.2W PF:0.9690 Lamp Flux:21530.9x1 lm		
NAME: HB350-150W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 139.63 lm/W			
MODEL	HB350-150W	I _{max} (cd)	7373	S/MH(C0/180)	1.28
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH(C90/270)	1.28
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	21531	h UP, DN(C0-180)	1.9,47.2
NOMINAL FLUX(lm)	21530.9	CIE CLASS	DIRECT	h UP, DN(C180-360)	2.1,48.8
LAMPS INSIDE	1	h up(%)	4.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230.0	h down(%)	96.0	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	7257	7216	7192	7175	7290	7262	7227	7188	0- 10	694.0	694.0	3.22,3.22
20	6919	6875	6857	6854	6986	6973	6928	6876	10- 20	2002	2696	12.5,12.5
30	6347	6294	6286	6305	6449	6441	6399	6328	20- 30	3069	5765	26.8,26.8
40	5508	5455	5456	5496	5655	5658	5603	5526	30- 40	3738	9503	44.1,44.1
50	4514	4458	4471	4513	4676	4695	4636	4542	40- 50	3902	13405	62.3,62.3
60	3092	3033	3068	3153	3294	3313	3270	3171	50- 60	3472	16878	78.4,78.4
70	1609	1572	1614	1696	1823	1851	1786	1697	60- 70	2412	19290	89.6,89.6
80	461.0	435.4	454.9	506.3	570.4	589.5	559.2	506.6	70- 80	1112	20402	94.8,94.8
90	133.7	132.4	125.0	119.1	129.4	128.8	127.1	130.7	80- 90	270.7	20672	96,96
100	132.2	130.2	130.8	131.4	148.0	147.9	148.0	146.9	90-100	156.2	20829	96.7,96.7
110	113.6	113.4	114.1	113.0	134.0	134.1	135.2	133.8	100-110	137.9	20966	97.4,97.4
120	111.5	111.1	110.3	108.9	132.0	132.5	134.0	134.7	110-120	121.4	21088	97.9,97.9
130	128.4	130.7	131.3	129.1	161.0	165.0	158.9	151.9	120-130	122.0	21210	98.5,98.5
140	122.4	123.0	124.4	124.5	147.0	145.4	146.3	145.6	130-140	107.4	21317	99,99
150	133.1	133.6	133.4	132.2	152.1	150.8	151.0	150.7	140-150	86.37	21404	99.4,99.4
160	145.9	146.2	145.8	144.4	159.4	157.9	158.0	157.5	150-160	67.90	21472	99.7,99.7
170	157.1	157.0	156.7	155.2	163.8	162.7	161.4	161.5	160-170	44.04	21516	99.9,99.9
180	163.9	163.6	163.3	162.0	164.3	163.5	162.9	162.1	170-180	15.38	21531	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

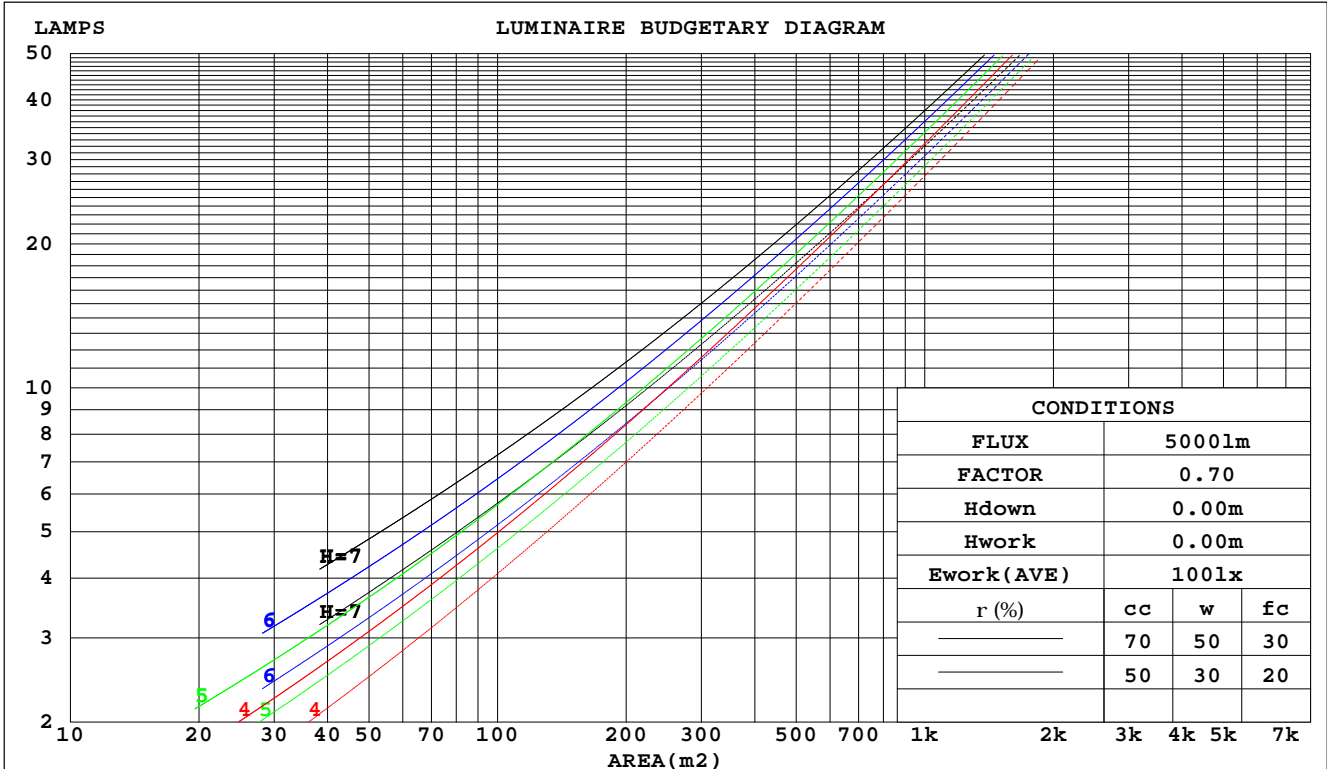
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2015-06-13

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:229.9V I:0.6910A P:154.2W PF:0.9690 Lamp Flux:21530.9x1 lm		
NAME: HB350-150W	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						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	.81	.76	.73	.77	.74	.71	.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	.46	.57	.51	.46	.55	.49	.45	.43
6.0	.57	.48	.42	.56	.47	.41	.53	.46	.41	.51	.45	.40	.50	.44	.39	.37
7.0	.51	.43	.37	.50	.42	.36	.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	.28	.38	.32	.28	.26
10.0	.40	.32	.27	.39	.31	.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:229.9V I:0.6910A P:154.2W PF:0.9690 Lamp Flux:21530.9x1 lm		
NAME: HB350-150W	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	.231	.127	.039	.220	.122	.038	
4.0	.242	.126	.037	.236	.124	.037	.226	.120	.036	.215	.116	.035	.206	.112	.034	
5.0	.225	.115	.033	.220	.113	.033	.210	.109	.032	.201	.106	.032	.192	.103	.031	
6.0	.209	.105	.030	.205	.103	.030	.196	.100	.029	.188	.098	.029	.180	.095	.028	
7.0	.195	.097	.027	.191	.095	.027	.183	.093	.027	.176	.090	.026	.169	.088	.026	
8.0	.183	.089	.025	.179	.088	.025	.172	.086	.025	.165	.084	.024	.159	.082	.024	
9.0	.172	.083	.023	.168	.082	.023	.162	.080	.023	.156	.078	.022	.150	.076	.022	
10.0	.161	.077	.021	.158	.076	.021	.152	.075	.021	.147	.073	.021	.142	.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	.221	.221	.221	.189	.189	.189	.129	.129	.129	.074	.074	.074	.024	.024	.024	
1.0	.210	.187	.166	.180	.160	.143	.123	.110	.099	.071	.064	.058	.023	.021	.019	
2.0	.201	.163	.130	.173	.140	.113	.118	.097	.079	.068	.056	.046	.022	.018	.015	
3.0	.194	.145	.107	.166	.125	.092	.114	.087	.065	.066	.051	.038	.021	.017	.013	
4.0	.186	.132	.090	.160	.114	.079	.110	.079	.055	.064	.047	.033	.020	.015	.011	
5.0	.179	.122	.079	.154	.105	.069	.106	.074	.049	.061	.043	.029	.020	.014	.010	
6.0	.172	.113	.071	.148	.098	.062	.102	.069	.044	.059	.040	.026	.019	.013	.009	
7.0	.165	.106	.065	.142	.092	.057	.098	.065	.040	.057	.038	.024	.018	.012	.008	
8.0	.159	.101	.061	.137	.087	.053	.095	.061	.037	.055	.036	.022	.018	.012	.007	
9.0	.153	.096	.057	.132	.083	.050	.092	.058	.035	.053	.035	.021	.017	.011	.007	
10.0	.148	.092	.054	.127	.080	.047	.088	.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:229.9V I:0.6910A P:154.2W PF:0.9690 Lamp Flux:21530.9x1 lm										
NAME: HB350-150W					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	27.2	28.6	27.5	28.9	29.1	27.1	28.5	27.4	28.8	29.1
3H	28.3	29.6	28.6	29.9	30.2	28.2	29.5	28.5	29.8	30.1
4H	28.6	29.8	28.9	30.2	30.5	28.5	29.8	28.9	30.1	30.4
6H	28.7	29.9	29.1	30.2	30.6	28.6	29.8	29.0	30.1	30.5
8H	28.7	29.9	29.1	30.2	30.6	28.6	29.8	29.0	30.1	30.5
12H	28.7	29.8	29.1	30.2	30.5	28.6	29.7	29.0	30.1	30.5
4H 2H	27.6	28.9	28.0	29.2	29.5	27.6	28.8	27.9	29.1	29.5
3H	28.9	30.0	29.3	30.3	30.7	28.8	29.9	29.2	30.2	30.6
4H	29.3	30.3	29.7	30.6	31.1	29.2	30.2	29.6	30.6	31.0
6H	29.5	30.3	29.9	30.8	31.2	29.4	30.3	29.8	30.7	31.1
8H	29.5	30.3	30.0	30.8	31.2	29.4	30.2	29.9	30.7	31.1
12H	29.5	30.3	30.0	30.7	31.2	29.4	30.2	29.9	30.6	31.1
8H 4H	29.3	30.2	29.8	30.6	31.1	29.3	30.1	29.7	30.5	31.0
6H	29.6	30.3	30.1	30.8	31.3	29.5	30.2	30.0	30.7	31.2
8H	29.7	30.3	30.2	30.8	31.3	29.6	30.2	30.1	30.7	31.2
12H	29.8	30.3	30.3	30.8	31.3	29.7	30.2	30.2	30.7	31.3
12H 4H	29.3	30.1	29.8	30.5	31.0	29.2	30.0	29.7	30.4	30.9
6H	29.6	30.2	30.1	30.7	31.2	29.5	30.1	30.1	30.6	31.2
8H	29.7	30.2	30.3	30.7	31.3	29.6	30.1	30.2	30.7	31.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
1.5H	+ 0.2 / - 0.4					+ 0.2 / - 0.4				
2.0H	+ 0.4 / - 0.4					+ 0.4 / - 0.4				

CIE Pub.117 Corrected 21531 lm Total Lamp Luminous Flux.(8log(F/F0) = 10.7)

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:229.9V I:0.6910A P:154.2W PF:0.9690 Lamp Flux:21530.9x1 lm		
NAME: HB350-150W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

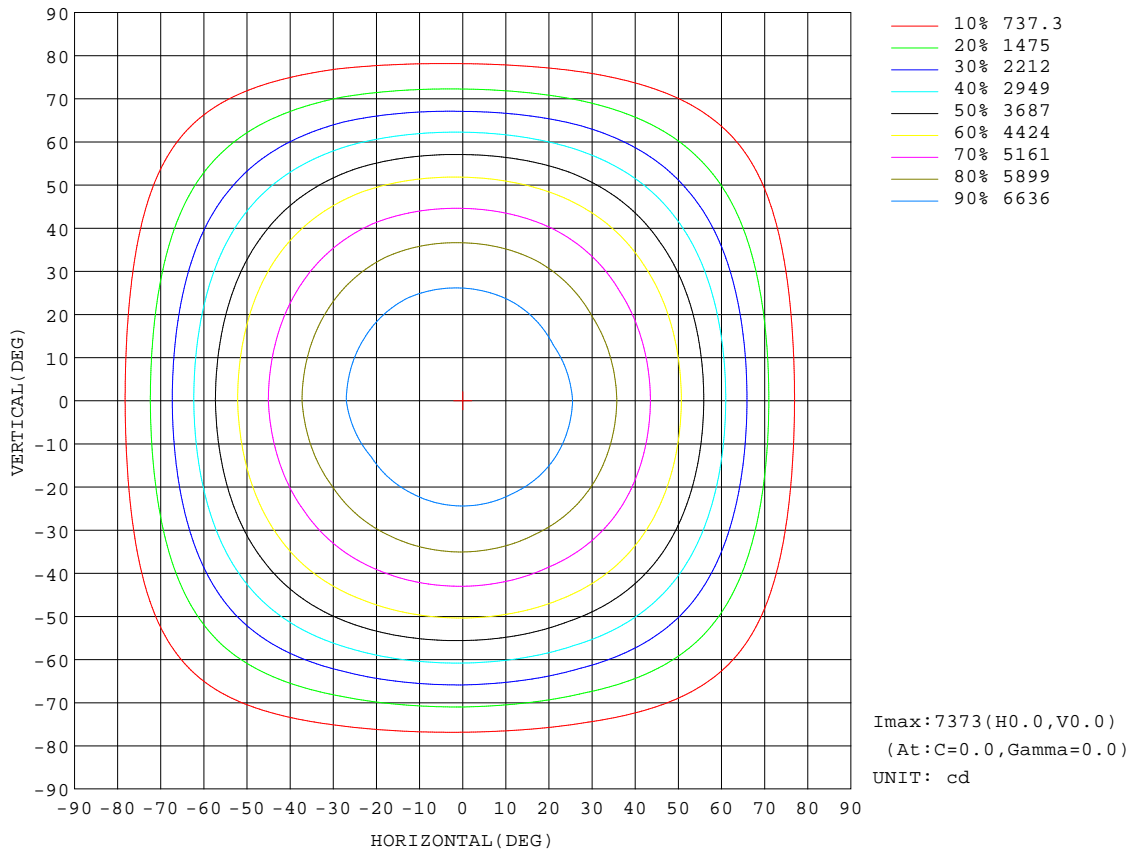
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	57	45	38	56	45	38	55	44	38	32
0.80	67	56	48	66	55	48	64	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	82	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	84
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:229.9V I:0.6910A P:154.2W PF:0.9690 Lamp Flux:21530.9x1 lm		
NAME: HB350-150W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



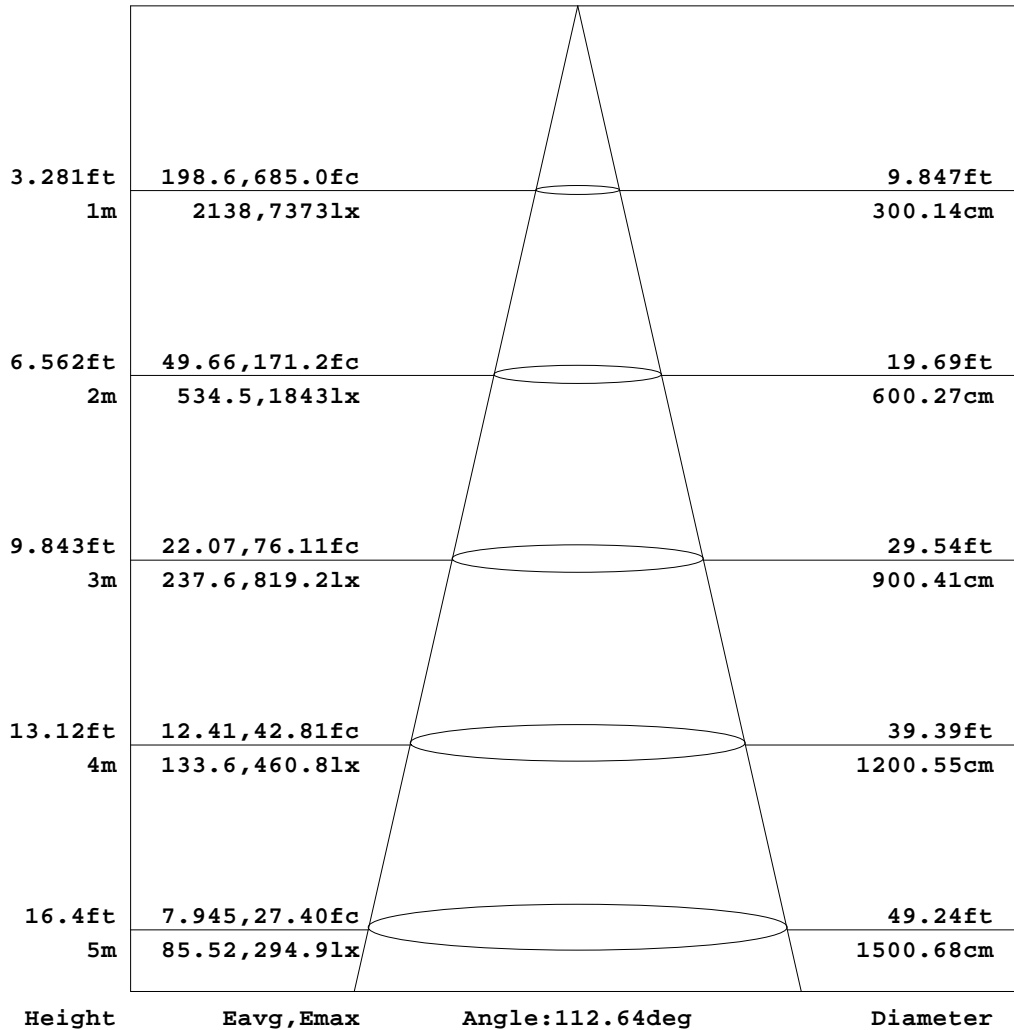
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2015-06-13

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:

AAI Figure

Test:U:229.9V I:0.6910A P:154.2W PF:0.9690 Lamp Flux:21530.9x1 lm		
NAME: HB350-150W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

Flux out:15927 lm



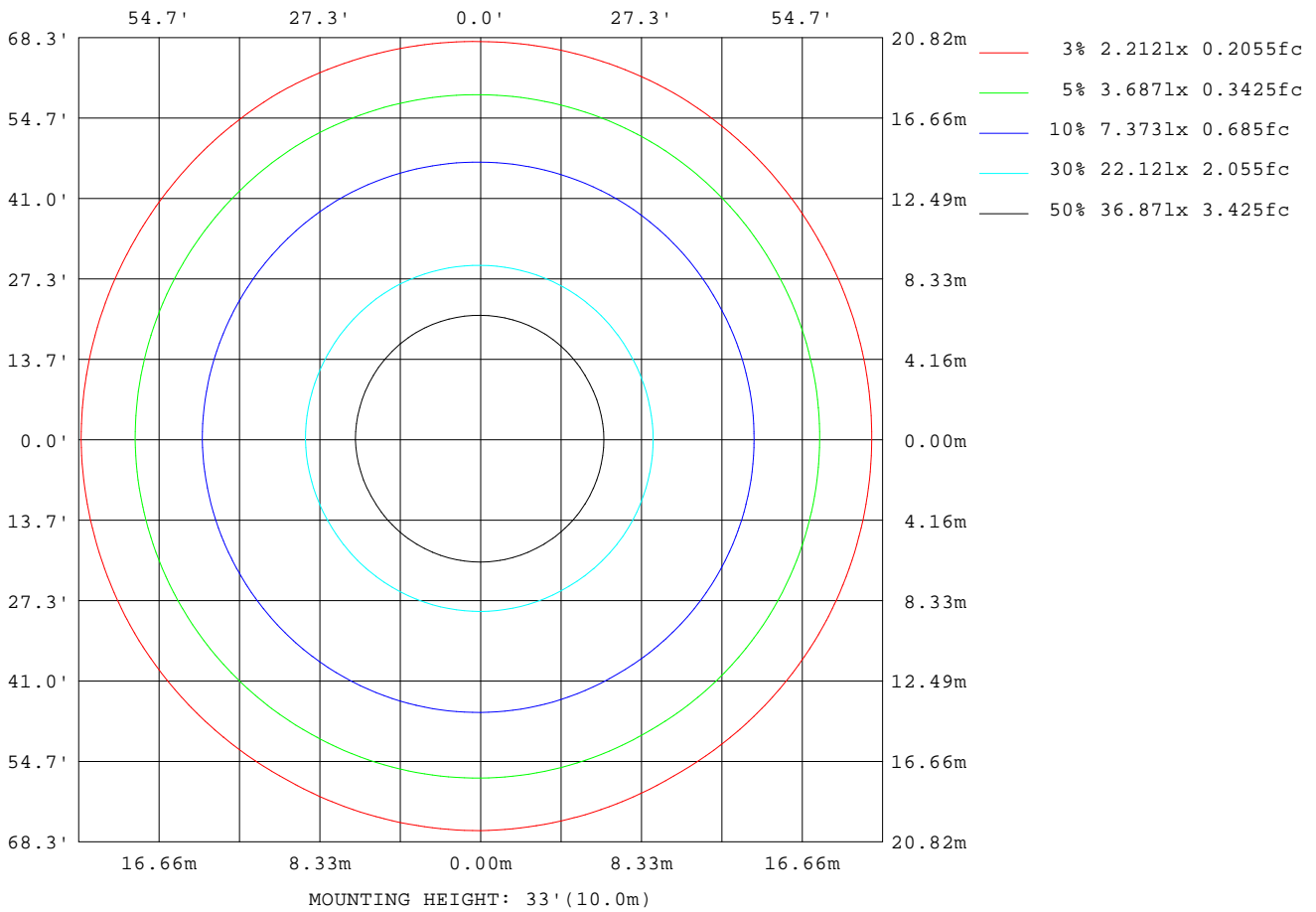
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

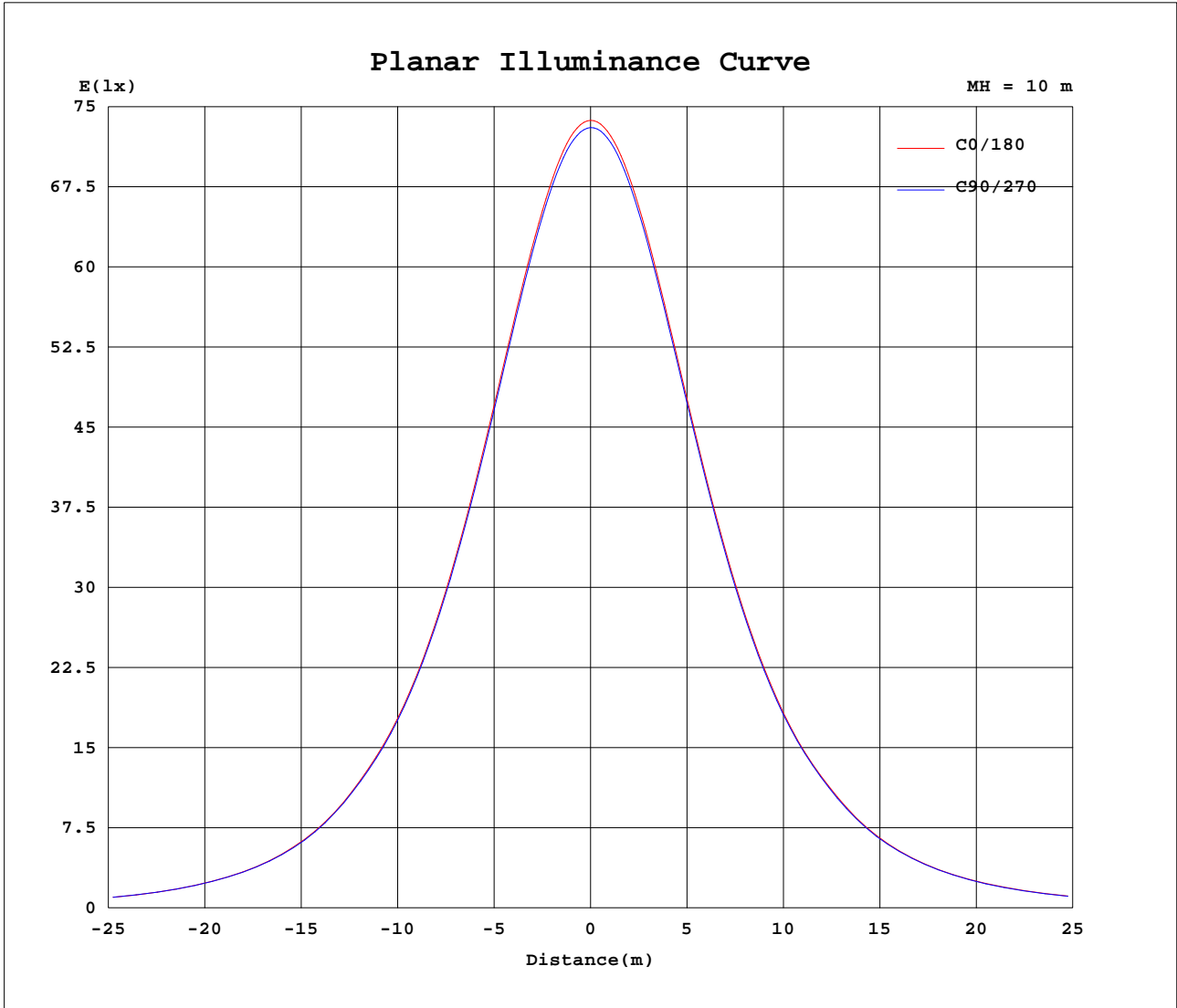
Test:U:229.9V I:0.6910A P:154.2W PF:0.9690 Lamp Flux:21530.9x1 lm		
NAME: HB350-150W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



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:229.9V I:0.6910A P:154.2W PF:0.9690 Lamp Flux:21530.9x1 lm		
NAME: HB350-150W	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	7373	7349	7326	7305	7286	7268	7373	7349	7326	7305	7286	7268							
5	7345	7319	7291	7275	7259	7245	7355	7331	7314	7290	7270	7248							
10	7257	7231	7201	7192	7178	7172	7290	7268	7256	7227	7203	7173							
15	7113	7087	7057	7054	7041	7042	7165	7149	7136	7106	7076	7041							
20	6919	6892	6858	6857	6851	6857	6986	6979	6967	6928	6897	6855							
25	6664	6635	6597	6601	6601	6621	6749	6738	6737	6695	6659	6606							
30	6347	6310	6278	6286	6290	6319	6449	6441	6441	6399	6358	6298							
35	5959	5928	5883	5905	5913	5951	6083	6073	6079	6029	5999	5923							
40	5508	5478	5431	5456	5474	5518	5655	5657	5658	5603	5567	5484							
45	5014	4986	4933	4964	4980	5032	5167	5157	5176	5119	5081	4997							
50	4514	4469	4447	4471	4477	4549	4676	4692	4698	4636	4579	4505							
55	3812	3781	3717	3775	3828	3904	4017	4022	4049	3981	3940	3825							
60	3092	3059	3008	3068	3111	3194	3294	3293	3333	3270	3215	3127							
65	2351	2326	2268	2345	2367	2483	2574	2570	2619	2528	2497	2388							
70	1609	1597	1547	1614	1641	1752	1823	1833	1870	1786	1751	1642							
75	947	924	898	947	991	1085	1138	1147	1178	1108	1072	983							
80	461	443	427	455	480	533	570	581	598	559	530	483							
85	179	170	166	178	196	224	252	254	264	241	224	196							
90	134	133	132	125	121	117	129	129	129	127	128	133							
95	144	142	142	141	142	139	156	153	155	154	156	155							
100	132	130	130	131	132	131	148	147	149	148	148	146							
105	121	120	120	121	121	120	140	139	141	140	140	138							
110	114	113	114	114	113	112	134	134	134	135	134	133							
115	111	112	112	112	110	111	134	136	135	135	133	132							
120	111	111	112	110	110	108	132	132	133	134	135	134							
125	129	131	131	129	126	122	148	146	148	150	152	150							
130	128	131	131	131	128	130	161	165	165	159	152	152							
135	123	122	124	126	126	126	152	154	154	151	149	147							
140	122	123	123	124	125	124	147	145	146	146	147	145							
145	127	128	128	128	127	126	148	147	147	147	147	147							
150	133	134	134	133	133	132	152	150	151	151	151	150							
155	140	140	140	140	139	138	156	154	155	155	155	154							
160	146	146	146	146	145	144	159	158	157	158	158	157							
165	152	152	152	152	151	150	162	161	160	160	161	160							
170	157	157	157	157	156	155	164	163	163	161	162	161							
175	161	161	161	161	160	159	165	164	164	163	163	162							
180	164	164	163	163	162	162	164	163	164	163	162	162							

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: