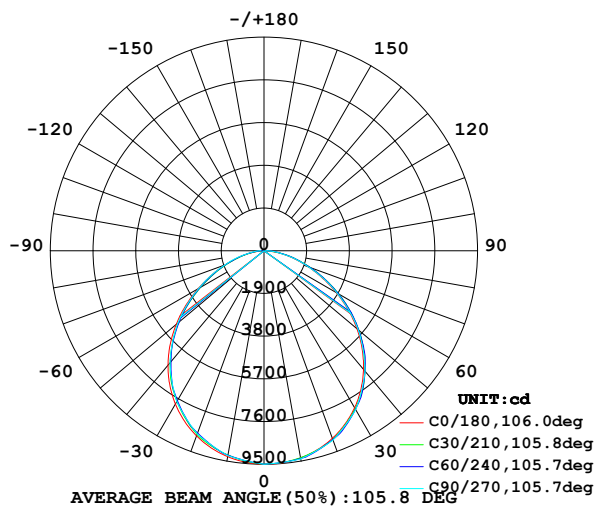


LUMINAIRE PHOTOMETRIC TEST REPORT

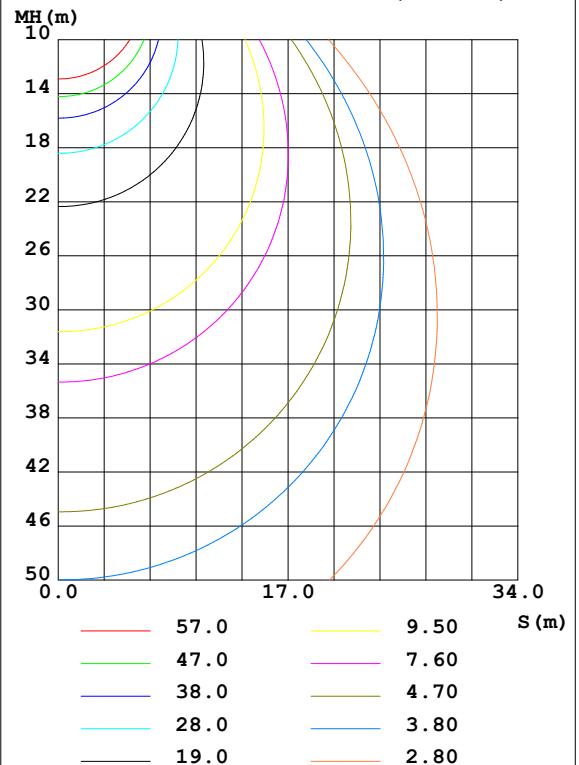
Test:U:220.3V I:0.9251A P:201.0W PF:0.9858 Lamp Flux:30117.9x1 lm		
NAME: PHB2004	TYPE:LED 3030	WEIGHT:6.3KG
SPEC.:110°	DIM.: φ365*180MM	SERIAL No.:1
MFR.: Integratech	SUR.:φ225MM	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 124.56 lm/W			
MODEL	PHB2004	I _{max} (cd)	9495	S/MH (C0/180)	1.24
NOMINAL POWER (W)	200	LOR (%)	83.1	S/MH (C90/270)	1.22
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	25031	η UP,DN (C0-180)	0.0,42.8
NOMINAL FLUX (lm)	30117.9	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,40.4
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	83.1	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2018-9-28

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:11.850m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

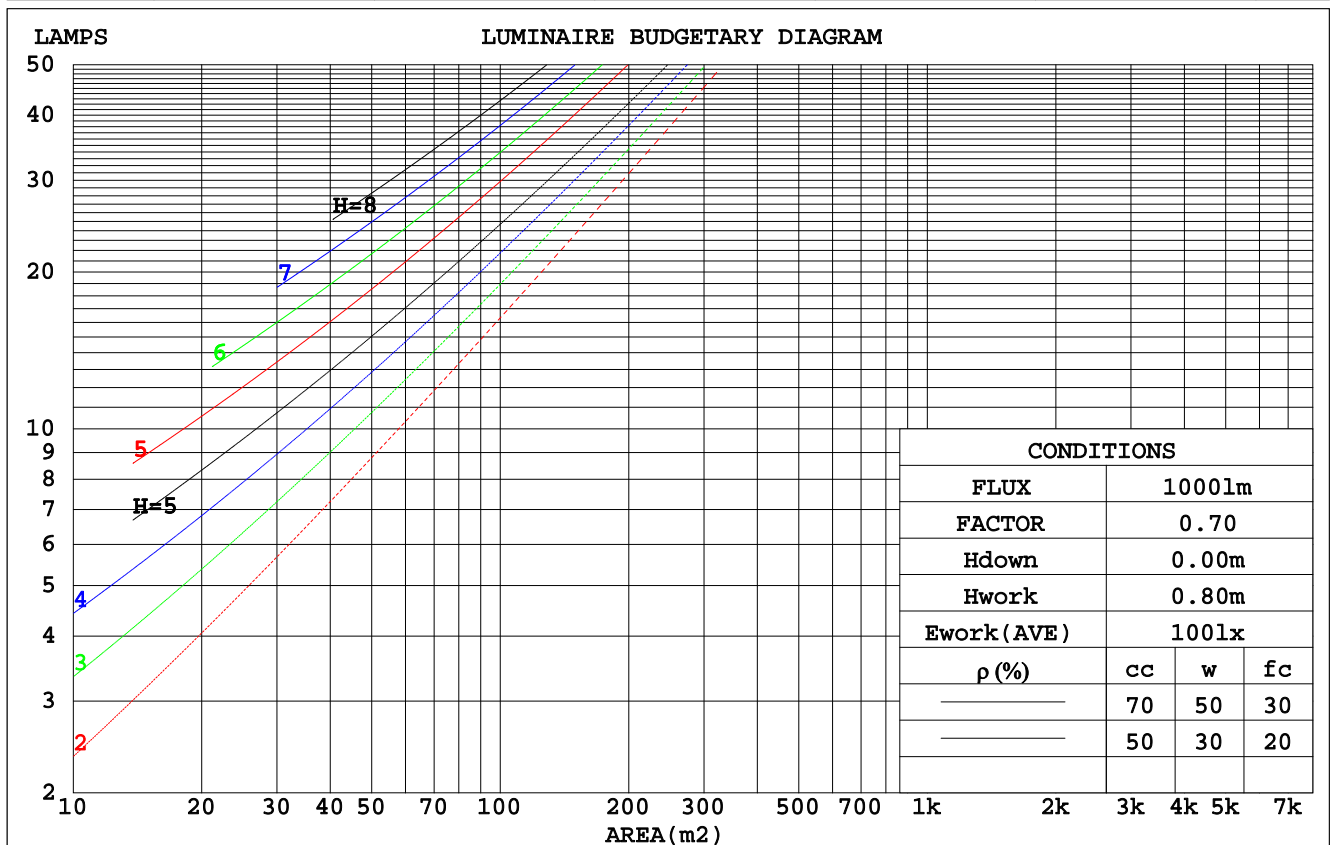
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	$\%lum, lamp$
5	9467	9450	9448	9431	9438	9378	9374	9398	0- 5	225.9	225.9	0.90,0.75
10	9358	9364	9402	9328	9299	9223	9254	9259	5- 10	669.7	895.6	3.58,2.97
15	9163	9211	9183	9158	9077	9000	8964	9053	10- 15	1091	1987	7.94,6.6
20	8882	8921	8964	8845	8766	8636	8674	8712	15- 20	1473	3460	13.8,11.5
25	8512	8591	8562	8488	8366	8231	8215	8331	20- 25	1804	5265	21,17.5
30	8057	8148	8160	8023	7879	7721	7756	7842	25- 30	2068	7332	29.3,24.3
35	7520	7608	7576	7467	7302	7124	7132	7260	30- 35	2255	9588	38.3,31.8
40	6887	7019	6992	6861	6644	6481	6509	6633	35- 40	2354	11941	47.7,39.6
45	6174	6293	6236	6105	5905	5709	5753	5886	40- 45	2360	14301	57.1,47.5
50	5401	5560	5480	5336	5099	4927	4998	5137	45- 50	2270	16571	66.2,55
55	4561	4688	4609	4473	4250	4089	4172	4286	50- 55	2090	18661	74.6,62
60	3700	3832	3737	3628	3391	3274	3346	3458	55- 60	1831	20492	81.9,68
65	2864	2987	2914	2787	2582	2490	2596	2666	60- 65	1522	22014	87.9,73.1
70	2092	2209	2091	2020	1842	1784	1845	1945	65- 70	1189	23204	92.7,77
75	1416	1495	1456	1337	1200	1165	1277	1297	70- 75	860.3	24064	96.1,79.9
80	824.8	930.6	820.9	799.5	673.4	692.6	709.1	796.2	75- 80	562.8	24627	98.4,81.8
85	264.8	455.6	445.6	371.9	155.8	311.6	423.0	376.2	80- 85	299.6	24926	99.6,82.8
90	18.80	72.86	70.32	66.93	33.29	18.96	137.0	29.30	85- 90	105.3	25031	100,83.1
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2018-9-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
 Humidity:65.0%
 Test Distance:11.850m [K=1.0000]
 Remarks:

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	.99	.99	.99	.97	.97	.97	.92	.92	.92	.88	.88	.88	.85	.85	.85	.83
1.0	.87	.84	.80	.85	.82	.79	.82	.79	.77	.78	.76	.74	.75	.74	.72	.70
2.0	.76	.71	.66	.75	.70	.65	.72	.67	.64	.69	.65	.62	.67	.64	.61	.59
3.0	.67	.61	.55	.66	.60	.55	.63	.58	.54	.61	.57	.53	.59	.55	.52	.50
4.0	.60	.53	.47	.59	.52	.47	.57	.51	.46	.55	.50	.46	.53	.49	.45	.43
5.0	.53	.46	.41	.53	.46	.41	.51	.45	.40	.49	.44	.40	.48	.43	.39	.38
6.0	.48	.41	.36	.47	.41	.36	.46	.40	.35	.45	.39	.35	.43	.38	.35	.33
7.0	.44	.37	.32	.43	.36	.32	.42	.36	.31	.41	.35	.31	.40	.35	.31	.29
8.0	.40	.33	.28	.39	.33	.28	.38	.32	.28	.37	.32	.28	.36	.31	.28	.26
9.0	.37	.30	.25	.36	.30	.25	.35	.29	.25	.34	.29	.25	.34	.29	.25	.24
10.0	.34	.27	.23	.34	.27	.23	.33	.27	.23	.32	.27	.23	.31	.26	.23	.21



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2018-9-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.290
 Humidity: 65.0%
 Test Distance: 11.850m [K=1.0000]
 Remarks:

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	.245	.140	.044	.240	.137	.043	.229	.131	.042	.219	.126	.040	.209	.121	.039	
2.0	.232	.127	.039	.227	.125	.039	.218	.121	.038	.209	.117	.037	.201	.113	.036	
3.0	.216	.115	.034	.212	.113	.034	.203	.110	.033	.195	.107	.033	.188	.104	.032	
4.0	.201	.104	.031	.197	.103	.030	.189	.100	.030	.182	.098	.030	.176	.095	.029	
5.0	.186	.095	.027	.183	.094	.027	.176	.092	.027	.170	.090	.027	.164	.088	.026	
6.0	.173	.087	.025	.170	.086	.025	.164	.084	.024	.159	.082	.024	.153	.081	.024	
7.0	.162	.080	.023	.159	.079	.023	.154	.078	.022	.149	.076	.022	.144	.075	.022	
8.0	.151	.074	.021	.149	.073	.021	.144	.072	.021	.140	.071	.020	.135	.070	.020	
9.0	.142	.069	.019	.140	.068	.019	.136	.067	.019	.132	.066	.019	.128	.065	.019	
10.0	.134	.064	.018	.132	.064	.018	.128	.063	.018	.124	.062	.018	.121	.061	.017	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.158	.158	.158	.135	.135	.135	.092	.092	.092	.053	.053	.053	.017	.017	.017	
1.0	.149	.130	.113	.128	.111	.097	.087	.077	.067	.050	.044	.039	.016	.014	.013	
2.0	.142	.110	.083	.121	.094	.071	.083	.065	.050	.048	.038	.029	.015	.012	.010	
3.0	.135	.095	.063	.116	.082	.055	.080	.057	.038	.046	.033	.023	.015	.011	.007	
4.0	.129	.084	.049	.111	.072	.043	.076	.050	.030	.044	.030	.018	.014	.010	.006	
5.0	.123	.075	.040	.105	.065	.035	.073	.045	.025	.042	.027	.015	.014	.009	.005	
6.0	.117	.068	.033	.100	.059	.029	.069	.041	.020	.040	.024	.012	.013	.008	.004	
7.0	.111	.062	.028	.096	.054	.024	.066	.038	.017	.038	.022	.010	.012	.007	.003	
8.0	.106	.058	.024	.091	.050	.021	.063	.035	.015	.037	.021	.009	.012	.007	.003	
9.0	.101	.053	.021	.087	.046	.019	.060	.033	.013	.035	.019	.008	.011	.006	.003	
10.0	.096	.050	.019	.083	.043	.016	.058	.030	.012	.034	.018	.007	.011	.006	.002	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2018-9-28

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:11.850m [K=1.0000]
Remarks:

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	31.3	32.8	31.6	33.0	33.2	31.4	32.9	31.6	33.1	33.3
3H	32.6	34.0	32.9	34.2	34.4	32.6	34.0	32.9	34.2	34.4
4H	33.1	34.4	33.4	34.6	34.9	33.1	34.4	33.4	34.6	34.9
6H	33.4	34.6	33.7	34.9	35.2	33.4	34.6	33.7	34.9	35.2
8H	33.5	34.7	33.8	35.0	35.2	33.5	34.7	33.9	35.0	35.3
12H	33.5	34.7	33.9	34.9	35.2	33.6	34.7	34.0	35.0	35.3
4H 2H	31.9	33.2	32.2	33.4	33.7	31.9	33.2	32.2	33.5	33.7
3H	33.3	34.5	33.7	34.8	35.1	33.3	34.5	33.7	34.8	35.1
4H	33.9	35.0	34.3	35.3	35.6	33.9	35.0	34.3	35.3	35.6
6H	34.4	35.3	34.8	35.7	36.0	34.4	35.3	34.8	35.7	36.0
8H	34.6	35.4	35.0	35.8	36.2	34.6	35.4	35.0	35.8	36.2
12H	34.6	35.4	35.0	35.8	36.2	34.7	35.5	35.1	35.9	36.3
8H 4H	34.2	35.0	34.6	35.4	35.8	34.2	35.0	34.6	35.4	35.8
6H	34.8	35.5	35.2	35.9	36.3	34.8	35.5	35.2	35.9	36.3
8H	35.0	35.6	35.5	36.1	36.5	35.0	35.6	35.5	36.1	36.5
12H	35.1	35.7	35.6	36.1	36.6	35.3	35.8	35.7	36.2	36.7
12H 4H	34.2	35.0	34.6	35.3	35.7	34.2	35.0	34.6	35.3	35.8
6H	34.8	35.5	35.3	35.9	36.3	34.8	35.4	35.3	35.9	36.3
8H	35.1	35.6	35.6	36.1	36.6	35.1	35.7	35.6	36.1	36.6
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.4					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.4					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 30118 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.8)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2018-9-28

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:11.850m [K=1.0000]
Remarks:

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	49	40	34	49	40	34	48	39	34	29
0.80	58	48	42	57	48	42	55	47	42	36
1.00	65	56	50	64	55	50	62	56	49	43
1.25	70	62	56	69	61	56	67	60	55	50
1.50	74	67	61	73	66	61	71	64	60	54
2.00	80	73	68	78	72	67	76	70	66	60
2.50	83	77	72	81	76	71	78	74	70	63
3.00	86	80	76	84	79	75	81	77	73	66
4.00	89	84	81	87	83	80	83	80	77	70
5.00	91	87	84	89	85	82	85	82	80	72
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2018-9-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
 Humidity:65.0%
 Test Distance:11.850m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Conical surface Flux(90deg):

14301 lm

%lum = 57.1%

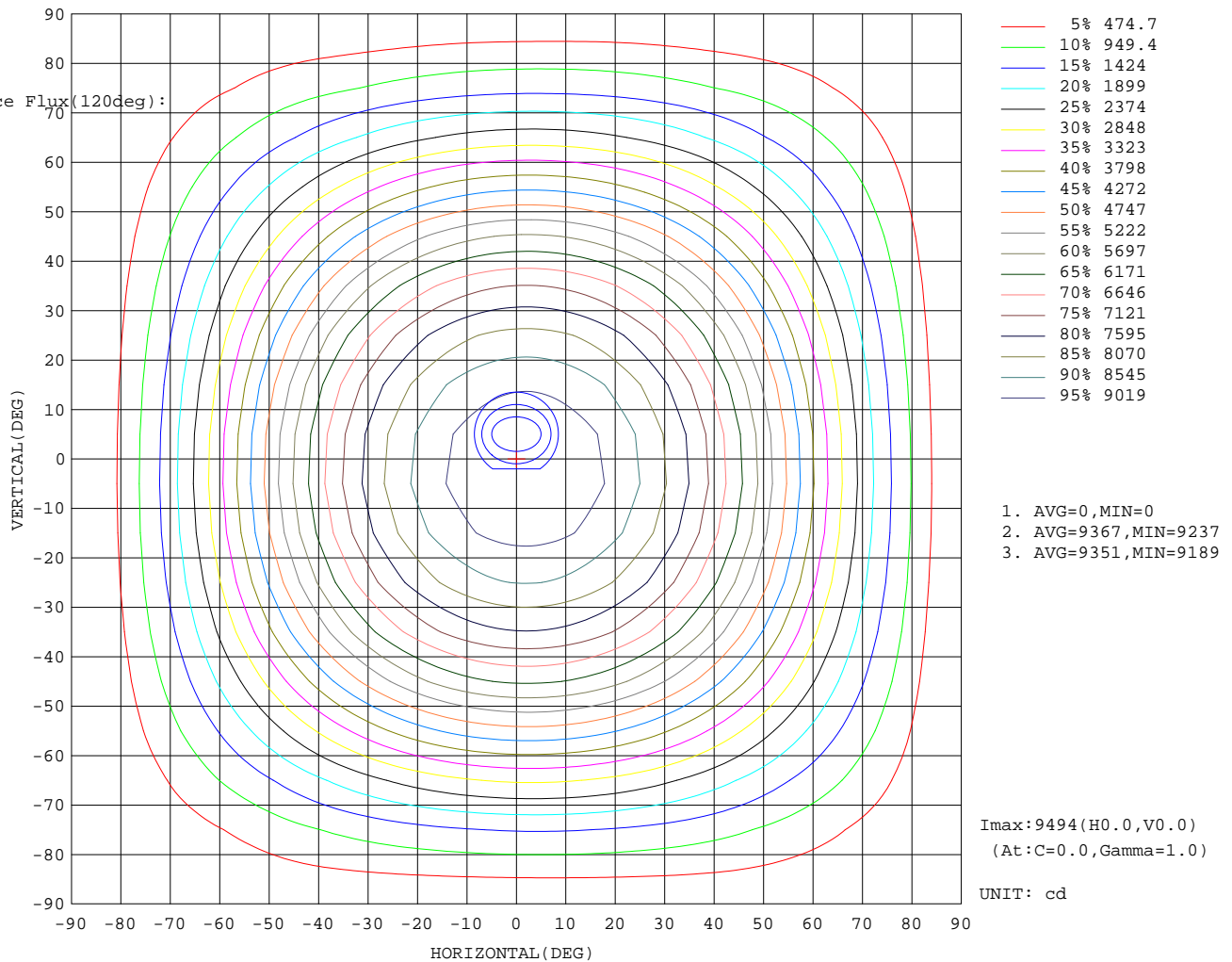
%lamp = 47.5%

Conical surface Flux(120deg):

20492 lm

%lum = 81.9%

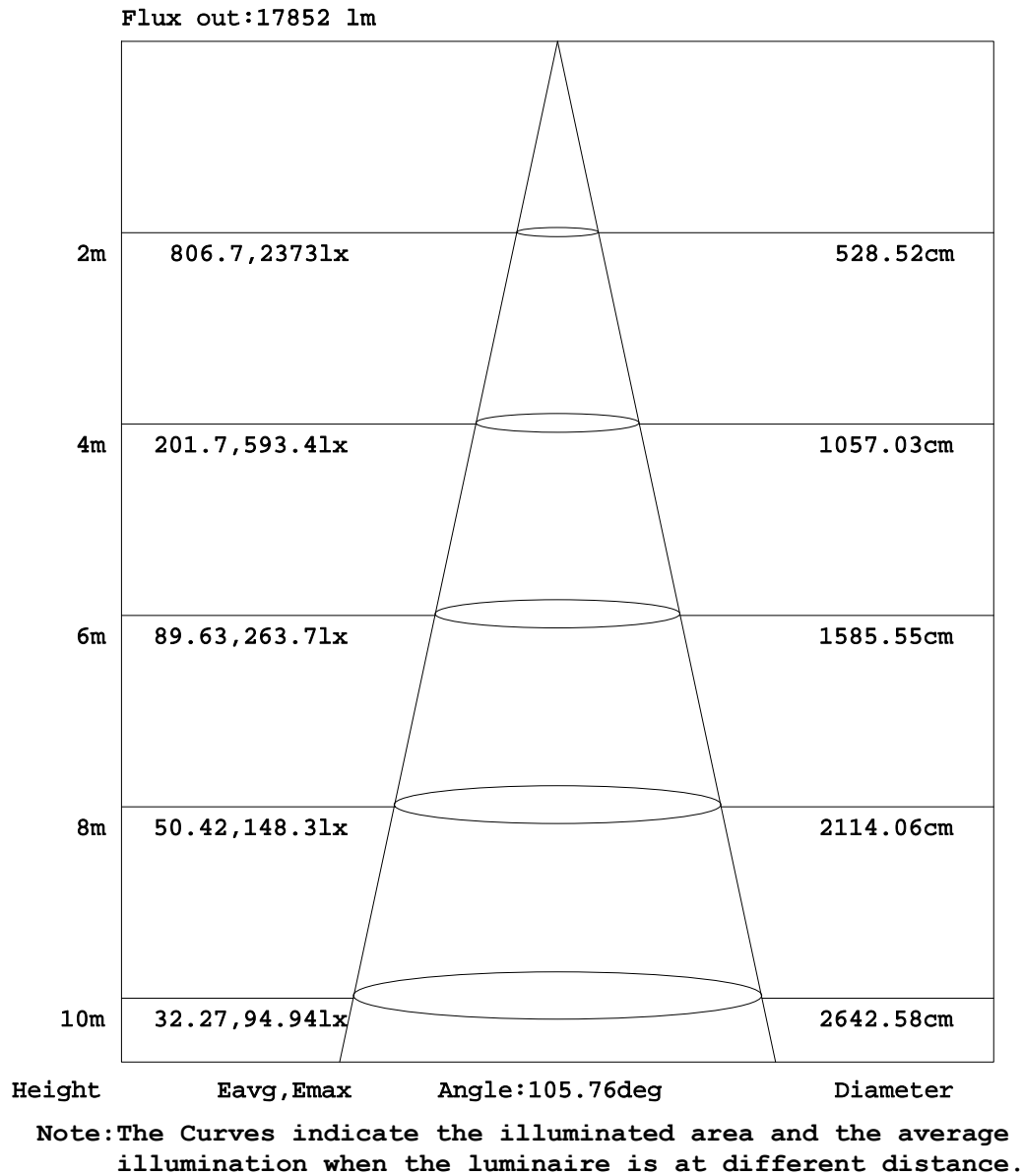
%lamp = 68.0%



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2018-9-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:11.850m [K=1.0000]
Remarks:

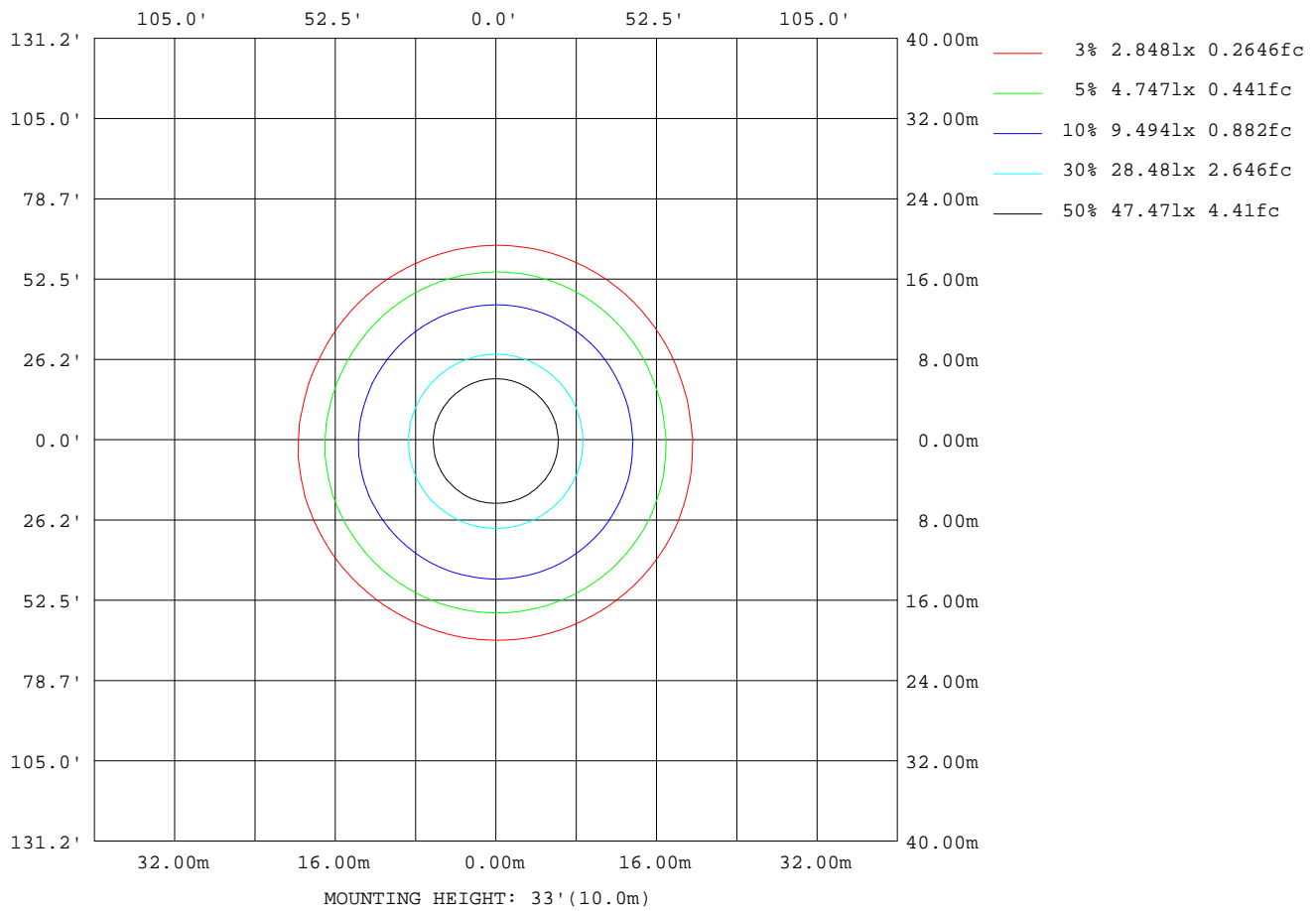
AAI Figure



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2018-9-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity: 65.0%
Test Distance: 11.850m [K=1.0000]
Remarks:

ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2018-9-28

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity: 65.0%
Test Distance: 11.850m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:220.3V I:0.9251A P:201.0W PF:0.9858 Lamp Flux:30117.9x1 lm		
NAME: PHB2004	TYPE:LED 3030	WEIGHT:6.3KG
SPEC.:110°	DIM.: φ365*180MM	SERIAL No.:1
MFR.: Integratech	SUR.:φ225MM	PROTECTION ANGLE:

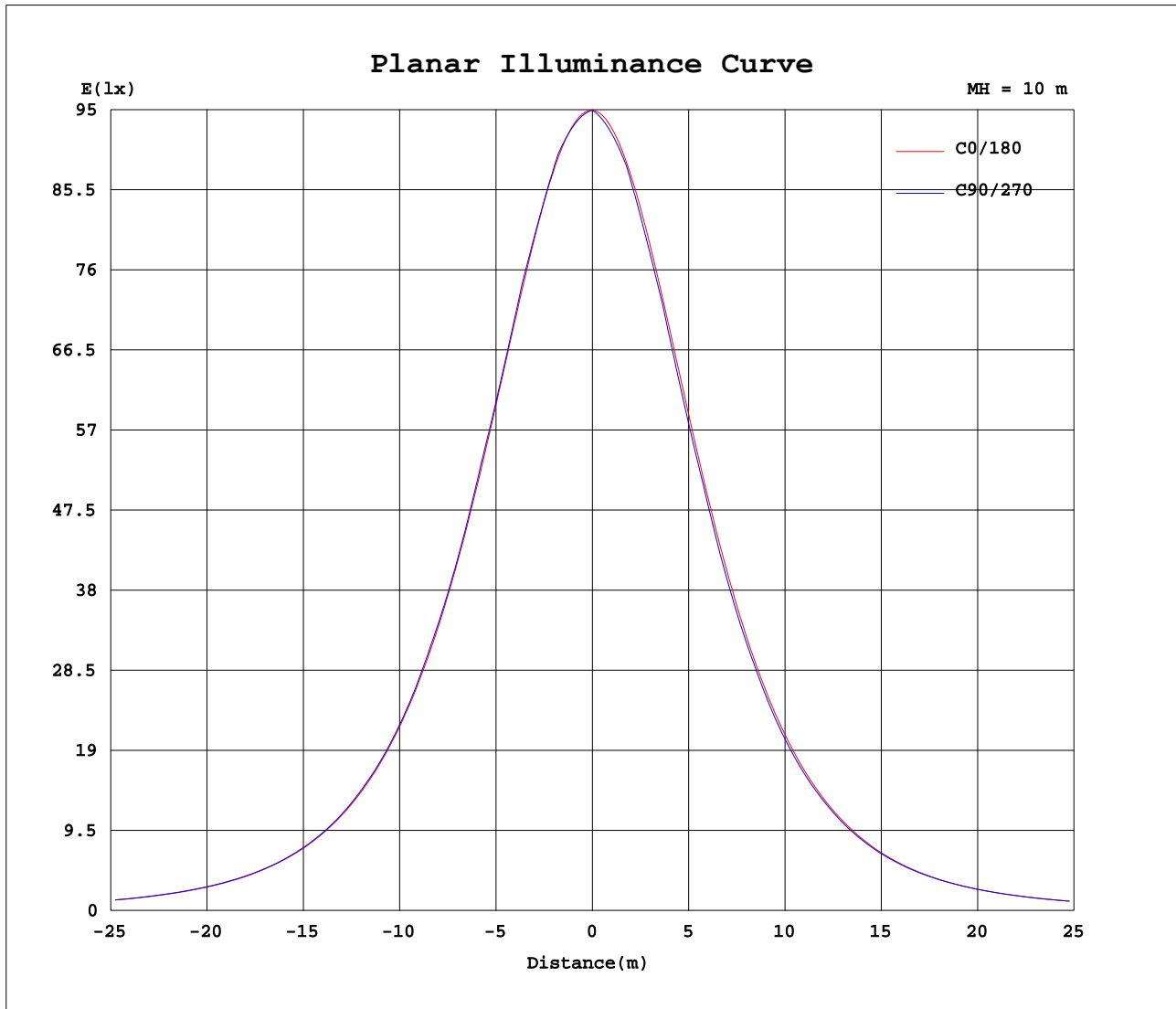
AvgL	cd/m2
L_0~180 (65) av	161075
L_0~180 (75) av	126311
L_0~180 (85) av	60326
L_90~270 (65) av	162964
L_90~270 (75) av	131989
L_90~270 (85) av	124584
L_45 (65) av	161625
L_45 (75) av	127820
L_45 (85) av	108666

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2018-9-28

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:11.850m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2018-9-28

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity: 65.0%
Test Distance: 11.850m [K=1.0000]
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:11.850m [K=1.0000]
Remarks:

```

LUMINOUS DISTRIBUTION INTENSITY DATA

Table--2

UNIT: cd

[illegible]

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2018-9-28

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:11.850m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:11.850m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.290
Humidity:65.0%
Test Distance:11.850m [K=1.0000]
Remarks:

```