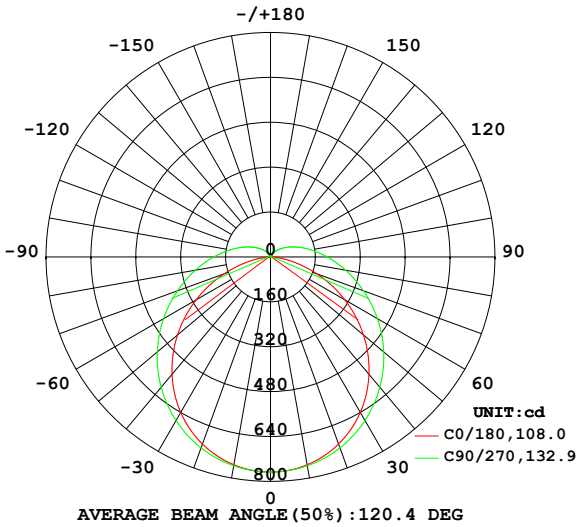
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.0V I:0.093A P:20.0W PF:0.934 Freq:50.00Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:2800.4x1 lm		
NAME: LHB13-020-4080-L00C181	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

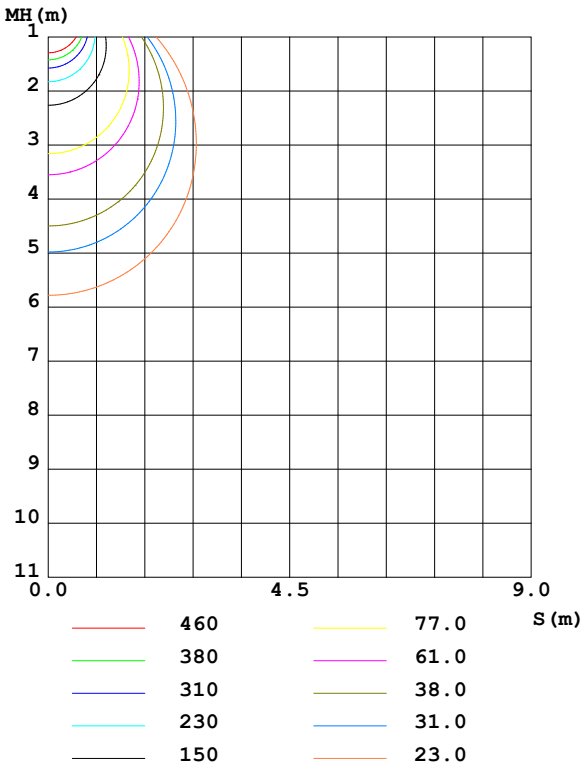
DATA OF LAMP		PHOTOMETRIC DATA		Eff: 140.02 lm/W	
MODEL	/	Imax(cd)	766.6	S/MH(C0/180)	1.24
NOMINAL POWER(W)	/	LOR(%)	100.0	S/MH(C90/270)	1.31
RATED VOLTAGE(V)	/	TOTAL FLUX(lm)	2800.4	η UP,DN(C0-180)	5.0,45.0
NOMINAL FLUX(lm)	2800.4	CIE CLASS	DIRECT	η UP,DN(C180-360)	5.0,45.0
LAMPS INSIDE	1	η up(%)	9.9	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	/	η down(%)	90.1	CIBSE SHR MAX	1.50

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):120.4 DEG

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	752.1	754.0	755.8	754.0	752.1	754.0	755.8	754.0	0- 10	72.57	72.57	2.59,2.59
20	709.6	717.0	724.1	717.0	709.6	717.0	724.1	717.0	10- 20	208.5	281.0	10,10
30	640.0	657.3	673.4	657.3	640.0	657.3	673.4	657.3	20- 30	317.9	598.9	21.4,21.4
40	545.9	578.4	606.2	578.4	545.9	578.4	606.2	578.4	30- 40	387.5	986.5	35.2,35.2
50	432.5	486.2	526.8	486.2	432.5	486.2	526.8	486.2	40- 50	410.2	1397	49.9,49.9
60	306.2	387.9	440.2	387.9	306.2	387.9	440.2	387.9	50- 60	386.6	1783	63.7,63.7
70	175.0	292.6	352.6	292.6	175.0	292.6	352.6	292.6	60- 70	326.2	2109	75.3,75.3
80	60.42	208.3	271.9	208.3	60.42	208.3	271.9	208.3	70- 80	245.8	2355	84.1,84.1
90	3.179	140.7	202.0	140.7	3.179	140.7	202.0	140.7	80- 90	167.9	2523	90.1,90.1
100	7.349	91.47	146.1	91.47	7.349	91.47	146.1	91.47	90-100	111.2	2634	94.1,94.1
110	5.695	58.10	102.6	58.10	5.695	58.10	102.6	58.10	100-110	72.42	2707	96.7,96.7
120	4.354	35.57	69.16	35.57	4.354	35.57	69.16	35.57	110-120	44.58	2751	98.2,98.2
130	3.113	21.24	44.19	21.24	3.113	21.24	44.19	21.24	120-130	25.77	2777	99.2,99.2
140	2.141	12.73	26.27	12.73	2.141	12.73	26.27	12.73	130-140	13.62	2791	99.7,99.7
150	1.203	6.573	14.09	6.573	1.203	6.573	14.09	6.573	140-150	6.374	2797	99.9,99.9
160	1.107	3.583	6.040	3.583	1.107	3.583	6.040	3.583	150-160	2.429	2800	100,100
170	1.018	1.126	2.351	1.126	1.018	1.126	2.351	1.126	160-170	0.7208	2800	100,100
180	1.265	1.243	0.9877	1.243	1.265	1.243	0.9877	1.243	170-180	0.1064	2800	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1191.7 lm

%lum = 42.6%
%lamp = 42.6%

Conical surface Flux(120deg): 1783.3 lm

%lum = 63.7%
%lamp = 63.7%

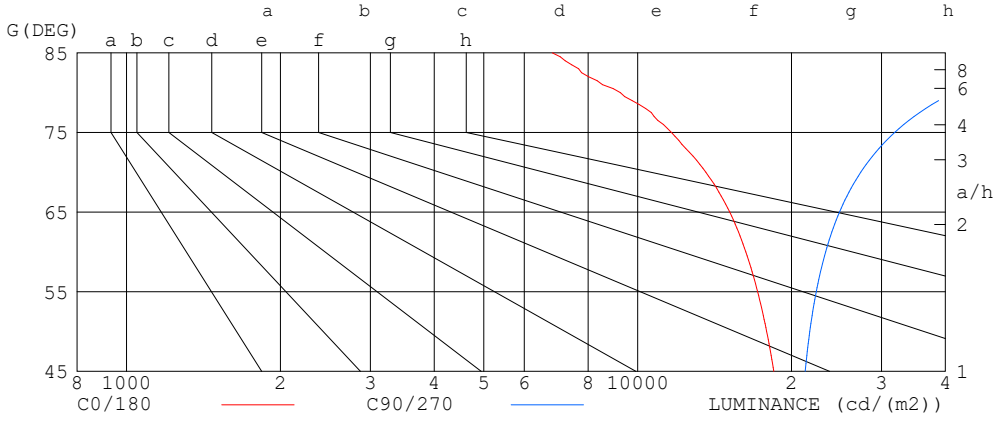
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks:

LUMINANCE LIMITATION CURVES

LUMINANCE LIMITATION CURVES

GLARE	CLASS	ILLUMINANCE (lx)							
1.15	A	2000	1000	500	<=300				
1.50	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.20	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	6807	71508
80	9247	41483
75	11644	31837
70	13600	27316
65	15145	24833
60	16276	23326
55	17170	22361
50	17881	21716
45	18471	21275

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

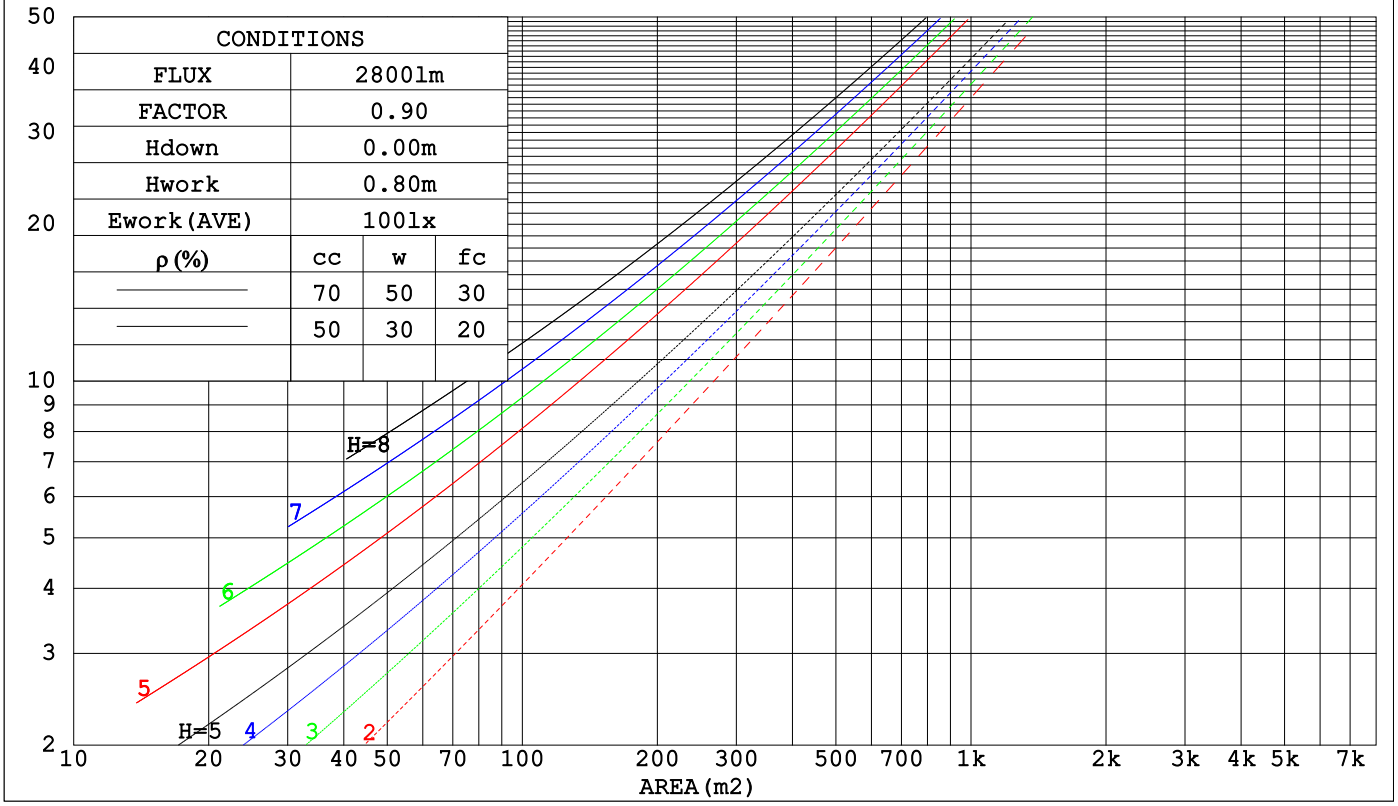
γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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			Coefficients of Utilization(CU)												
0.0	1.17	1.17	1.17	1.13	1.13	1.13	1.06	1.06	1.06	.99	.99	.99	.93	.93	.93	.90
1.0	.99	.94	.89	.95	.91	.87	.89	.86	.82	.84	.81	.78	.78	.76	.74	.71
2.0	.85	.77	.71	.82	.75	.69	.77	.71	.66	.72	.67	.63	.68	.64	.60	.58
3.0	.74	.65	.58	.72	.64	.57	.67	.60	.55	.63	.57	.53	.59	.55	.50	.48
4.0	.65	.56	.49	.63	.55	.48	.59	.52	.46	.56	.50	.45	.53	.47	.43	.40
5.0	.58	.49	.42	.56	.48	.41	.53	.46	.40	.50	.44	.38	.47	.42	.37	.35
6.0	.52	.43	.36	.51	.42	.36	.48	.40	.35	.45	.39	.33	.43	.37	.32	.30
7.0	.47	.38	.32	.46	.37	.31	.43	.36	.30	.41	.34	.30	.39	.33	.29	.26
8.0	.43	.34	.28	.42	.34	.28	.40	.32	.27	.38	.31	.26	.36	.30	.26	.24
9.0	.39	.31	.25	.38	.30	.25	.36	.29	.24	.35	.28	.24	.33	.27	.23	.21
10.0	.36	.28	.23	.35	.28	.23	.34	.27	.22	.32	.26	.21	.31	.25	.21	.19

LAMPS

LUMINAIRE BUDGETARY DIAGRAM



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks:

WEC AND CCEC

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						Wall Exitance Coeffcients(WEC)									
0.0																
1.0	.363	.207	.065	.353	.201	.064	.334	.192	.061	.316	.183	.059	.300	.174	.056	
2.0	.321	.176	.054	.312	.172	.053	.295	.164	.051	.279	.157	.049	.264	.150	.047	
3.0	.288	.154	.046	.280	.150	.045	.265	.144	.044	.251	.137	.042	.237	.131	.041	
4.0	.262	.136	.040	.254	.133	.039	.240	.127	.038	.227	.122	.037	.215	.117	.036	
5.0	.239	.122	.035	.232	.119	.035	.220	.114	.034	.208	.110	.033	.197	.105	.032	
6.0	.220	.110	.032	.214	.108	.031	.202	.104	.030	.192	.100	.029	.182	.096	.028	
7.0	.203	.100	.028	.198	.099	.028	.187	.095	.027	.178	.091	.027	.169	.088	.026	
8.0	.189	.092	.026	.184	.091	.026	.175	.087	.025	.166	.084	.024	.157	.081	.024	
9.0	.176	.085	.024	.172	.084	.024	.163	.081	.023	.155	.078	.022	.148	.075	.022	
10.0	.165	.079	.022	.161	.078	.022	.153	.075	.021	.146	.072	.021	.139	.070	.020	

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	.266	.266	.266	.227	.227	.227	.155	.155	.155	.089	.089	.089	.028	.028	.028	
1.0	.260	.232	.206	.223	.199	.177	.152	.137	.123	.088	.079	.071	.028	.025	.023	
2.0	.253	.208	.171	.216	.179	.148	.148	.124	.103	.086	.072	.060	.027	.023	.020	
3.0	.245	.191	.149	.210	.165	.129	.144	.115	.090	.083	.067	.053	.027	.022	.017	
4.0	.237	.179	.134	.204	.154	.116	.140	.108	.082	.081	.063	.048	.026	.021	.016	
5.0	.230	.169	.123	.197	.146	.107	.136	.102	.076	.079	.060	.045	.025	.020	.015	
6.0	.222	.160	.116	.191	.139	.101	.132	.097	.072	.076	.057	.043	.025	.019	.014	
7.0	.215	.154	.111	.185	.133	.096	.128	.093	.068	.074	.055	.041	.024	.018	.013	
8.0	.208	.148	.106	.179	.128	.093	.124	.090	.066	.072	.053	.039	.023	.017	.013	
9.0	.202	.143	.103	.174	.124	.090	.121	.087	.064	.070	.052	.038	.023	.017	.013	
10.0	.196	.139	.101	.169	.121	.088	.117	.085	.062	.068	.050	.037	.022	.016	.012	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
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	20.8	22.3	21.3	22.8	23.4	22.5	24.0	23.0	24.5	25.0
3H	22.5	23.8	23.0	24.4	25.0	25.1	26.5	25.7	27.0	27.6
4H	23.1	24.4	23.6	24.9	25.5	26.4	27.7	27.0	28.3	28.9
6H	23.5	24.7	24.0	25.2	25.8	27.9	29.1	28.4	29.6	30.2
8H	23.6	24.7	24.1	25.3	25.9	28.6	29.8	29.2	30.3	31.0
12H	23.6	24.7	24.2	25.3	26.0	29.5	30.6	30.0	31.1	31.8
4H 2H	21.8	23.1	22.4	23.7	24.3	23.1	24.4	23.6	24.9	25.5
3H	23.8	24.9	24.4	25.5	26.1	26.0	27.1	26.6	27.7	28.3
4H	24.6	25.6	25.2	26.2	26.9	27.5	28.6	28.1	29.1	29.8
6H	25.2	26.1	25.8	26.7	27.4	29.2	30.1	29.8	30.7	31.4
8H	25.4	26.2	26.0	26.8	27.5	30.1	30.9	30.7	31.5	32.2
12H	25.5	26.3	26.1	26.9	27.6	31.1	31.9	31.7	32.5	33.2
8H 4H	25.6	26.4	26.2	27.0	27.7	27.9	28.8	28.5	29.4	30.1
6H	26.5	27.2	27.1	27.9	28.5	29.9	30.6	30.5	31.2	31.9
8H	26.9	27.5	27.5	28.2	28.9	31.0	31.6	31.6	32.3	33.0
12H	27.1	27.7	27.8	28.4	29.1	32.2	32.8	32.9	33.5	34.2
12H 4H	25.9	26.6	26.5	27.3	28.0	28.0	28.8	28.6	29.4	30.1
6H	27.0	27.6	27.6	28.3	29.0	30.0	30.6	30.6	31.3	32.0
8H	27.5	28.1	28.2	28.8	29.5	31.2	31.8	31.8	32.4	33.2
CIE190: 2010										

CIE190: 2010
Area: 0.03773 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks:

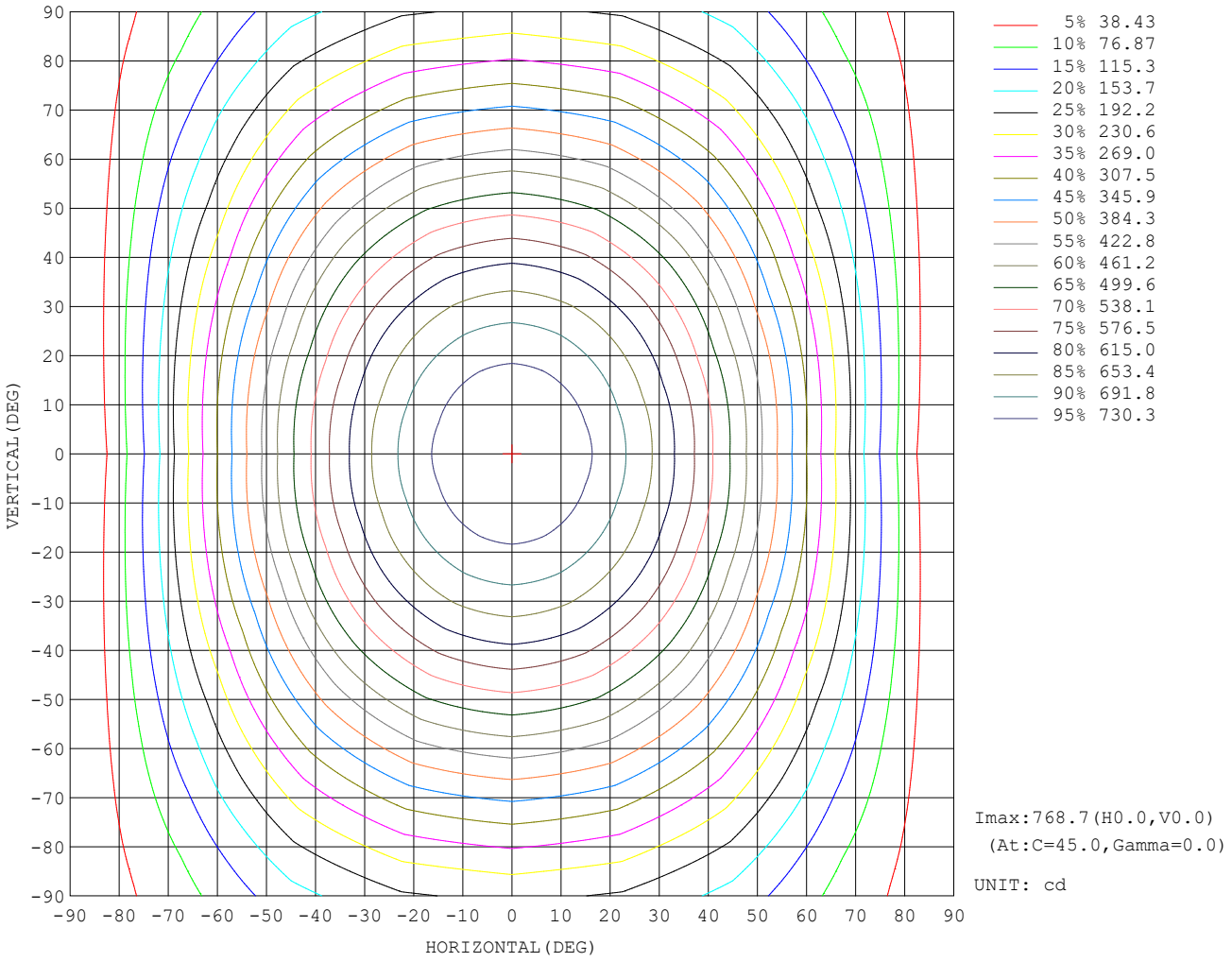
UTILIZATION FACTORS TABLE

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) x RCR = 5									
k = 0.60	52	40	32	51	39	32	49	39	32	25
0.80	61	49	41	60	48	41	58	47	40	33
1.00	69	57	49	68	56	48	65	57	48	40
1.25	76	64	56	74	63	56	71	61	54	46
1.50	81	70	62	79	68	61	75	66	59	50
2.00	88	78	70	86	76	69	81	73	67	57
2.50	92	83	76	90	81	74	85	77	72	61
3.00	96	88	81	93	85	79	88	81	76	65
4.00	100	93	87	97	91	85	91	86	82	70
5.00	103	97	92	100	94	89	94	89	85	73
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004				Suspended					SHRNOM = 1.25	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks:

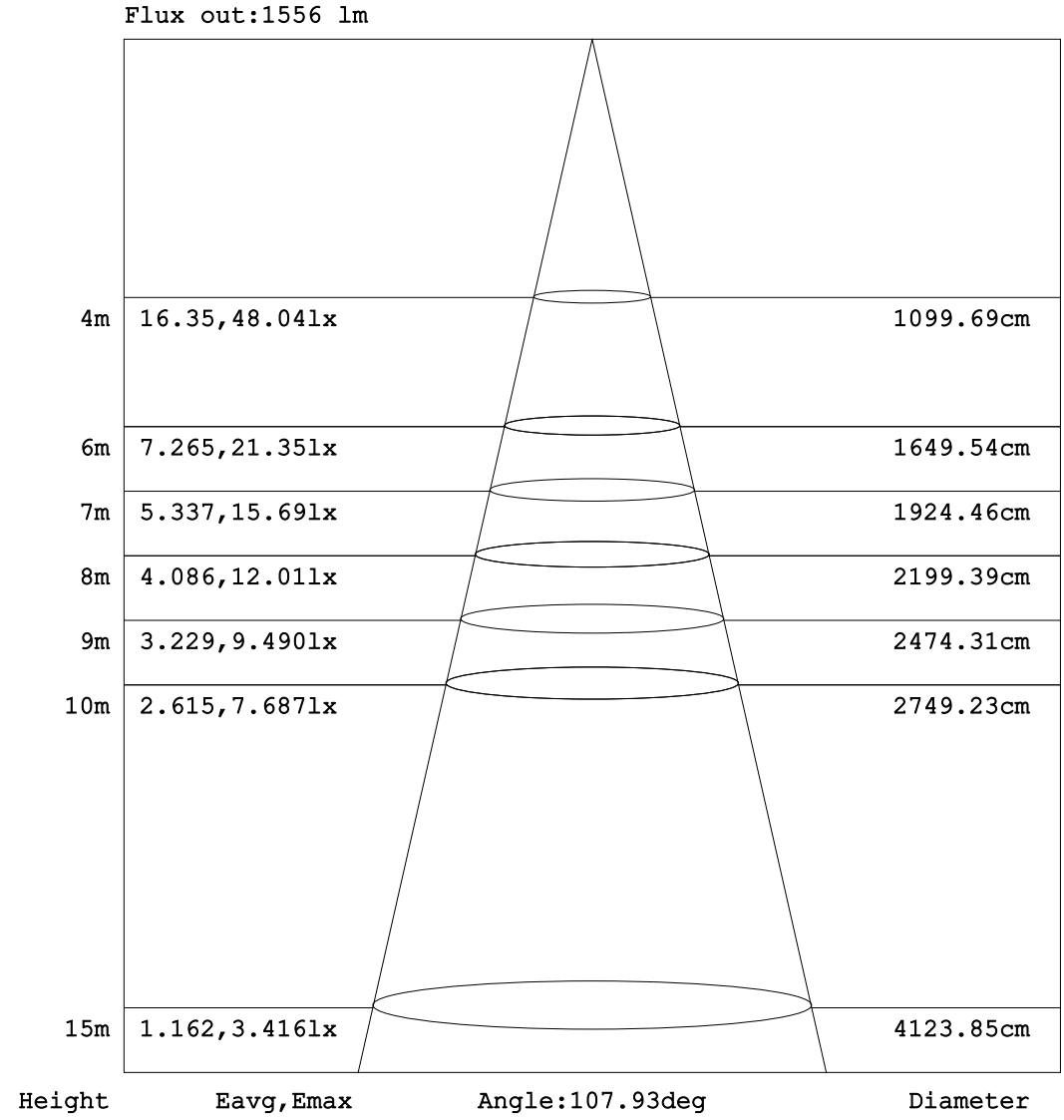
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks:

AAI Figure

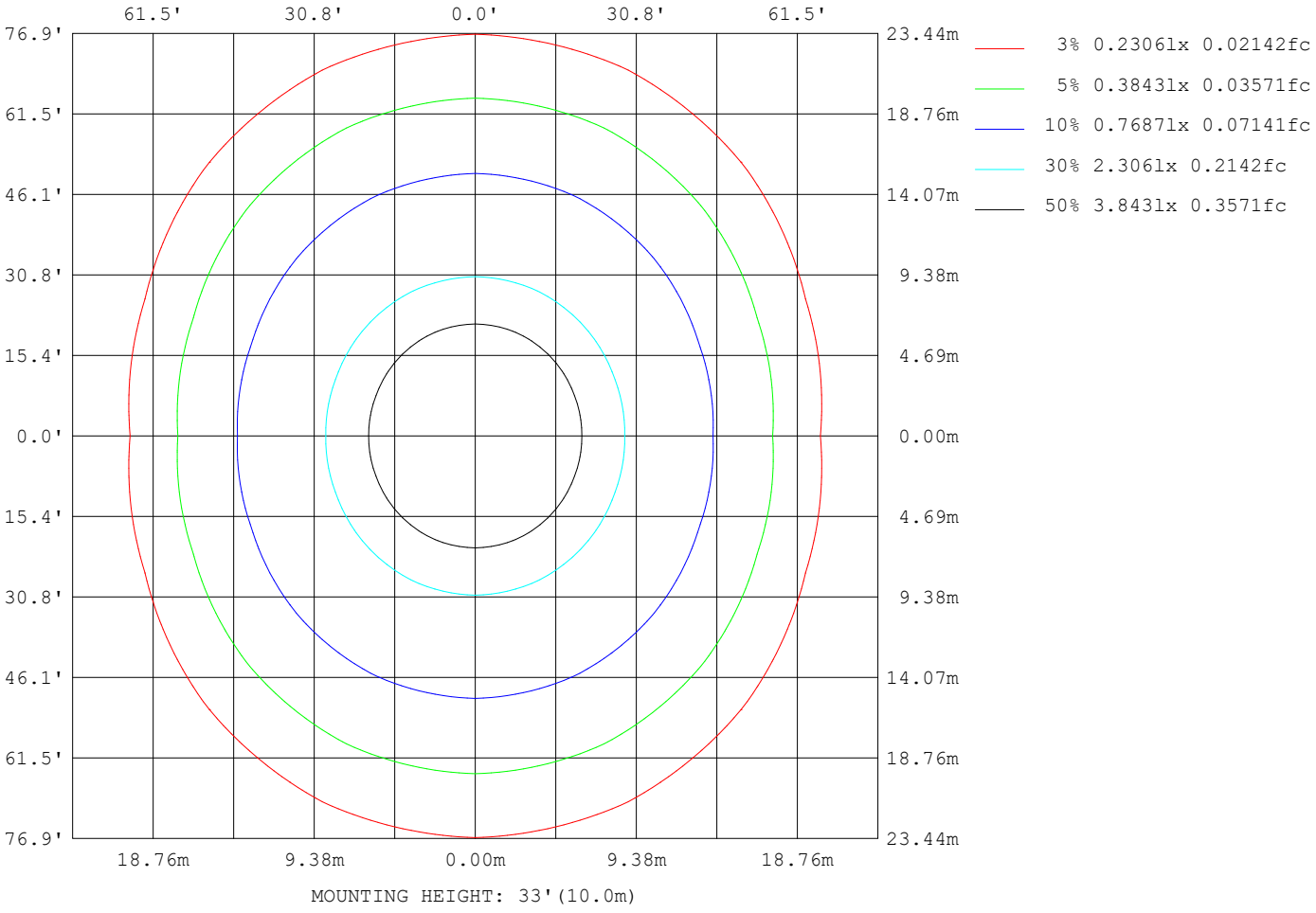


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks:

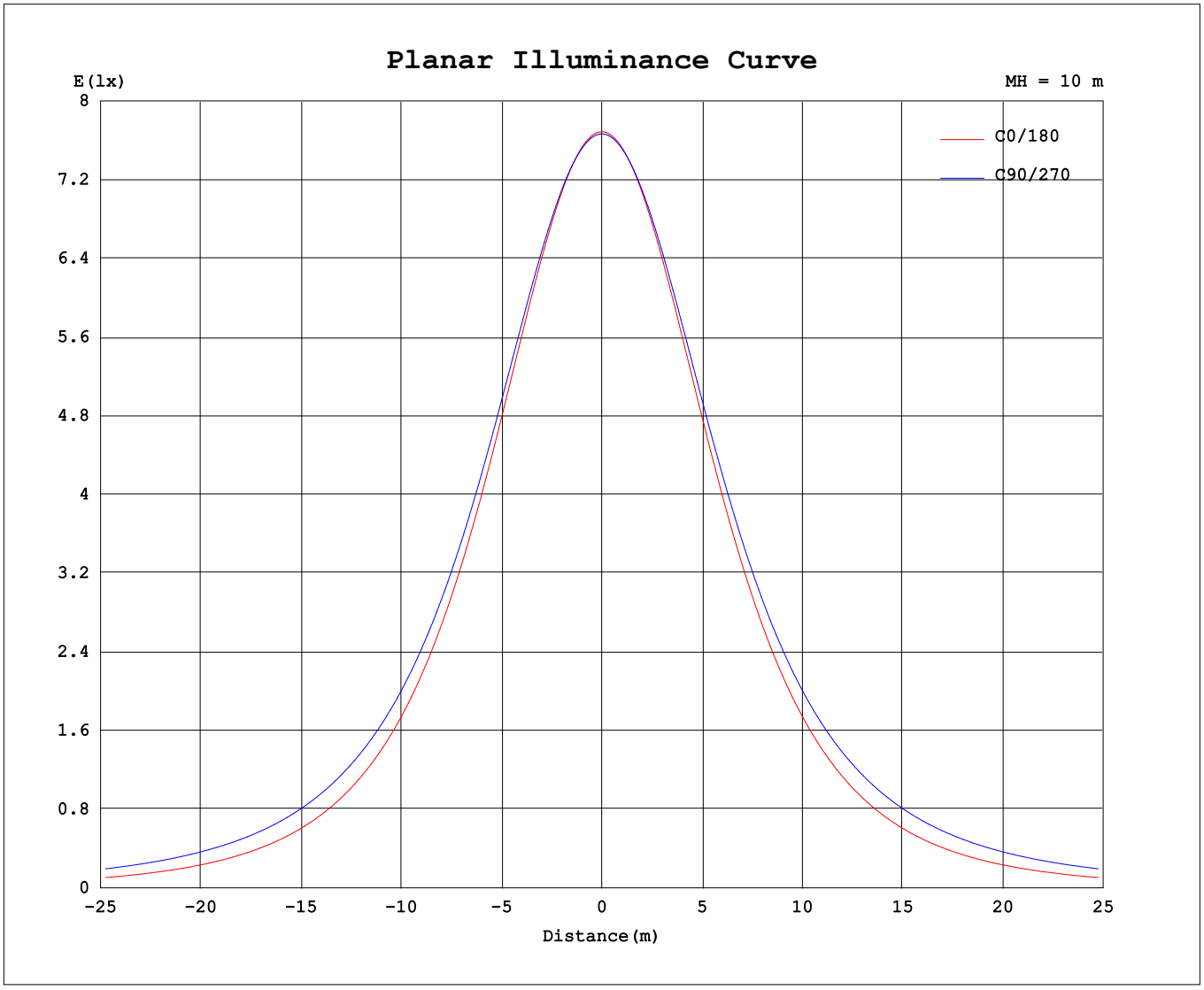
ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks: