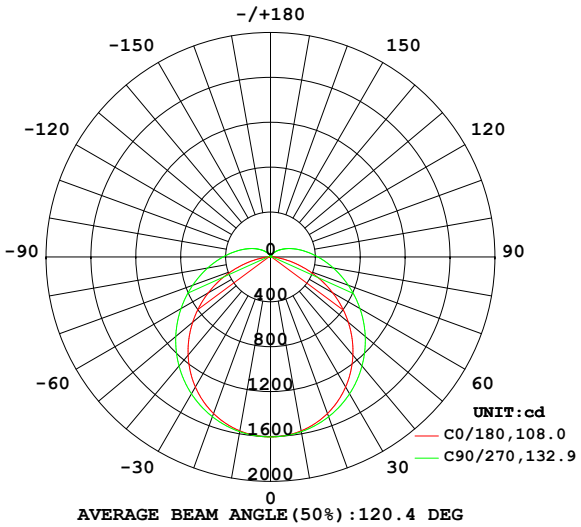
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.0V I:0.184A P:40.0W PF:0.946 Freq:50.00Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:5858.51x1 lm		
NAME: LHB13-040-4080-L00C181	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

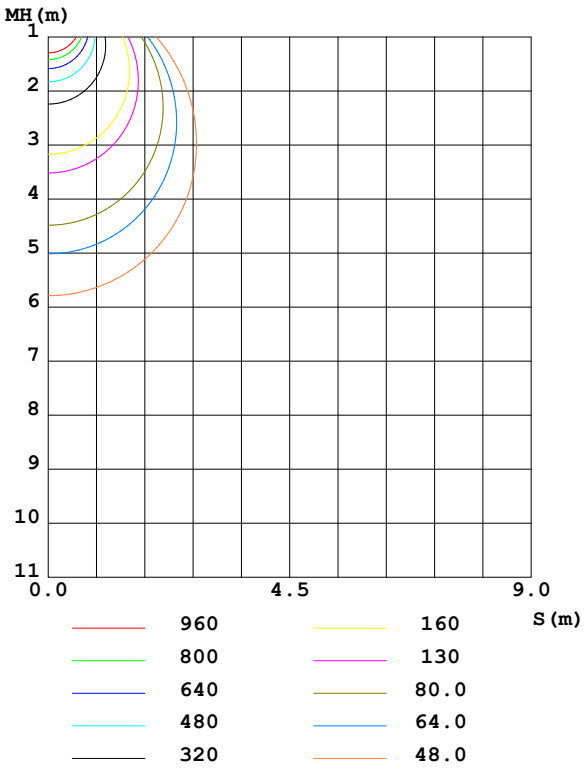
DATA OF LAMP		PHOTOMETRIC DATA		Eff: 146.46 lm/W	
MODEL	/	Imax(cd)	1604	S/MH(C0/180)	1.24
NOMINAL POWER(W)	/	LOR(%)	100.0	S/MH(C90/270)	1.31
RATED VOLTAGE(V)	/	TOTAL FLUX(lm)	5858.5	η UP,DN(C0-180)	5.0,45.0
NOMINAL FLUX(lm)	5858.51	CIE CLASS	DIRECT	η UP,DN(C180-360)	5.0,45.0
LAMPS INSIDE	1	η up(%)	9.9	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	1574	1577	1581	1577	1574	1577	1581	1577	0- 10	151.8	151.8	2.59,2.59
20	1484	1500	1515	1500	1484	1500	1515	1500	10- 20	436.1	587.9	10,10
30	1339	1375	1409	1375	1339	1375	1409	1375	20- 30	665.1	1253	21.4,21.4
40	1142	1210	1268	1210	1142	1210	1268	1210	30- 40	810.7	2064	35.2,35.2
50	904.8	1017	1102	1017	904.8	1017	1102	1017	40- 50	858.1	2922	49.9,49.9
60	640.6	811.5	920.8	811.5	640.6	811.5	920.8	811.5	50- 60	808.8	3731	63.7,63.7
70	366.2	612.1	737.6	612.1	366.2	612.1	737.6	612.1	60- 70	682.4	4413	75.3,75.3
80	126.4	435.8	568.7	435.8	126.4	435.8	568.7	435.8	70- 80	514.3	4927	84.1,84.1
90	6.650	294.4	422.7	294.4	6.650	294.4	422.7	294.4	80- 90	351.2	5278	90.1,90.1
100	15.37	191.3	305.7	191.3	15.37	191.3	305.7	191.3	90-100	232.7	5511	94.1,94.1
110	11.92	121.5	214.7	121.5	11.92	121.5	214.7	121.5	100-110	151.5	5663	96.7,96.7
120	9.109	74.40	144.7	74.40	9.109	74.40	144.7	74.40	110-120	93.27	5756	98.2,98.2
130	6.512	44.43	92.44	44.43	6.512	44.43	92.44	44.43	120-130	53.92	5810	99.2,99.2
140	4.479	26.63	54.96	26.63	4.479	26.63	54.96	26.63	130-140	28.50	5838	99.7,99.7
150	2.516	13.75	29.47	13.75	2.516	13.75	29.47	13.75	140-150	13.34	5852	99.9,99.9
160	2.316	7.495	12.64	7.495	2.316	7.495	12.64	7.495	150-160	5.082	5857	100,100
170	2.131	2.355	4.918	2.355	2.131	2.355	4.918	2.355	160-170	1.508	5858	100,100
180	2.646	2.600	2.066	2.600	2.646	2.600	2.066	2.600	170-180	0.2226	5859	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 2493.1 lm

%lum = 42.6%
%lamp = 42.6%

Conical surface Flux(120deg): 3730.6 lm

%lum = 63.7%
%lamp = 63.7%

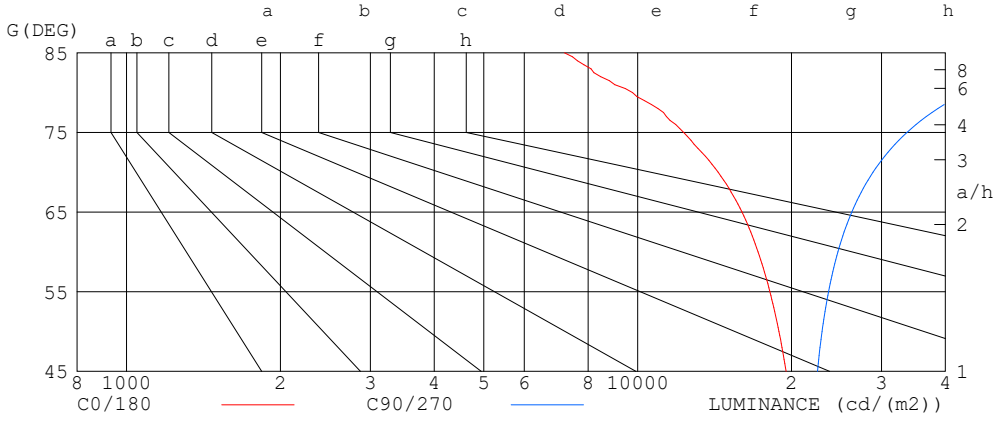
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

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	7193	75570
80	9772	43839
75	12305	33645
70	14372	28867
65	16005	26244
60	17201	24651
55	18145	23631
50	18896	22950
45	19520	22484

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

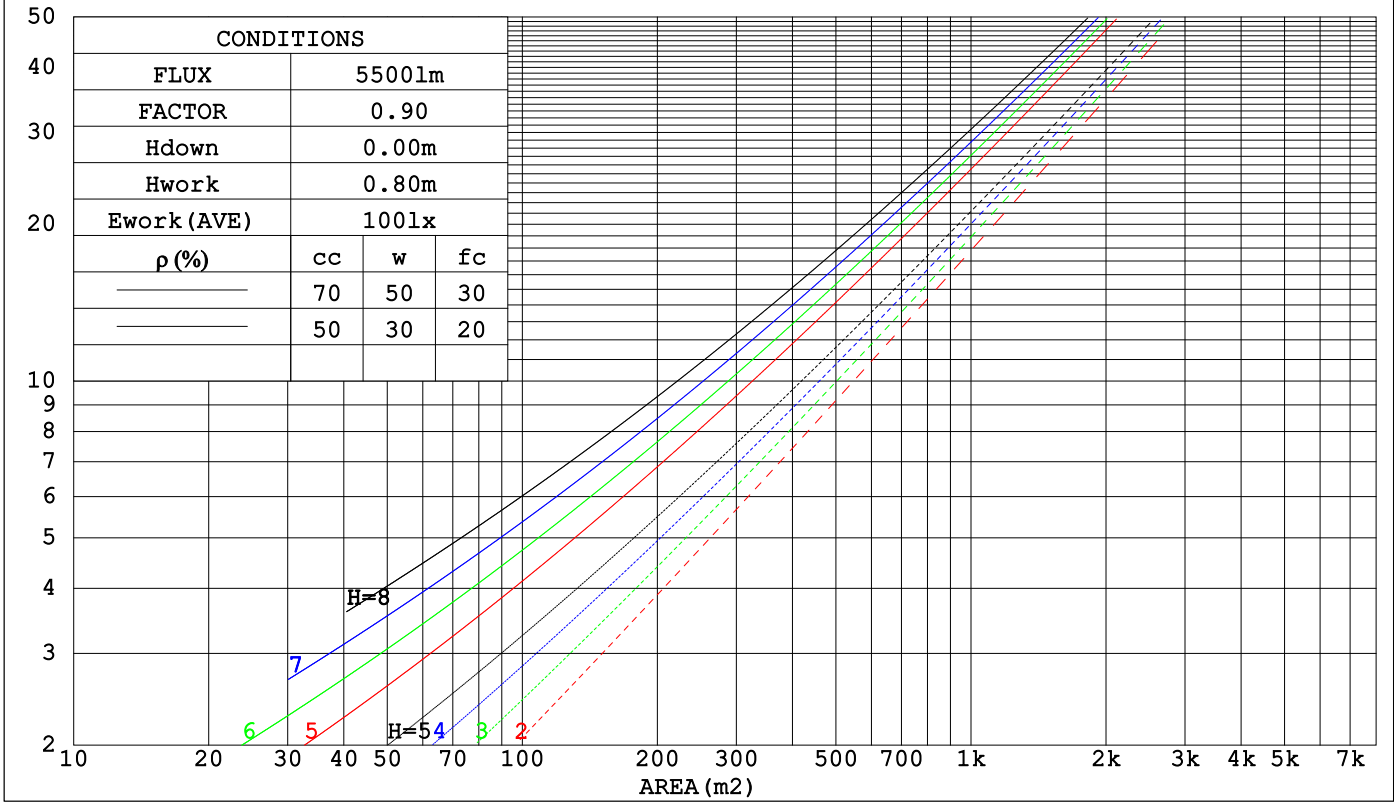
γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks:

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	21.0	22.5	21.5	23.0	23.6	22.7	24.2	23.2	24.7	25.2
3H	22.7	24.0	23.2	24.6	25.1	25.3	26.7	25.8	27.2	27.8
4H	23.3	24.5	23.8	25.1	25.7	26.6	27.9	27.2	28.5	29.1
6H	23.7	24.9	24.2	25.4	26.0	28.1	29.3	28.6	29.8	30.4
8H	23.8	24.9	24.3	25.5	26.1	28.8	30.0	29.4	30.5	31.2
12H	23.8	24.9	24.4	25.5	26.2	29.7	30.8	30.2	31.3	32.0
4H 2H	22.0	23.3	22.6	23.9	24.5	23.3	24.6	23.8	25.1	25.7
3H	24.0	25.1	24.6	25.7	26.3	26.2	27.3	26.8	27.9	28.5
4H	24.8	25.8	25.4	26.4	27.0	27.7	28.8	28.3	29.3	30.0
6H	25.4	26.3	26.0	26.9	27.6	29.4	30.3	30.0	30.9	31.6
8H	25.6	26.4	26.2	27.0	27.7	30.3	31.1	30.9	31.7	32.4
12H	25.7	26.5	26.3	27.1	27.8	31.3	32.1	31.9	32.7	33.4
8H 4H	25.8	26.6	26.4	27.2	27.9	28.1	29.0	28.7	29.6	30.3
6H	26.7	27.4	27.3	28.1	28.7	30.1	30.8	30.7	31.4	32.1
8H	27.1	27.7	27.7	28.4	29.1	31.1	31.8	31.8	32.4	33.1
12H	27.3	27.9	28.0	28.6	29.3	32.4	33.0	33.1	33.6	34.4
12H 4H	26.1	26.8	26.7	27.5	28.1	28.2	29.0	28.8	29.6	30.3
6H	27.2	27.8	27.8	28.5	29.2	30.2	30.8	30.8	31.5	32.2
8H	27.7	28.3	28.4	28.9	29.7	31.4	32.0	32.0	32.6	33.4
CIE190: 2010										

CIE190: 2010
Area: 0.07469 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:

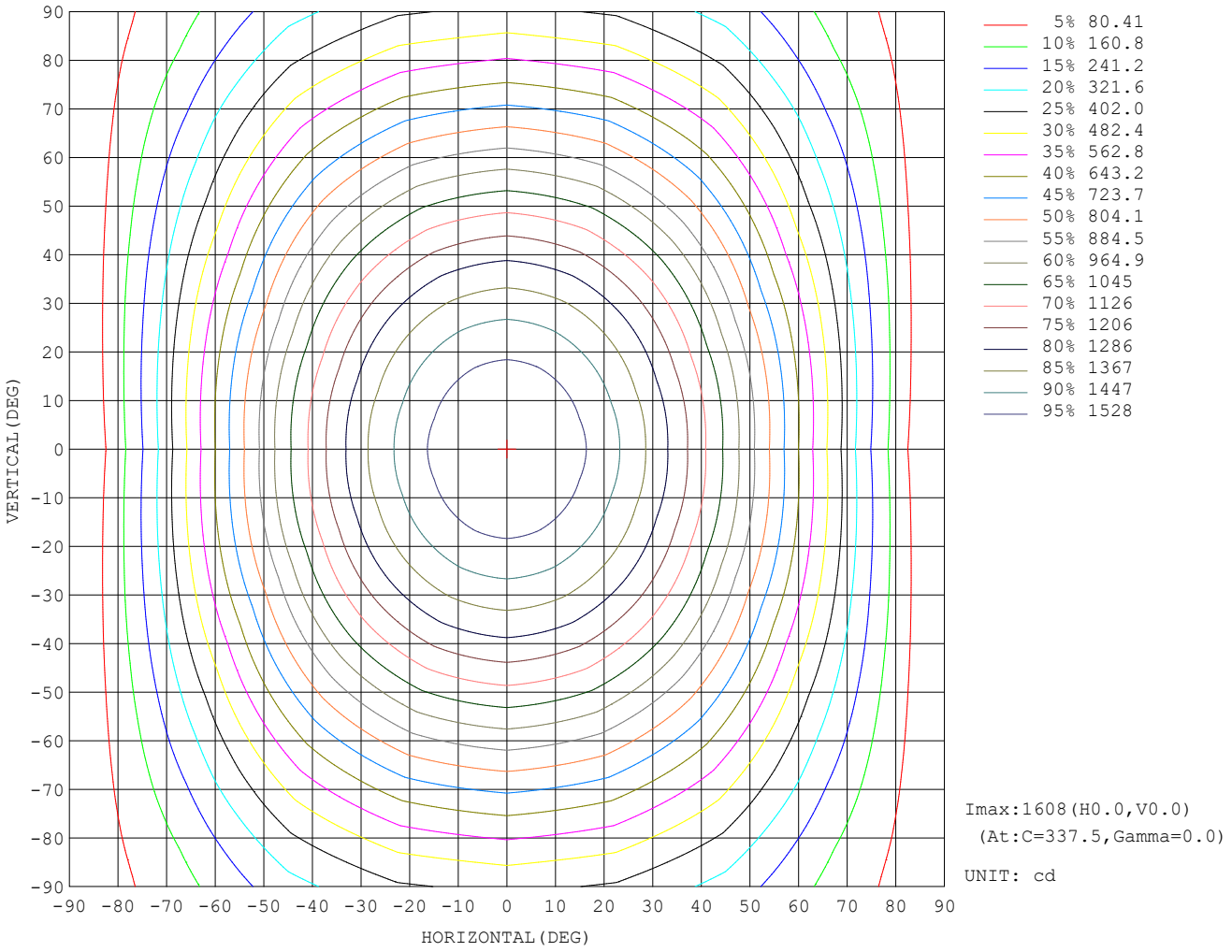
UTILIZATION FACTORS TABLE

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:

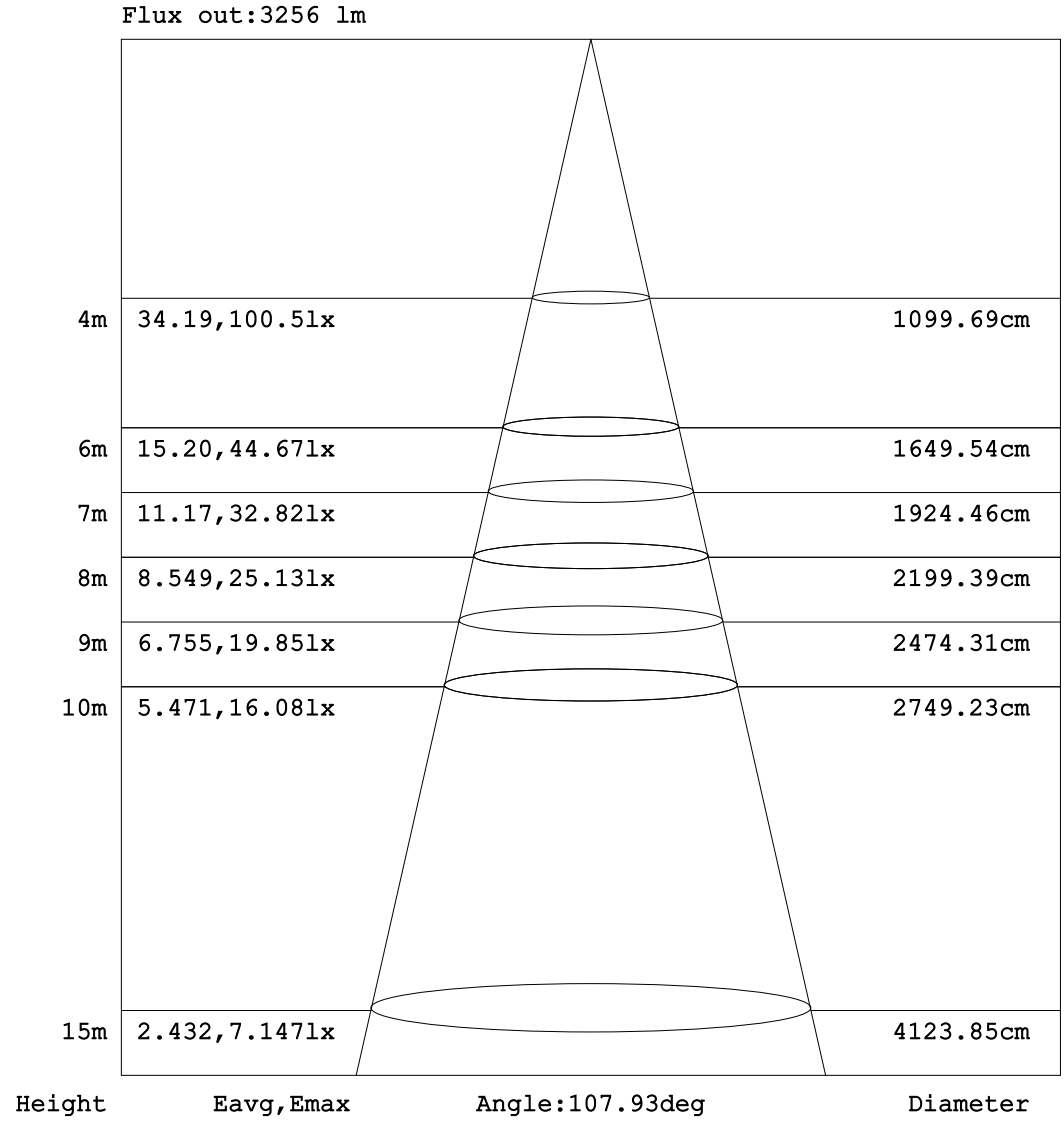
ISOCANDELA DIAGRAM



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

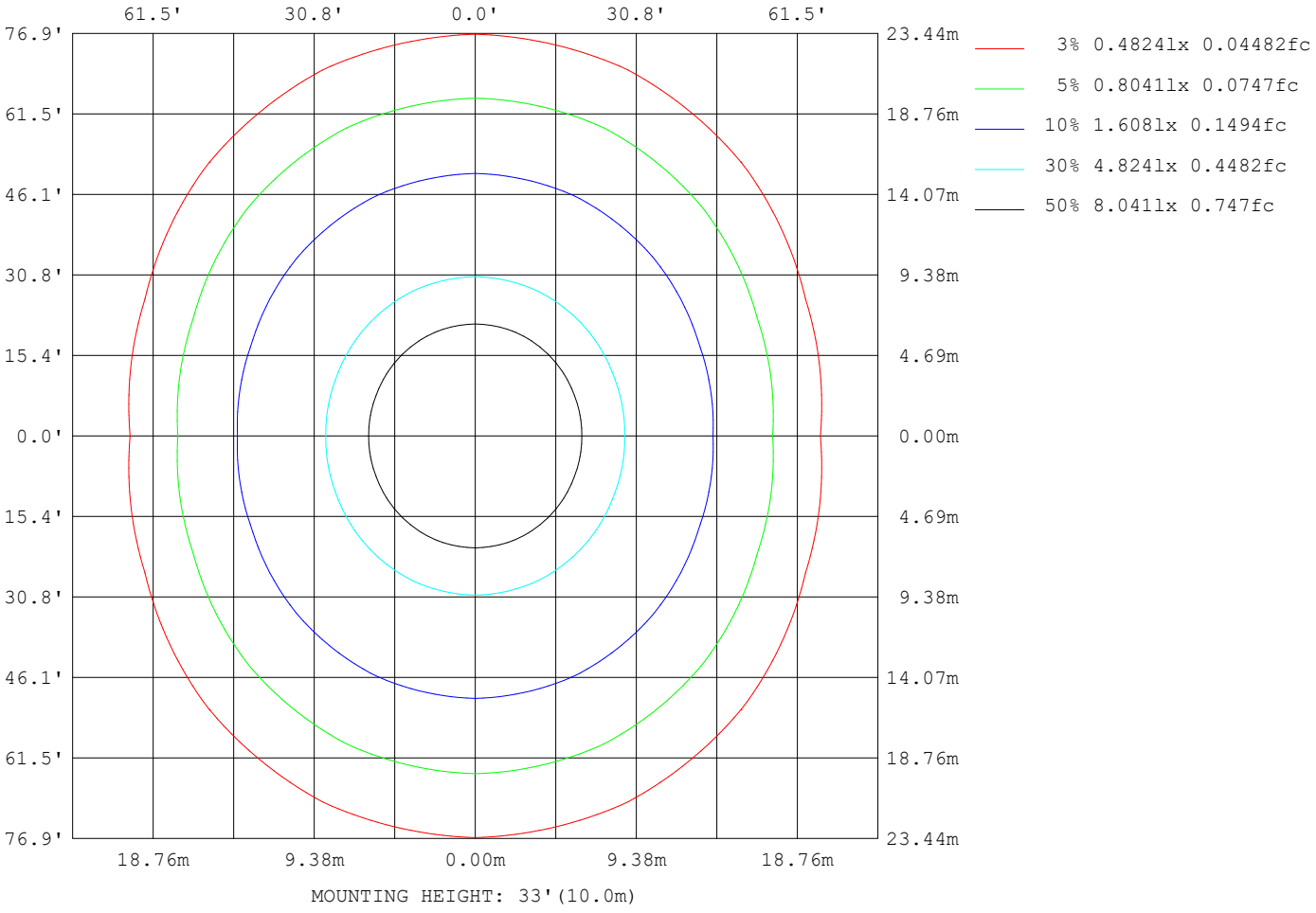


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:

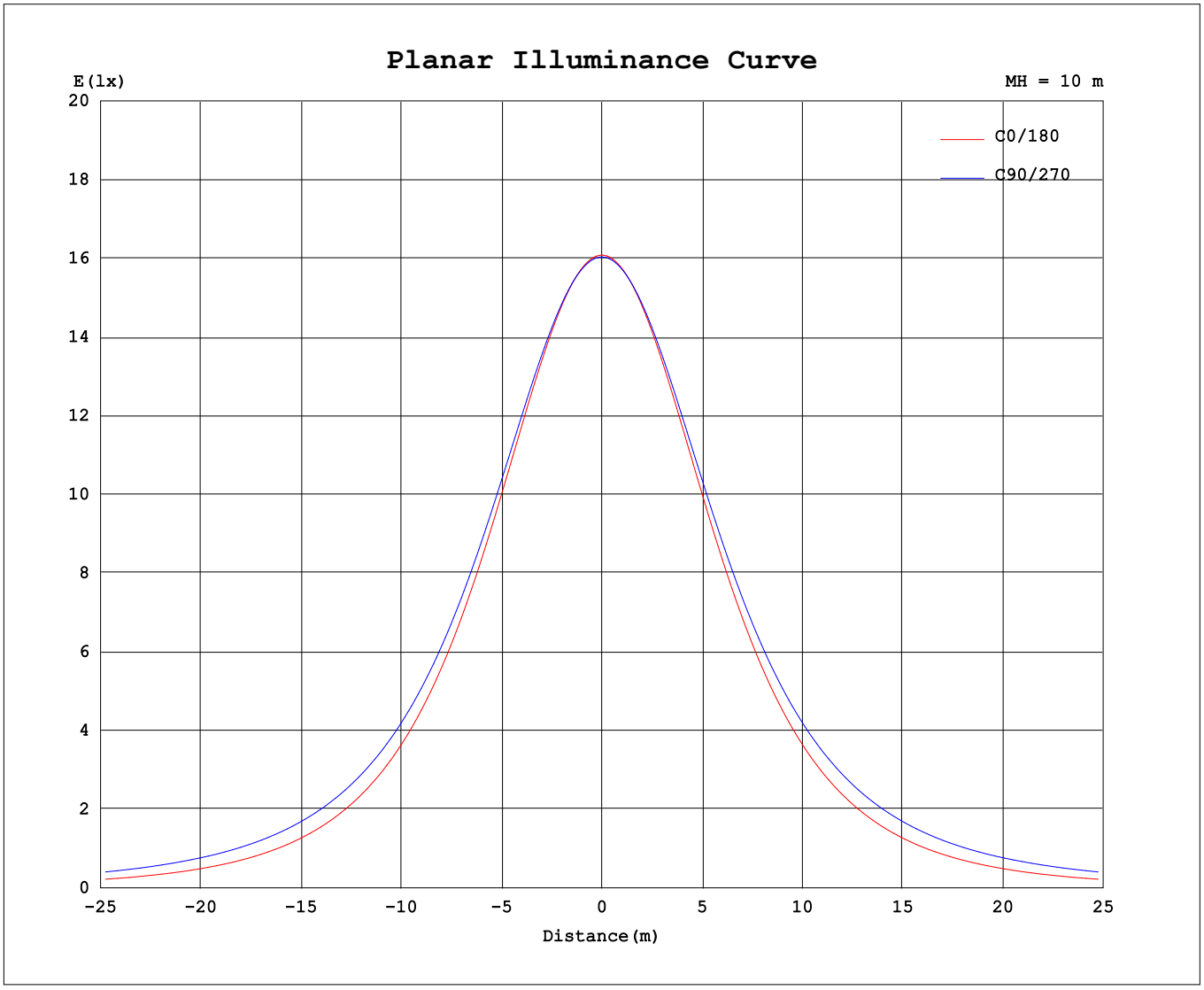
ISOLUX DIAGRAM



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: