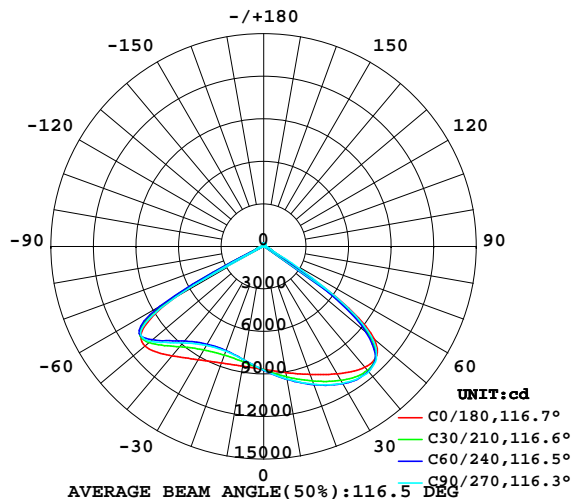


LUMINAIRE PHOTOMETRIC TEST REPORT

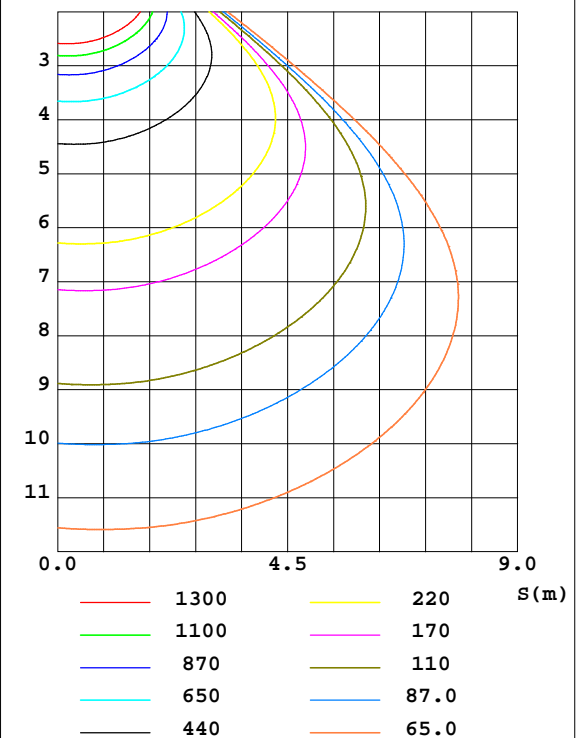
Test:U:220.5V I:1.095A P:236.8W PF:0.9800 Lamp Flux:32235.4x1 lm		
NAME: IHB-240W-120°	TYPE:LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 136.13 lm/W			
MODEL	IHB-240W-120°	Imax(cd)	11544	S/MH(C0/180)	1.80
NOMINAL POWER(W)	240	LOR(%)	100.0	S/MH(C90/270)	1.78
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	32235	η UP,DN(C0-180)	1.3,47.8
NOMINAL FLUX(lm)	32235.4	CIE CLASS	DIRECT	η UP,DN(C180-360)	1.4,49.5
LAMPS INSIDE	1	η up(%)	2.7	CIBSE SHR NOM	1.75
TEST VOLTAGE(V)	220.5	η down(%)	97.3	CIBSE SHR MAX	1.75

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:DAMIN
Test Date:2018-04-05

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	903.9	942.7	949.6	917.1	857.6	819.7	812.7	850.5	0- 10	836.9	836.9	2.6,2.6
20	960.5	1024	1034	978.3	875.8	798.7	786.0	860.4	10- 20	2546	3383	10.5,10.5
30	1037	1104	1115	1053	922.8	820.2	807.0	907.7	20- 30	4364	7747	24,24
40	1112	1145	1154	1120	1008	897.6	888.1	1001	30- 40	6327	14074	43.7,43.7
50	1019	958.9	994.5	1067	1093	1039	1040	1083	40- 50	8180	22254	69,69
60	127.7	127.5	175.0	296.9	725.2	829.6	717.2	413.8	50- 60	7158	29412	91.2,91.2
70	43.05	43.82	45.77	49.64	60.34	58.55	52.91	52.53	60- 70	1422	30834	95.7,95.7
80	16.63	16.43	17.33	21.11	31.42	29.93	25.87	24.12	70- 80	384.1	31218	96.8,96.8
90	5.741	5.883	5.489	5.699	10.25	9.653	7.722	7.557	80- 90	148.4	31366	97.3,97.3
100	8.174	8.130	7.718	7.422	8.975	8.771	8.851	9.444	90-100	80.06	31446	97.6,97.6
110	11.46	11.35	10.93	10.56	12.14	11.81	11.99	12.72	100-110	105.4	31552	97.9,97.9
120	13.97	13.41	13.47	13.32	15.23	15.05	15.29	15.60	110-120	130.3	31682	98.3,98.3
130	15.09	14.68	14.53	14.84	16.82	16.84	17.10	17.23	120-130	136.1	31818	98.7,98.7
140	16.30	16.02	15.95	16.11	17.54	17.88	17.92	18.02	130-140	127.4	31945	99.1,99.1
150	18.97	18.78	18.56	18.18	18.85	18.91	19.04	19.15	140-150	111.3	32057	99.4,99.4
160	21.87	21.66	21.49	21.02	21.40	21.24	21.38	21.35	150-160	92.61	32149	99.7,99.7
170	23.64	23.33	23.29	22.89	23.60	23.38	23.58	23.31	160-170	63.38	32213	99.9,99.9
180	24.41	24.20	24.35	23.84	24.40	24.20	24.35	23.83	170-180	22.64	32235	100,100
DEG	LUMINOUS INTENSITY:×10cd									UNIT: lm		

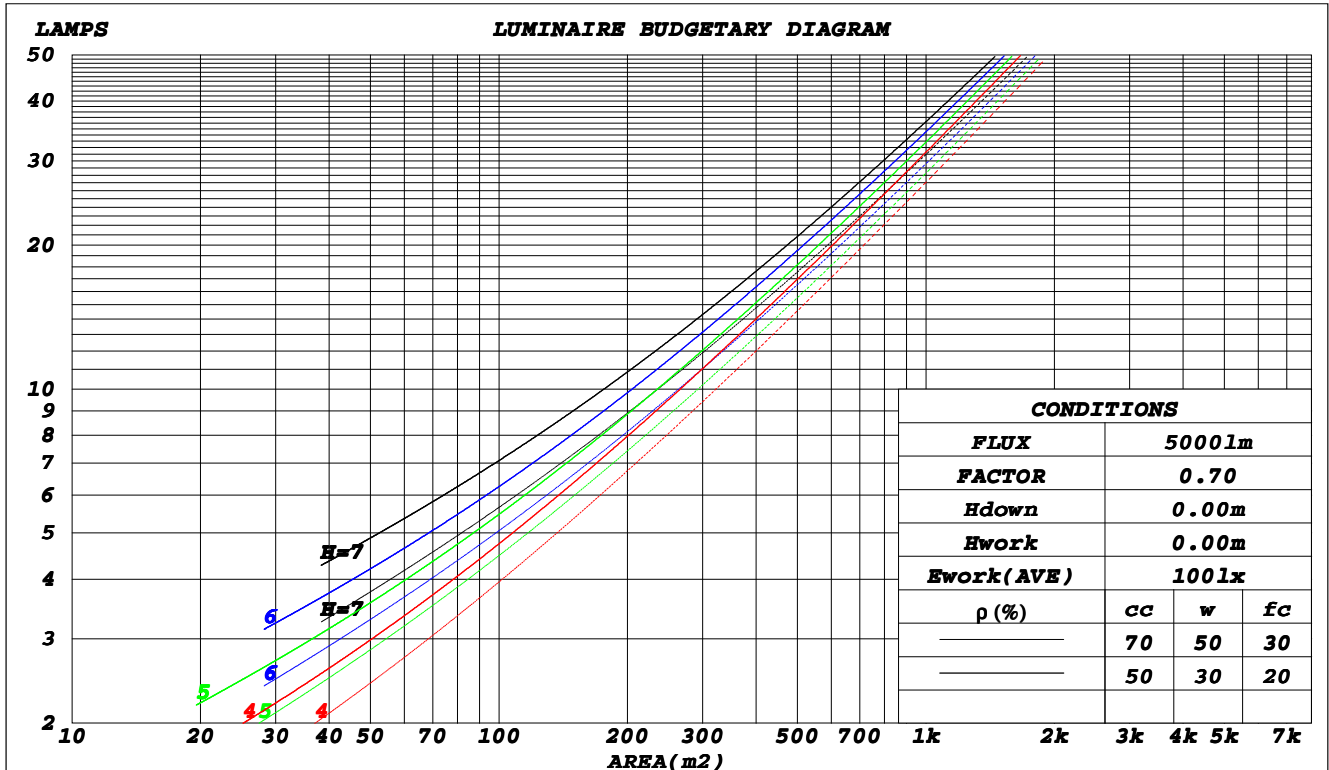
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-04-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.5V I:1.095A P:236.8W PF:0.9800 Lamp Flux:32235.4x1 lm		
NAME: IHB-240W-120°	TYPE:LED	
MFR.:		

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{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	1.10	1.10	1.10	1.04	1.04	1.04	.00	.00	.00	.97
1.0	1.06	1.02	.99	1.03	1.00	.97	.99	.96	.94	.94	.92	.90	.90	.89	.87	.85
2.0	.94	.87	.82	.91	.86	.81	.88	.83	.79	.84	.80	.77	.81	.78	.75	.73
3.0	.83	.75	.69	.81	.74	.68	.78	.72	.67	.75	.70	.65	.72	.68	.64	.62
4.0	.73	.65	.59	.72	.64	.58	.69	.62	.57	.66	.61	.56	.64	.59	.55	.53
5.0	.65	.56	.50	.64	.56	.50	.61	.54	.49	.59	.53	.48	.57	.52	.47	.45
6.0	.58	.50	.43	.57	.49	.43	.55	.48	.42	.53	.47	.42	.51	.46	.41	.39
7.0	.52	.44	.38	.51	.43	.38	.50	.42	.37	.48	.41	.37	.46	.41	.36	.34
8.0	.47	.39	.33	.47	.39	.33	.45	.38	.33	.44	.37	.32	.42	.36	.32	.30
9.0	.43	.35	.29	.42	.35	.29	.41	.34	.29	.40	.33	.29	.39	.33	.28	.27
10.0	.39	.32	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.35	.30	.25	.24



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2018-04-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.7063]
 Remarks:

WEC AND CCEC

Test:U:220.5V I:1.095A P:236.8W PF:0.9800 Lamp Flux:32235.4x1 lm											
NAME: IHB-240W-120°						TYPE:LED					
MFR.:											

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.260	.148	.047	.252	.144	.046	.238	.136	.044	.225	.130	.042	.212	.123	.040	
2.0	.256	.140	.043	.249	.137	.042	.236	.131	.041	.224	.126	.039	.214	.121	.038	
3.0	.245	.130	.039	.239	.128	.039	.228	.123	.037	.217	.119	.036	.207	.115	.036	
4.0	.232	.121	.035	.227	.119	.035	.216	.115	.034	.207	.111	.034	.198	.108	.033	
5.0	.219	.111	.032	.214	.110	.032	.205	.107	.031	.196	.104	.031	.188	.101	.030	
6.0	.206	.103	.030	.202	.102	.029	.193	.099	.029	.186	.096	.028	.179	.094	.028	
7.0	.194	.096	.027	.190	.095	.027	.182	.092	.027	.176	.090	.026	.169	.088	.026	
8.0	.182	.089	.025	.179	.088	.025	.172	.086	.025	.166	.084	.024	.160	.082	.024	
9.0	.172	.083	.023	.169	.082	.023	.163	.080	.023	.157	.079	.023	.152	.077	.022	
10.0	.162	.078	.022	.160	.077	.022	.154	.075	.021	.149	.074	.021	.144	.072	.021	

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.211	.211	.211	.180	.180	.180	.123	.123	.123	.071	.071	.071	.023	.023	.023	
1.0	.198	.177	.159	.169	.152	.137	.116	.105	.095	.067	.061	.055	.021	.019	.018	
2.0	.188	.153	.123	.161	.132	.107	.111	.091	.074	.064	.053	.044	.020	.017	.014	
3.0	.181	.135	.099	.155	.117	.086	.106	.081	.060	.061	.047	.035	.020	.015	.012	
4.0	.174	.122	.082	.149	.105	.071	.102	.073	.050	.059	.043	.030	.019	.014	.010	
5.0	.167	.111	.070	.144	.096	.061	.099	.067	.043	.057	.039	.026	.018	.013	.008	
6.0	.161	.103	.061	.138	.089	.054	.095	.062	.038	.055	.037	.023	.018	.012	.007	
7.0	.155	.096	.055	.133	.083	.048	.092	.058	.034	.053	.034	.020	.017	.011	.007	
8.0	.149	.091	.050	.128	.079	.044	.089	.055	.031	.052	.033	.019	.017	.011	.006	
9.0	.143	.086	.047	.123	.074	.041	.086	.052	.029	.050	.031	.017	.016	.010	.006	
10.0	.138	.081	.044	.119	.071	.038	.083	.050	.027	.048	.029	.016	.016	.010	.005	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-04-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

Uncorrected UGR Table

Test:U:220.5V I:1.095A P:236.8W PF:0.9800 Lamp Flux:32235.4x1 lm										
NAME: IHB-240W-120°					TYPE:LED					
MFR.:										
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	32.8	34.2	33.1	34.4	34.7	32.7	34.1	33.0	34.4	34.6
3H	32.6	33.9	32.9	34.2	34.5	32.5	33.8	32.9	34.1	34.4
4H	32.5	33.7	32.8	34.0	34.3	32.5	33.7	32.8	34.0	34.3
6H	32.4	33.6	32.8	33.9	34.2	32.4	33.5	32.7	33.8	34.2
8H	32.4	33.5	32.7	33.8	34.1	32.3	33.4	32.7	33.8	34.1
12H	32.3	33.4	32.7	33.7	34.1	32.3	33.3	32.7	33.7	34.0
4H 2H	32.6	33.8	32.9	34.1	34.4	32.5	33.8	32.9	34.0	34.4
3H	32.4	33.5	32.8	33.8	34.2	32.4	33.4	32.8	33.8	34.1
4H	32.4	33.3	32.8	33.7	34.1	32.3	33.3	32.7	33.6	34.0
6H	32.3	33.1	32.7	33.5	33.9	32.3	33.1	32.7	33.5	33.9
8H	32.3	33.0	32.7	33.4	33.9	32.2	33.0	32.7	33.4	33.8
12H	32.2	32.9	32.7	33.4	33.8	32.2	32.9	32.7	33.3	33.8
8H 4H	32.2	33.0	32.7	33.4	33.8	32.2	33.0	32.7	33.4	33.8
6H	32.2	32.8	32.7	33.3	33.7	32.2	32.8	32.6	33.2	33.7
8H	32.2	32.7	32.7	33.2	33.7	32.1	32.7	32.6	33.2	33.7
12H	32.1	32.6	32.7	33.1	33.6	32.1	32.6	32.6	33.1	33.6
12H 4H	32.2	32.9	32.7	33.3	33.8	32.2	32.9	32.6	33.3	33.7
6H	32.2	32.7	32.7	33.2	33.7	32.1	32.7	32.6	33.1	33.6
8H	32.1	32.6	32.7	33.1	33.6	32.1	32.6	32.6	33.1	33.6
Variations with the observer position at spacings:										
S = 1.0H	+ 1.5 / - 2.3					+ 1.3 / - 2.2				
1.5H	+ 1.0 / - 2.4					+ 0.9 / - 2.0				
2.0H	+ 3.4 / - 9.3					+ 3.3 / - 9.1				

CIE Pub.117 Corrected 32235 lm Total Lamp Luminous Flux.(8log(F/F0) = 12.1)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-04-05

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.5V I:1.095A P:236.8W PF:0.9800 Lamp Flux:32235.4x1 lm		
NAME: IHB-240W-120°	TYPE:LED	
MFR.:		

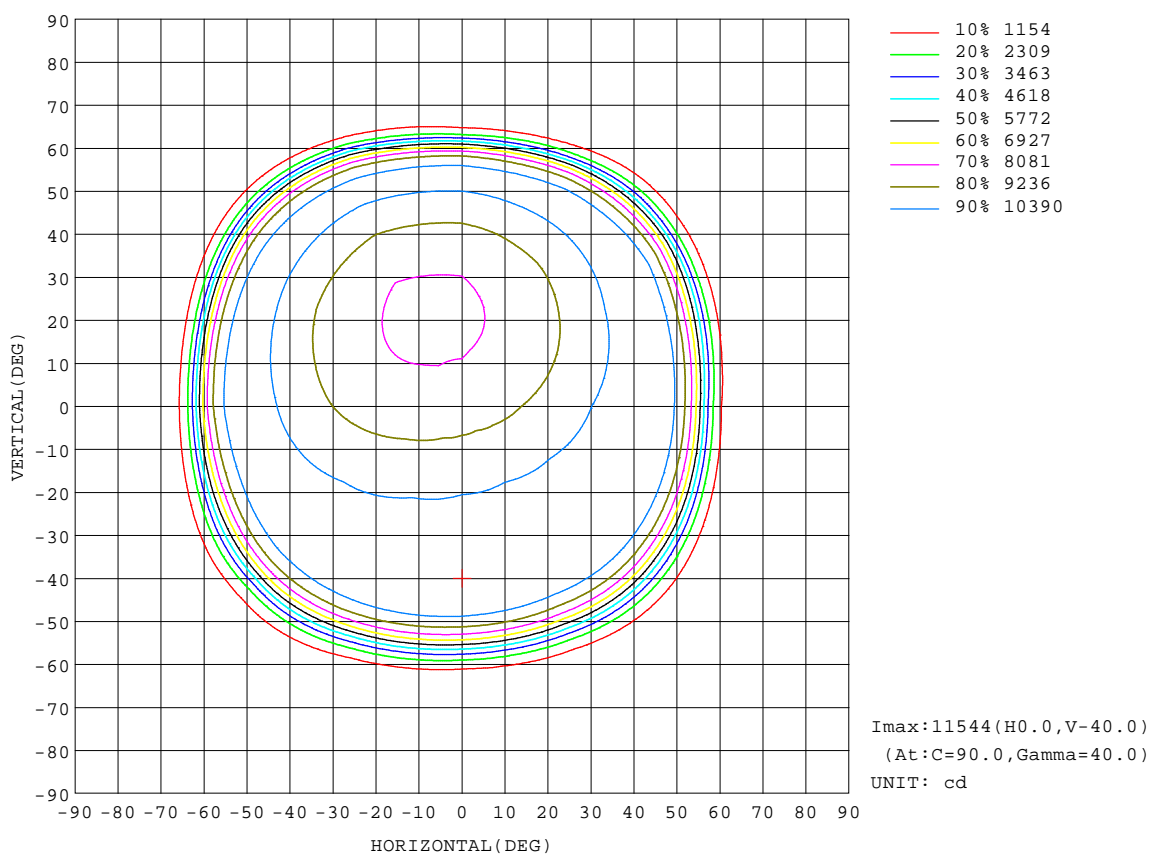
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	55	43	35	54	42	35	52	42	35	28
0.80	67	55	48	66	55	47	64	54	47	40
1.00	77	67	60	76	66	59	74	67	59	52
1.25	85	76	69	84	75	68	81	73	67	60
1.50	90	81	75	89	80	75	86	78	73	66
2.00	98	90	84	96	89	83	92	86	82	74
2.50	101	94	89	99	92	87	95	89	85	77
3.00	104	98	93	102	96	92	97	93	89	80
4.00	107	102	98	105	100	96	100	96	93	84
5.00	109	104	101	106	102	99	101	98	95	86
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:DAMIN
Test Date:2018-04-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.5V I:1.095A P:236.8W PF:0.9800 Lamp Flux:32235.4x1 lm		
NAME: IHB-240W-120°	TYPE:LED	
MFR.:		



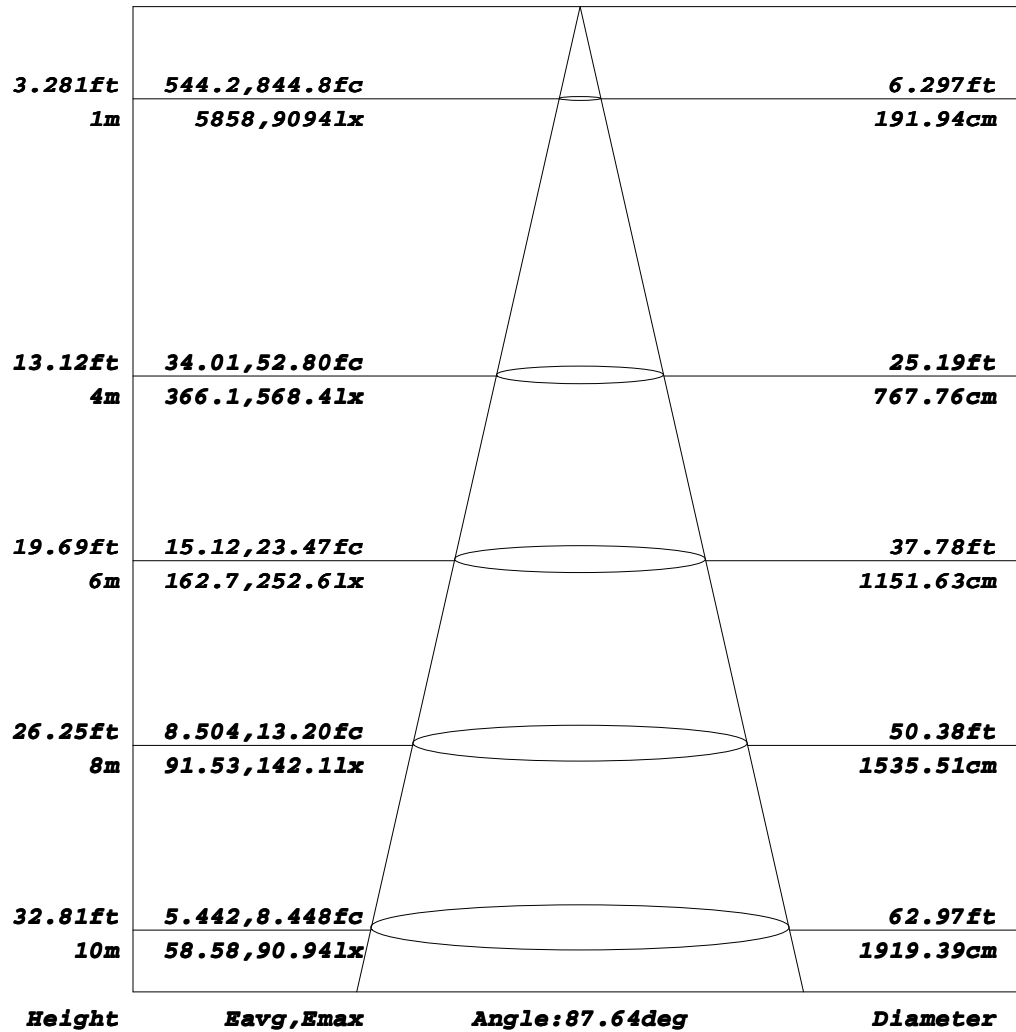
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-04-05

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

AAI Figure

Test:U:220.5V I:1.095A P:236.8W PF:0.9800 Lamp Flux:32235.4x1 lm		
NAME: IHB-240W-120°	TYPE:LED	
MFR.:		

Flux out:17162 lm



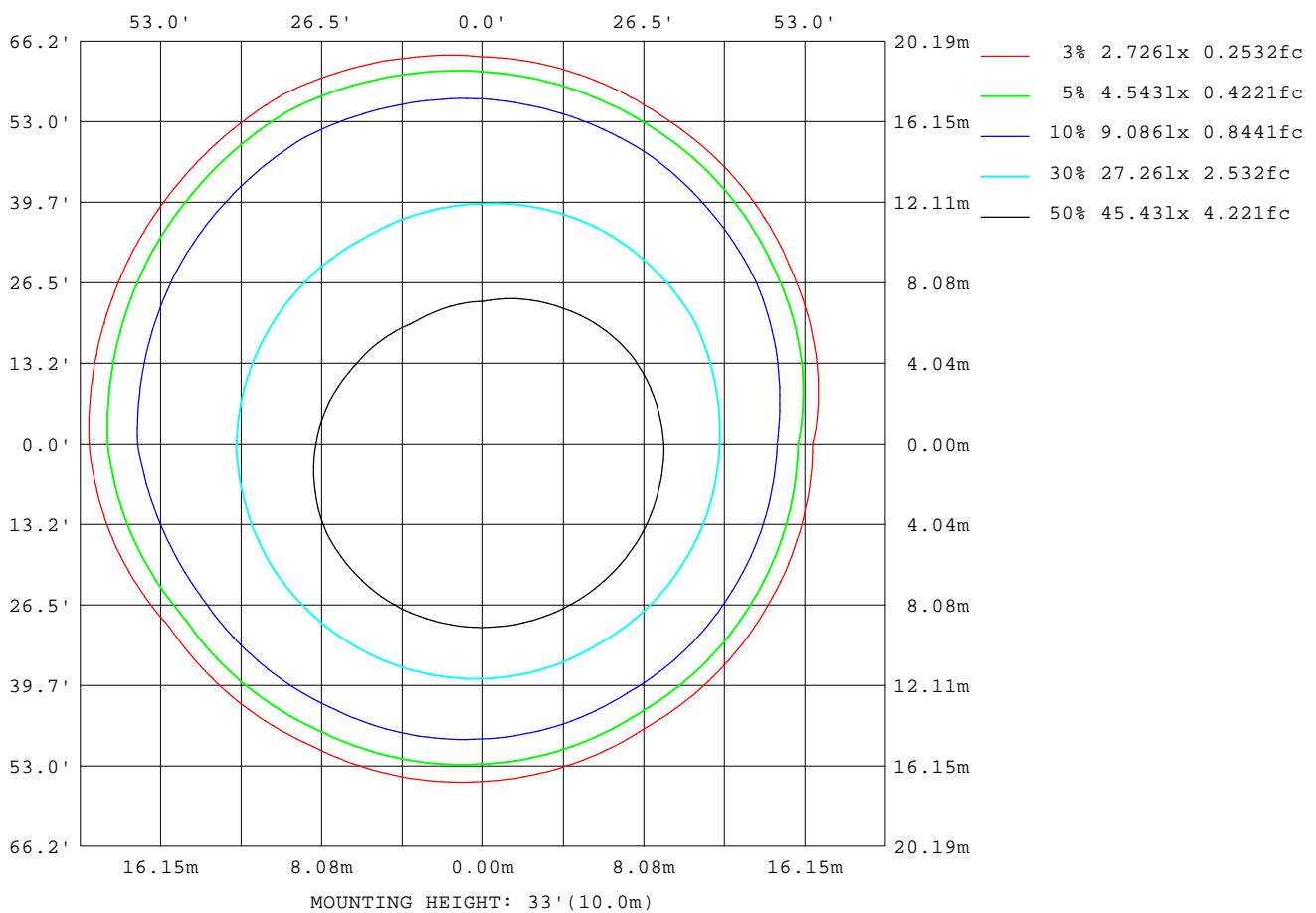
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-04-05

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

ISOLUX DIAGRAM

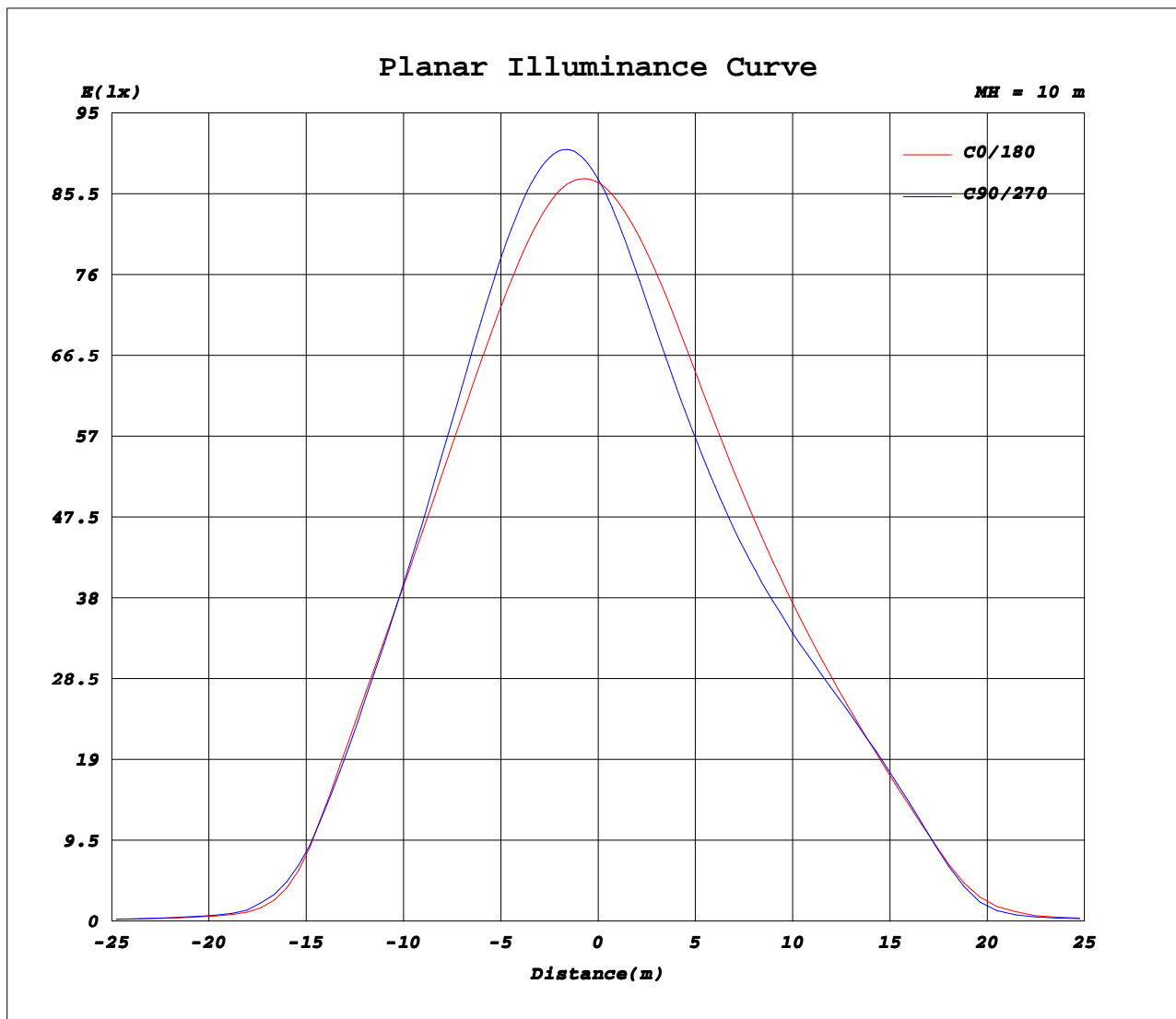
Test:U:220.5V I:1.095A P:236.8W PF:0.9800 Lamp Flux:32235.4x1 lm		
NAME: IHB-240W-120°	TYPE:LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-04-05

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-04-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.5V I:1.095A P:236.8W PF:0.9800 Lamp Flux:32235.4x1 lm																	
NAME: IHB-240W-120°									TYPE:LED								
MFR.:																	

Table--1

UNIT: x10cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	868	870	873	873	873	871	868	870	873	873	873	871						
5	883	899	911	910	901	883	860	846	841	840	851	865						
10	904	934	952	950	933	901	858	827	812	813	834	867						
15	930	970	994	991	968	924	863	817	792	794	826	876						
20	961	1010	1037	1034	1006	951	876	816	782	786	829	892						
25	997	1051	1080	1077	1045	983	895	825	783	790	841	917						
30	1037	1091	1118	1115	1085	1020	923	843	797	807	865	951						
35	1079	1124	1146	1143	1120	1060	960	875	825	838	902	995						
40	1112	1140	1150	1154	1142	1098	1008	924	871	888	955	1046						
45	1115	1115	1113	1123	1132	1120	1058	989	940	959	1021	1091						
50	1019	974	944	994	1044	1090	1093	1055	1023	1040	1075	1091						
55	631	551	527	624	747	906	1050	1069	1072	1061	1022	910						
60	128	132	123	175	228	365	725	812	848	717	537	290						
65	58.4	59.3	60.9	64.8	69.2	78.6	155	155	179	102	82.7	71.4						
70	43.0	43.5	44.1	45.8	48.6	50.7	60.3	60.2	56.9	52.9	53.1	52.0						
75	28.4	28.5	28.5	29.7	33.1	36.7	46.1	45.7	42.9	39.1	38.7	37.1						
80	16.6	16.7	16.1	17.3	19.2	23.0	31.4	31.3	28.6	25.9	24.7	23.5						
85	7.89	8.19	8.10	8.83	10.4	13.0	19.5	19.3	17.5	15.0	14.6	13.1						
90	5.74	5.89	5.87	5.49	5.62	5.78	10.2	9.93	9.38	7.72	7.53	7.59						
95	6.78	6.84	6.72	6.35	6.23	6.02	7.86	7.78	7.57	7.56	7.88	8.29						
100	8.17	8.19	8.07	7.72	7.51	7.33	8.97	8.87	8.67	8.85	9.21	9.68						
105	9.78	9.76	9.61	9.25	8.99	8.80	10.5	10.3	10.1	10.3	10.7	11.3						
110	11.5	11.4	11.3	10.9	10.7	10.5	12.1	11.9	11.7	12.0	12.4	13.0						
115	13.0	12.7	12.6	12.5	12.3	12.1	13.8	13.6	13.5	13.7	14.2	14.6						
120	14.0	13.5	13.3	13.5	13.3	13.4	15.2	15.1	15.0	15.3	15.5	15.7						
125	14.6	14.2	14.0	14.0	14.0	14.2	16.2	16.0	16.1	16.4	16.4	16.4						
130	15.1	14.8	14.6	14.5	14.8	14.9	16.8	16.9	16.8	17.1	17.2	17.2						
135	15.6	15.4	15.2	15.2	15.5	15.5	17.2	17.5	17.5	17.6	17.8	17.7						
140	16.3	16.1	16.0	15.9	16.1	16.1	17.5	17.8	17.9	17.9	18.0	18.0						
145	17.5	17.3	17.2	17.0	17.0	16.9	17.9	18.1	18.2	18.3	18.3	18.4						
150	19.0	18.8	18.7	18.6	18.3	18.0	18.8	18.9	18.9	19.0	19.1	19.2						
155	20.5	20.3	20.2	20.1	19.8	19.4	20.1	20.0	20.0	20.2	20.1	20.3						
160	21.9	21.7	21.6	21.5	21.2	20.8	21.4	21.2	21.3	21.4	21.3	21.4						
165	22.9	22.8	22.6	22.6	22.4	22.0	22.6	22.4	22.5	22.6	22.4	22.5						
170	23.6	23.4	23.2	23.3	23.0	22.8	23.6	23.4	23.4	23.6	23.3	23.3						
175	24.2	24.0	23.9	24.0	23.6	23.3	24.3	24.0	24.0	24.2	23.9	23.8						
180	24.4	24.2	24.1	24.3	24.0	23.7	24.4	24.3	24.1	24.4	24.0	23.7						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-04-05

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks: