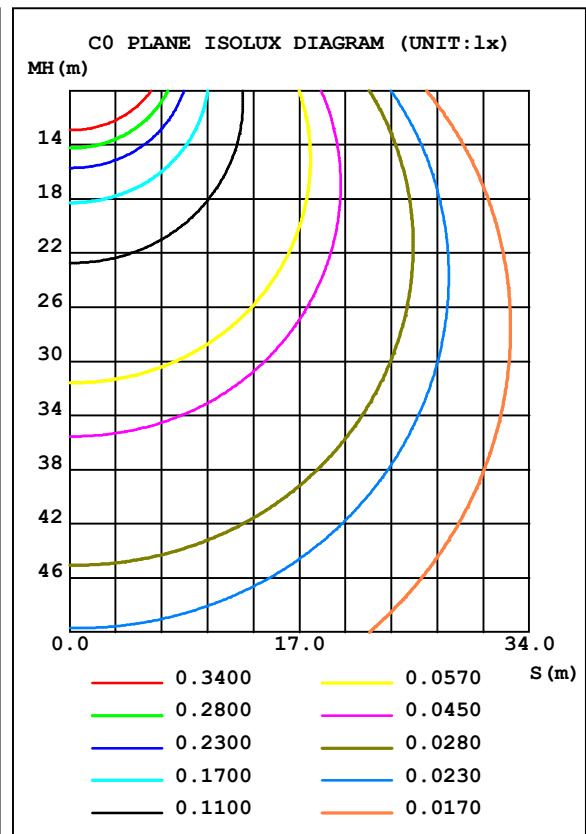
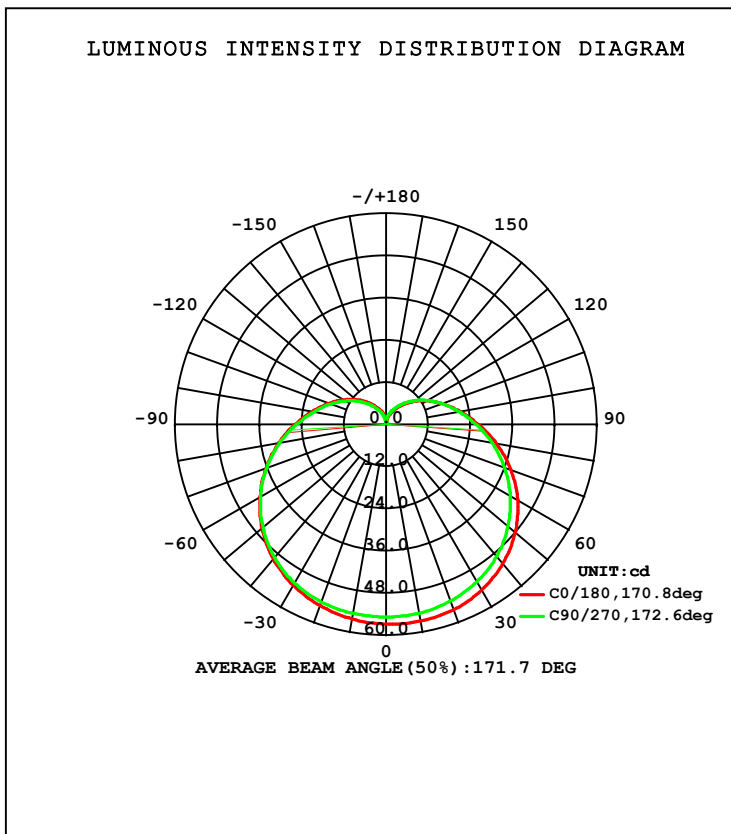


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: P45塑料4W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: MK	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 80.57 lm/W			
MODEL	P45	I <sub>max</sub> (cd)	56.92	S/MH (C0/180)	1.44
NOMINAL POWER (W)	4	LOR (%)	210.3	S/MH (C90/270)	1.42
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	344.01	η UP, DN (C0-180)	26.3, 79.3
NOMINAL FLUX (lm)	163.552	CIE CLASS	SEMI-D.	η UP, DN (C180-360)	26.0, 78.7
LAMPS INSIDE	1	η up (%)	52.4	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	230.9	η down (%)	158.0	CIBSE SHR MAX	1.55



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2013-03-01

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 8.920m [K=1.0000]  
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	56.84	55.69	54.53	53.49	56.21	55.23	54.60	53.98	0- 10	5.269	5.269	1.53,3.22
20	56.16	54.90	53.52	52.38	54.91	54.02	53.79	53.22	10- 20	15.48	20.75	6.03,12.7
30	54.48	53.18	51.72	50.62	52.89	52.09	52.12	51.78	20- 30	24.65	45.40	13.2,27.8
40	51.74	50.42	49.01	47.98	49.95	49.21	49.43	49.24	30- 40	32.05	77.44	22.5,47.4
50	47.96	46.65	45.30	44.40	46.09	45.37	45.77	45.67	40- 50	37.01	114.5	33.3,70
60	43.26	42.04	40.82	40.06	41.42	40.80	41.29	41.22	50- 60	39.15	153.6	44.7,93.9
70	37.76	36.83	35.83	35.23	36.34	35.74	36.18	36.08	60- 70	38.52	192.1	55.8,117
80	31.90	31.33	30.65	30.14	31.02	30.44	30.74	30.63	70- 80	35.48	227.6	66.2,139
90	26.28	26.09	25.63	25.25	25.92	25.29	25.46	25.30	80- 90	30.77	258.4	75.1,158
100	21.47	21.44	21.16	20.88	21.41	20.89	20.93	20.72	90-100	25.46	283.8	82.5,174
110	17.25	17.36	17.23	17.08	17.52	17.04	16.98	16.70	100-110	20.21	304.0	88.4,186
120	13.53	13.70	13.72	13.72	14.08	13.61	13.44	13.09	110-120	15.26	319.3	92.8,195
130	10.24	10.48	10.62	10.70	11.01	10.53	10.28	9.889	120-130	10.81	330.1	96,202
140	7.325	7.636	7.863	8.011	8.247	7.812	7.457	7.049	130-140	7.033	337.1	98,206
150	4.884	5.229	5.518	5.701	5.878	5.493	5.120	4.701	140-150	4.088	341.2	99.2,209
160	2.918	3.293	3.635	3.826	3.944	3.595	3.108	2.689	150-160	2.027	343.2	99.8,210
170	0.4690	0.9789	1.598	2.041	2.072	1.228	0.5570	0.4563	160-170	0.6985	343.9	100,210
180	0.4411	0.4411	0.4258	0.4309	0.4512	0.4309	0.4360	0.4360	170-180	0.0650	344.0	100,210
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

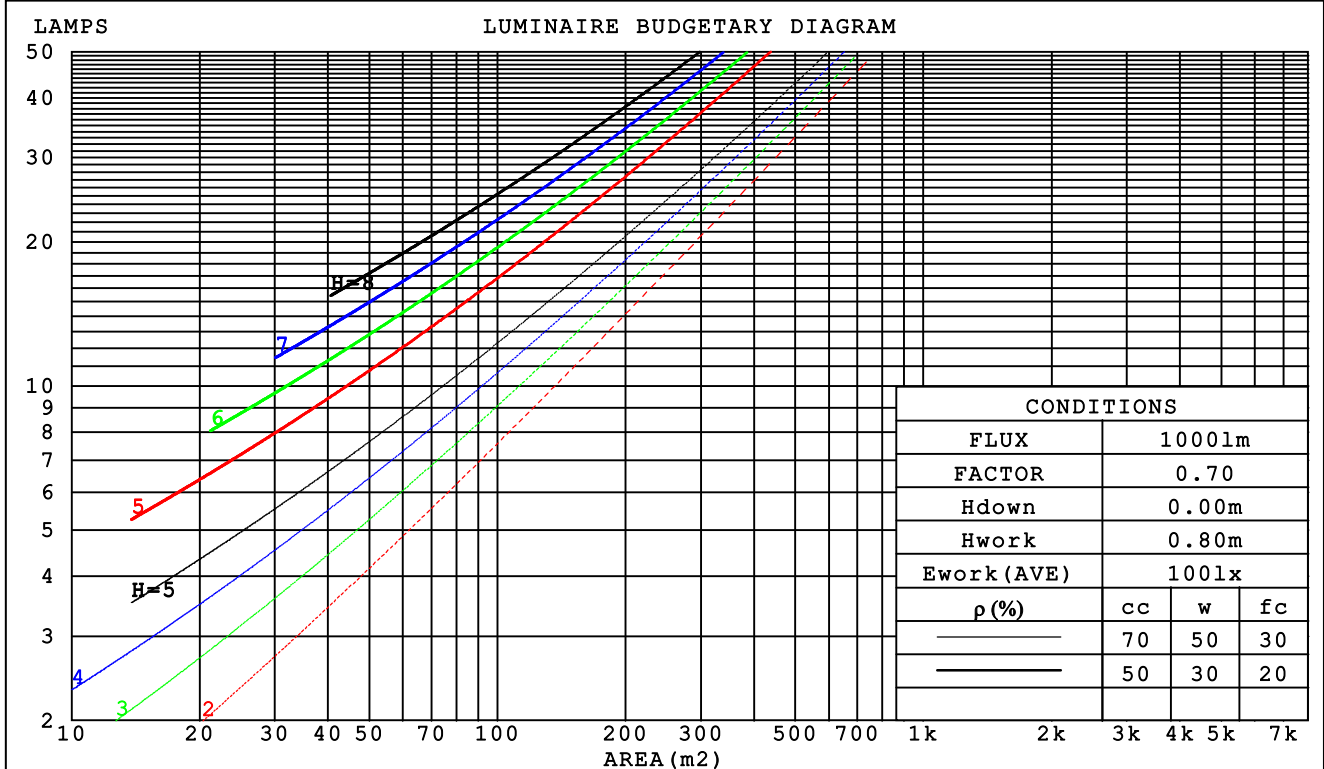
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2013-03-01

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:8.920m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: P45塑料4W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: MK	SUR.:	PROTECTION ANGLE:

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	2.38	2.38	2.38	2.26	2.26	2.26	2.05	2.05	2.05	1.85	1.85	1.85	1.67	1.67	1.67	1.58
1.0	1.95	1.83	1.73	1.85	1.74	1.65	1.66	1.58	1.50	1.49	1.42	1.36	1.33	1.28	1.23	1.15
2.0	1.66	1.48	1.34	1.57	1.41	1.28	1.41	1.28	1.17	1.26	1.16	1.07	1.12	1.04	.97	.89
3.0	1.43	1.23	1.08	1.35	1.18	1.03	1.21	1.07	.95	1.09	.97	.87	.97	.87	.79	.71
4.0	1.25	1.05	.89	1.18	.90	.86	1.06	.91	.79	.95	.82	.72	.85	.74	.66	.59
5.0	1.10	.90	.75	1.05	.86	.72	.94	.79	.67	.85	.71	.61	.75	.64	.56	.50
6.0	.99	.79	.64	.94	.75	.62	.84	.69	.57	.76	.63	.53	.68	.57	.48	.42
7.0	.89	.69	.56	.84	.66	.54	.76	.61	.50	.69	.56	.46	.62	.51	.42	.37
8.0	.80	.62	.49	.77	.59	.47	.69	.55	.44	.63	.50	.41	.56	.45	.37	.32
9.0	.73	.55	.43	.70	.53	.42	.64	.49	.39	.58	.45	.36	.52	.41	.33	.29
10.0	.67	.50	.39	.64	.48	.38	.59	.45	.35	.53	.41	.32	.48	.38	.30	.26



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2013-03-01

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 8.920m [K=1.0000]  
 Remarks:

WEC AND CCEC

NAME: P45塑料4W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: MK	SUR.:	PROTECTION ANGLE:

ρ <sub>cc</sub>	80%			70%			50%			30%			10%			0
ρ <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ <sub>fc</sub>	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)									
0.0																
1.0	.857	.487	.154	.826	.471	.150	.767	.440	.141	.714	.412	.132	.664	.385	.124	
2.0	.728	.399	.122	.700	.386	.119	.647	.360	.112	.598	.335	.105	.553	.313	.099	
3.0	.641	.341	.102	.615	.329	.099	.567	.307	.093	.522	.286	.088	.481	.266	.082	
4.0	.573	.298	.088	.550	.288	.085	.506	.268	.080	.465	.250	.075	.427	.232	.071	
5.0	.518	.264	.077	.497	.255	.074	.457	.238	.070	.420	.221	.066	.385	.206	.062	
6.0	.473	.237	.068	.454	.229	.066	.417	.214	.062	.383	.199	.058	.351	.185	.055	
7.0	.435	.215	.061	.417	.208	.059	.384	.194	.056	.352	.181	.053	.323	.168	.049	
8.0	.403	.197	.055	.386	.190	.054	.355	.178	.051	.326	.165	.048	.299	.153	.045	
9.0	.375	.181	.051	.360	.175	.049	.331	.164	.046	.304	.152	.044	.278	.141	.041	
10.0	.350	.168	.047	.336	.162	.045	.310	.152	.043	.284	.141	.040	.261	.131	.038	

ρ <sub>cc</sub>	80%			70%			50%			30%			10%			0
ρ <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ <sub>fc</sub>	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.800	.800	.800	.683	.683	.683	.466	.466	.466	.268	.268	.268	.086	.086	.086	
1.0	.796	.729	.669	.681	.626	.575	.466	.430	.398	.268	.249	.231	.086	.080	.075	
2.0	.783	.682	.597	.670	.587	.516	.459	.406	.360	.265	.236	.211	.085	.076	.069	
3.0	.767	.648	.553	.658	.559	.480	.452	.388	.336	.261	.227	.198	.084	.074	.065	
4.0	.751	.622	.524	.644	.538	.455	.443	.375	.321	.256	.220	.190	.082	.071	.062	
5.0	.735	.602	.505	.631	.521	.439	.435	.364	.310	.252	.214	.184	.081	.070	.061	
6.0	.719	.586	.490	.618	.507	.427	.426	.355	.302	.247	.209	.180	.080	.068	.059	
7.0	.704	.572	.480	.605	.496	.418	.418	.348	.296	.243	.205	.176	.079	.067	.058	
8.0	.690	.561	.472	.594	.486	.412	.411	.342	.292	.239	.201	.174	.077	.066	.058	
9.0	.676	.551	.466	.583	.478	.407	.404	.336	.289	.235	.198	.172	.076	.065	.057	
10.0	.664	.542	.461	.572	.471	.402	.397	.331	.286	.232	.196	.171	.075	.064	.057	

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2013-03-01

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 8.920m [K=1.0000]  
 Remarks:

Uncorrected UGR Table

NAME: P45塑料4W		TYPE:					WEIGHT:				
DIM.:		SPEC.:					SERIAL No.:				
MFR.: MK		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		14.9	16.2	15.5	16.8	17.5	14.7	16.0	15.2	16.6	17.3
	3H	17.5	18.7	18.1	19.4	20.1	17.3	18.5	17.9	19.1	19.9
	4H	18.9	20.1	19.6	20.8	21.5	18.7	19.8	19.3	20.5	21.3
	6H	20.5	21.6	21.2	22.3	23.1	20.3	21.3	20.9	22.0	22.8
	8H	21.4	22.4	22.1	23.1	23.9	21.1	22.2	21.8	22.9	23.7
	12H	22.4	23.4	23.1	24.1	24.9	22.1	23.2	22.8	23.8	24.7
	4H 2H	15.7	16.9	16.3	17.5	18.3	15.5	16.7	16.2	17.4	18.1
	3H	18.5	19.5	19.2	20.2	21.0	18.3	19.3	19.0	20.0	20.8
	4H	20.1	21.0	20.8	21.8	22.6	19.9	20.8	20.6	21.5	22.4
	6H	21.9	22.7	22.6	23.4	24.3	21.6	22.5	22.4	23.2	24.1
	8H	22.8	23.6	23.6	24.4	25.3	22.6	23.4	23.4	24.1	25.0
	12H	23.9	24.7	24.7	25.4	26.3	23.7	24.5	24.5	25.2	26.1
	8H 4H	20.7	21.5	21.4	22.2	23.1	20.5	21.3	21.3	22.1	22.9
	6H	22.7	23.4	23.5	24.2	25.1	22.5	23.2	23.3	24.0	24.9
	8H	23.9	24.5	24.7	25.3	26.2	23.7	24.3	24.5	25.1	26.0
	12H	25.2	25.7	26.0	26.5	27.5	25.0	25.6	25.8	26.4	27.3
	12H 4H	20.8	21.6	21.6	22.3	23.2	20.7	21.4	21.4	22.2	23.1
	6H	23.0	23.6	23.8	24.4	25.3	22.8	23.4	23.6	24.2	25.2
	8H	24.2	24.8	25.0	25.6	26.6	24.1	24.6	24.9	25.4	26.4
Variations with the observer position at spacings:											
S = 1.0H		+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.3 / - 0.4					+ 0.3 / - 0.4				

CIE Pub.117 Corrected 163.6 lm Total Lamp Luminous Flux. (8log(F/F0) = -6.3)

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2013-03-01

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 8.920m [K=1.0000]  
 Remarks:

UTILIZATION FACTORS TABLE

NAME: P45塑料4W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: MK	SUR.:	PROTECTION ANGLE:

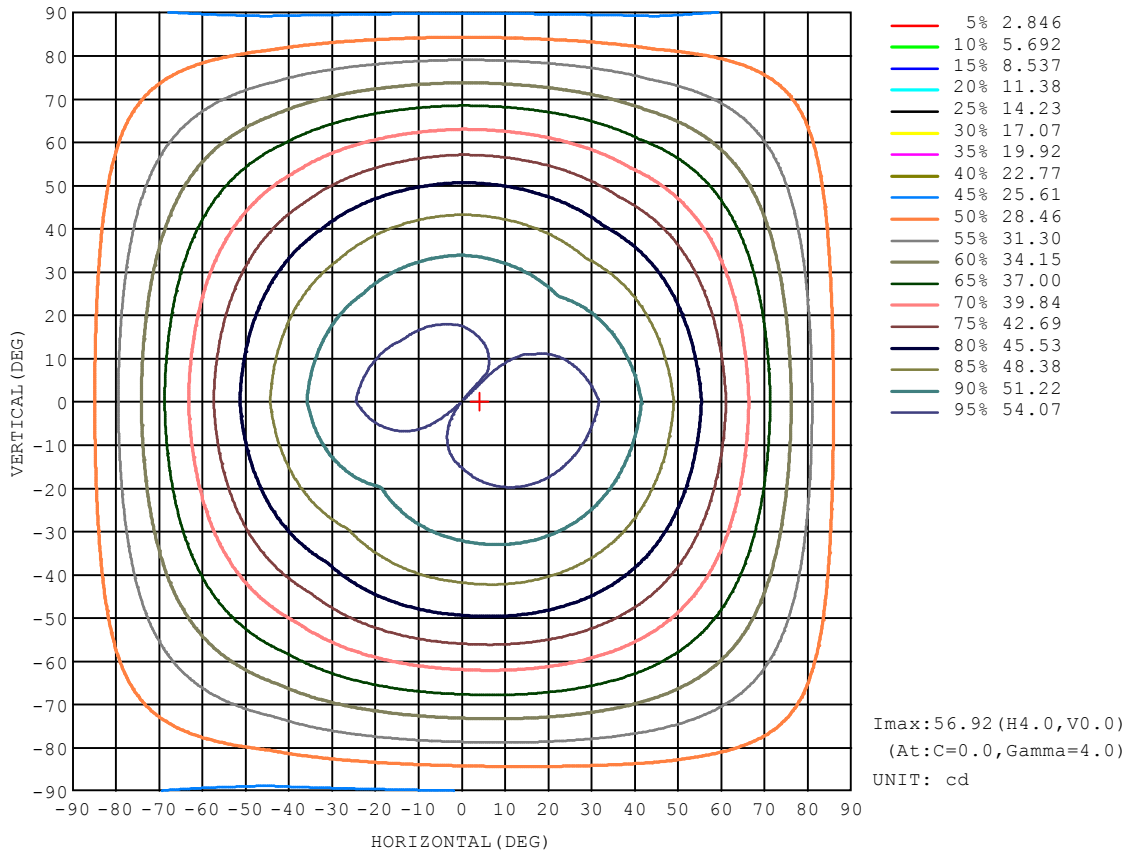
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	92	66	50	90	65	50	85	62	48	34
0.80	111	83	65	107	81	64	101	77	62	45
1.00	127	99	80	122	96	79	114	96	76	56
1.25	142	113	94	136	110	92	126	104	88	66
1.50	153	125	106	146	121	103	134	113	98	74
2.00	168	143	124	161	138	121	147	128	114	86
2.50	178	155	137	170	149	133	155	138	124	94
3.00	186	165	148	178	159	143	161	146	133	101
4.00	197	179	164	187	171	157	170	157	146	111
5.00	204	188	174	194	179	167	175	164	154	118
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2013-03-01

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 8.920m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

NAME: P45塑料4W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: MK	SUR.:	PROTECTION ANGLE:

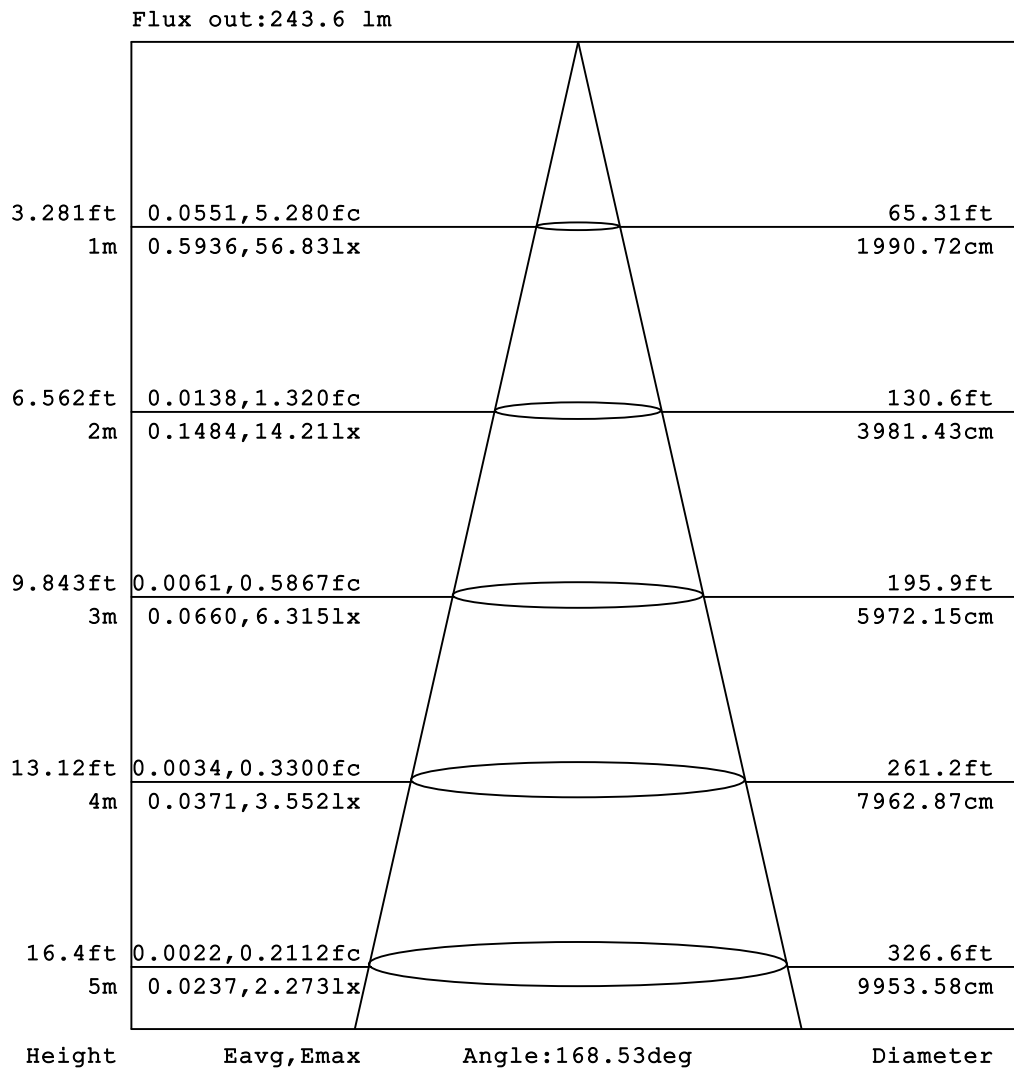


C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2013-03-01

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 8.920m [K=1.0000]  
 Remarks:

AAI Figure

NAME: P45塑料4W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: MK	SUR.:	PROTECTION ANGLE:



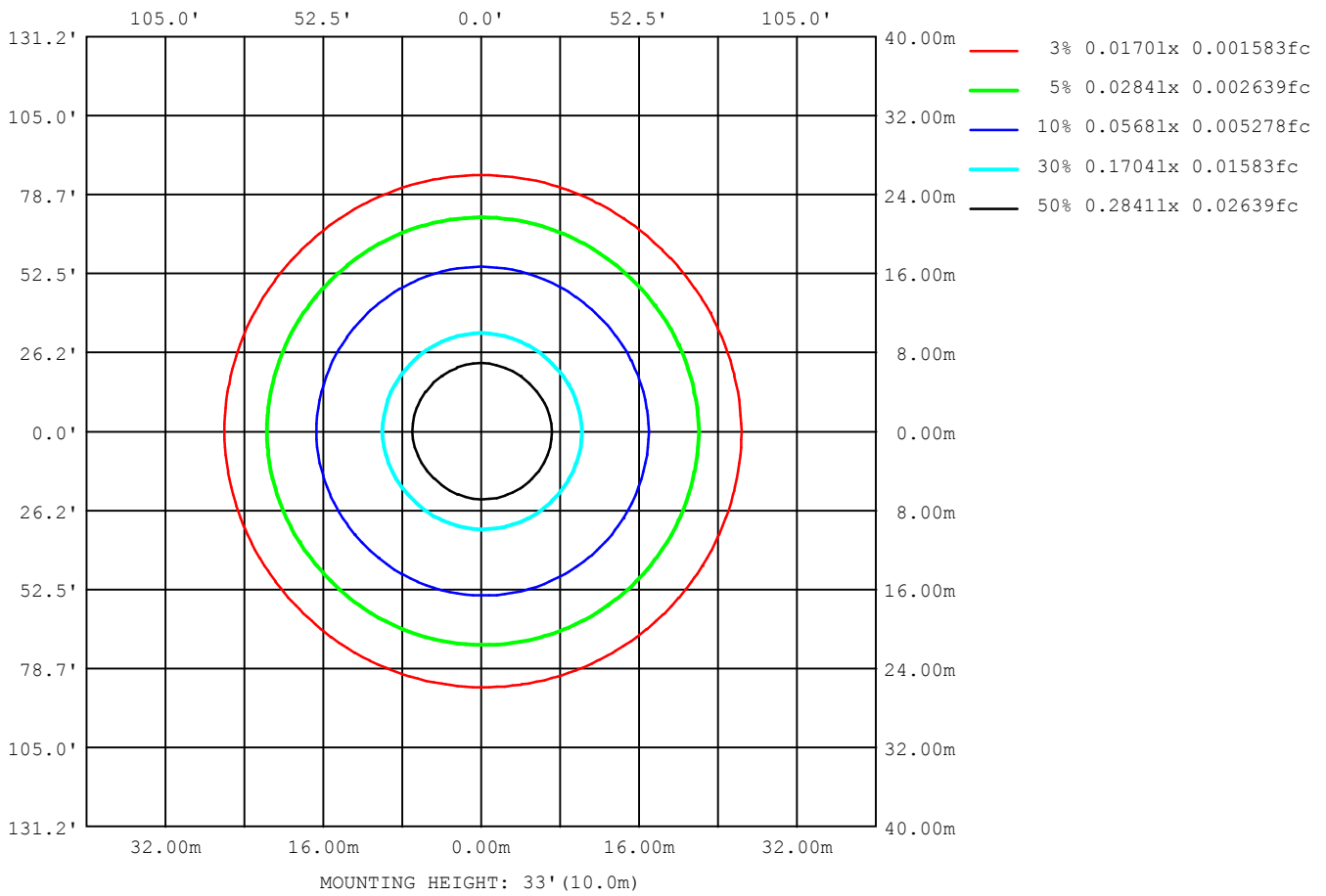
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2013-03-01

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 8.920m [K=1.0000]  
 Remarks:

ISOLUX DIAGRAM

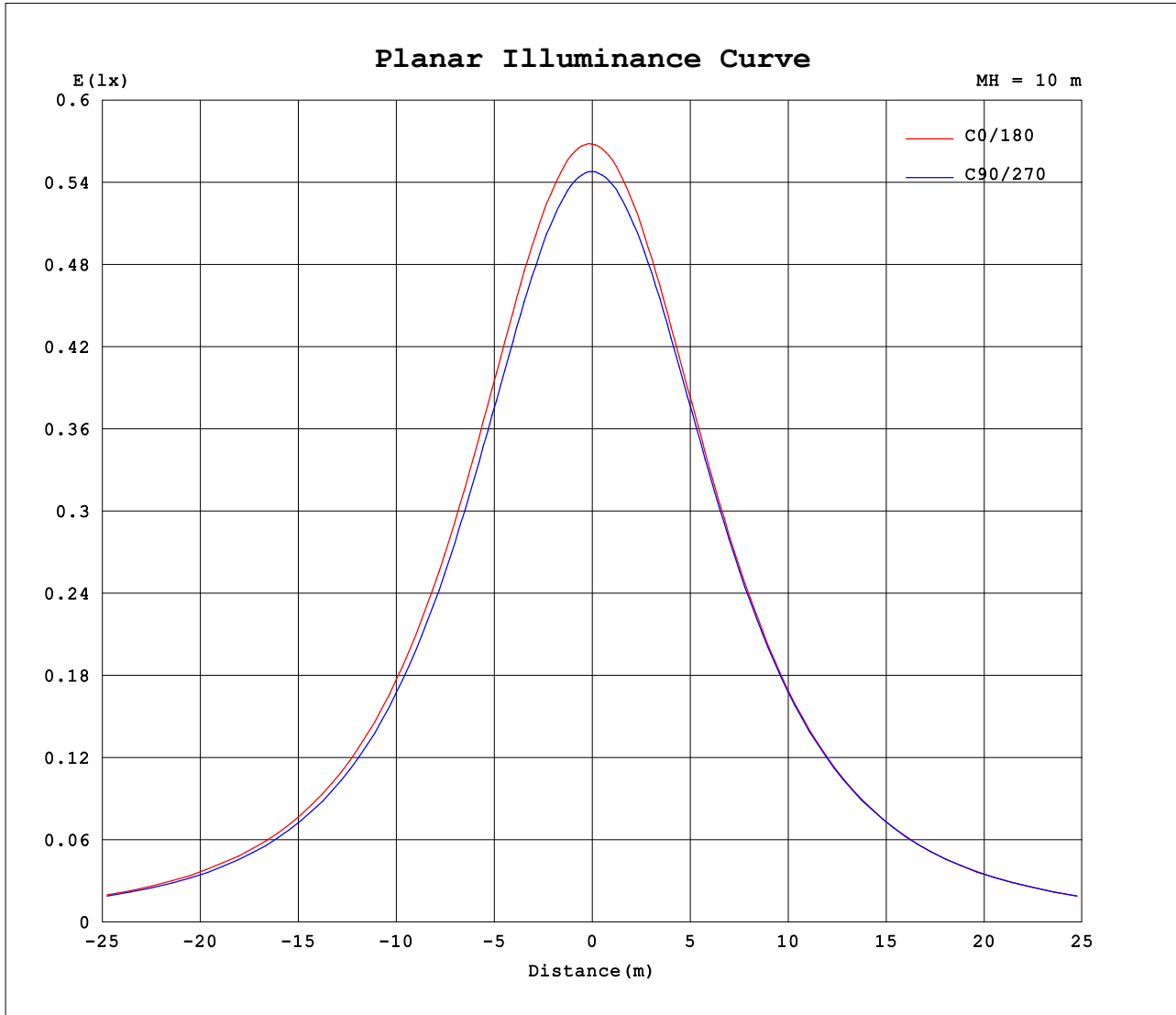
NAME: P45塑料4W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: MK	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2013-03-01

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 8.920m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2013-03-01

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 8.920m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: P45塑料4W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: MK	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	45	90	135	180	225	270	315										
0	56.8	55.8	54.8	53.9	56.8	55.8	54.8	53.9										
5	56.9	55.8	54.7	53.8	56.6	55.6	54.7	54.0										
10	56.8	55.7	54.5	53.5	56.2	55.2	54.6	54.0										
15	56.6	55.4	54.1	53.0	55.6	54.7	54.3	53.7										
20	56.2	54.9	53.5	52.4	54.9	54.0	53.8	53.2										
25	55.4	54.2	52.7	51.6	54.0	53.2	53.1	52.7										
30	54.5	53.2	51.7	50.6	52.9	52.1	52.1	51.8										
35	53.2	51.9	50.5	49.4	51.5	50.8	50.9	50.6										
40	51.7	50.4	49.0	48.0	49.9	49.2	49.4	49.2										
45	50.0	48.6	47.3	46.3	48.1	47.4	47.7	47.6										
50	48.0	46.6	45.3	44.4	46.1	45.4	45.8	45.7										
55	45.7	44.4	43.1	42.3	43.8	43.1	43.6	43.5										
60	43.3	42.0	40.8	40.1	41.4	40.8	41.3	41.2										
65	40.6	39.5	38.4	37.7	38.9	38.3	38.8	38.7										
70	37.8	36.8	35.8	35.2	36.3	35.7	36.2	36.1										
75	34.8	34.1	33.2	32.7	33.7	33.1	33.5	33.4										
80	31.9	31.3	30.6	30.1	31.0	30.4	30.7	30.6										
85	29.0	28.6	28.1	27.6	28.4	27.8	28.0	27.9										
90	26.3	26.1	25.6	25.2	25.9	25.3	25.5	25.3										
95	23.8	23.7	23.3	23.0	23.6	23.0	23.1	22.9										
100	21.5	21.4	21.2	20.9	21.4	20.9	20.9	20.7										
105	19.3	19.3	19.1	18.9	19.4	18.9	18.9	18.7										
110	17.2	17.4	17.2	17.1	17.5	17.0	17.0	16.7										
115	15.3	15.5	15.4	15.4	15.8	15.3	15.2	14.8										
120	13.5	13.7	13.7	13.7	14.1	13.6	13.4	13.1										
125	11.8	12.0	12.1	12.2	12.5	12.0	11.8	11.5										
130	10.2	10.5	10.6	10.7	11.0	10.5	10.3	9.89										
135	8.73	8.99	9.18	9.32	9.58	9.14	8.83	8.41										
140	7.32	7.64	7.86	8.01	8.25	7.81	7.46	7.05										
145	6.06	6.36	6.65	6.80	7.00	6.61	6.23	5.84										
150	4.88	5.23	5.52	5.70	5.88	5.49	5.12	4.70										
155	3.83	4.20	4.51	4.70	4.86	4.49	4.12	3.73										
160	2.92	3.29	3.64	3.83	3.94	3.60	3.11	2.69										
165	2.01	2.35	2.75	3.03	3.14	2.60	1.87	1.51										
170	0.47	0.98	1.60	2.04	2.07	1.23	0.56	0.46										
175	0.44	0.44	0.43	0.43	0.76	0.44	0.44	0.42										
180	0.44	0.44	0.43	0.43	0.45	0.43	0.44	0.44										

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2013-03-01

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:8.920m [K=1.0000]  
 Remarks: