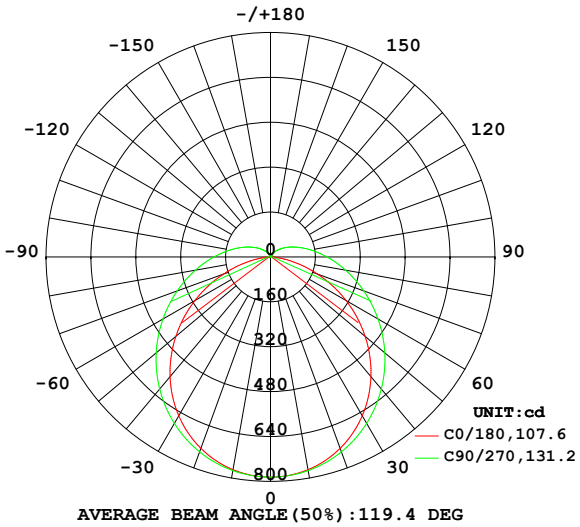
LUMINAIRE PHOTOMETRIC TEST REPORT

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:2830.98x1 lm		
NAME: LHB13-020-4080-L00C182	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

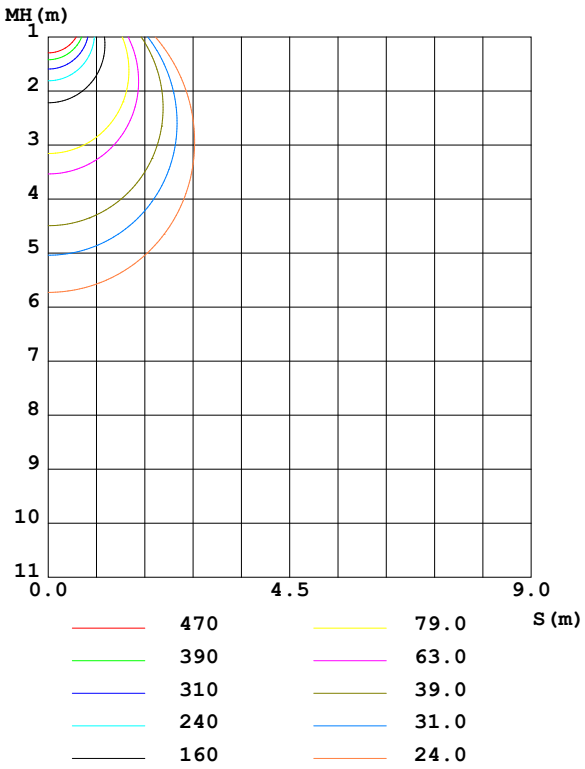
DATA OF LAMP		PHOTOMETRIC DATA Eff: 141.55 lm/W			
MODEL	/	Imax(cd)	784.8	S/MH(C0/180)	1.24
NOMINAL POWER(W)	/	LOR(%)	100.0	S/MH(C90/270)	1.30
RATED VOLTAGE(V)	/	TOTAL FLUX(lm)	2831.0	η UP,DN(C0-180)	4.9,45.1
NOMINAL FLUX(lm)	2830.98	CIE CLASS	DIRECT	η UP,DN(C180-360)	4.9,45.1
LAMPS INSIDE	1	η up(%)	9.7	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	/	η down(%)	90.3	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):119.4 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	770.0	771.6	773.2	771.6	770.0	771.6	773.2	771.6	0- 10	74.28	74.28	2.62,2.62
20	725.9	732.7	739.2	732.7	725.9	732.7	739.2	732.7	10- 20	213.2	287.5	10.2,10.2
30	653.9	670.1	685.1	670.1	653.9	670.1	685.1	670.1	20- 30	324.5	612.0	21.6,21.6
40	556.9	587.9	614.4	587.9	556.9	587.9	614.4	587.9	30- 40	394.5	1006	35.6,35.6
50	440.4	492.3	531.8	492.3	440.4	492.3	531.8	492.3	40- 50	416.2	1423	50.3,50.3
60	311.3	391.2	442.6	391.2	311.3	391.2	442.6	391.2	50- 60	391.0	1814	64.1,64.1
70	177.5	294.0	353.6	294.0	177.5	294.0	353.6	294.0	60- 70	328.6	2142	75.7,75.7
80	60.75	208.2	271.8	208.2	60.75	208.2	271.8	208.2	70- 80	246.7	2389	84.4,84.4
90	2.781	139.9	201.4	139.9	2.781	139.9	201.4	139.9	80- 90	167.4	2556	90.3,90.3
100	7.724	90.46	145.1	90.46	7.724	90.46	145.1	90.46	90-100	110.4	2667	94.2,94.2
110	5.556	57.04	101.6	57.04	5.556	57.04	101.6	57.04	100-110	71.65	2738	96.7,96.7
120	4.149	35.25	68.48	35.25	4.149	35.25	68.48	35.25	110-120	44.05	2782	98.3,98.3
130	2.835	21.22	43.79	21.22	2.835	21.22	43.79	21.22	120-130	25.53	2808	99.2,99.2
140	1.937	12.49	26.01	12.49	1.937	12.49	26.01	12.49	130-140	13.50	2822	99.7,99.7
150	1.261	6.462	13.79	6.462	1.261	6.462	13.79	6.462	140-150	6.282	2828	99.9,99.9
160	1.069	3.431	5.881	3.431	1.069	3.431	5.881	3.431	150-160	2.371	2830	100,100
170	0.9813	1.082	2.231	1.082	0.9813	1.082	2.231	1.082	160-170	0.6936	2831	100,100
180	1.203	1.185	0.9536	1.185	1.203	1.185	0.9536	1.185	170-180	0.1038	2831	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1214.9 lm

%lum = 42.9%
%lamp = 42.9%

Conical surface Flux(120deg): 1813.6 lm

%lum = 64.1%
%lamp = 64.1%

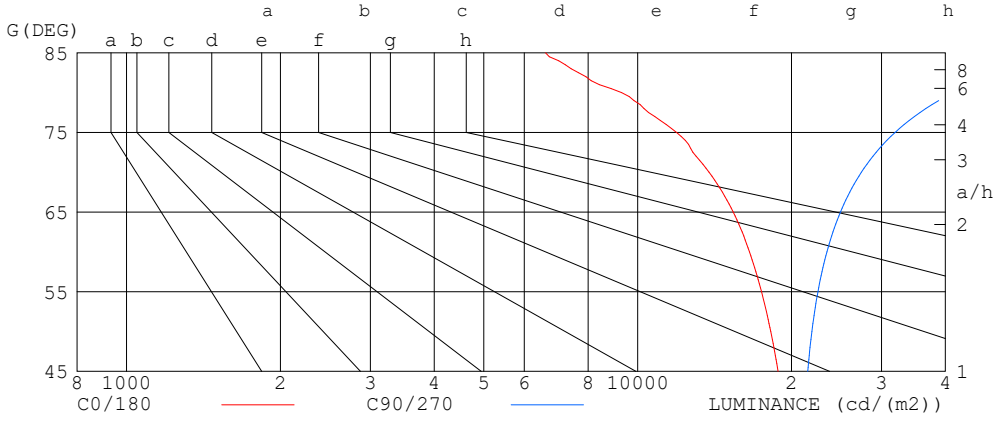
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

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	6605	71402
80	9301	41471
75	11919	31896
70	13797	27399
65	15380	24934
60	16550	23460
55	17474	22533
50	18216	21924
45	18827	21520

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

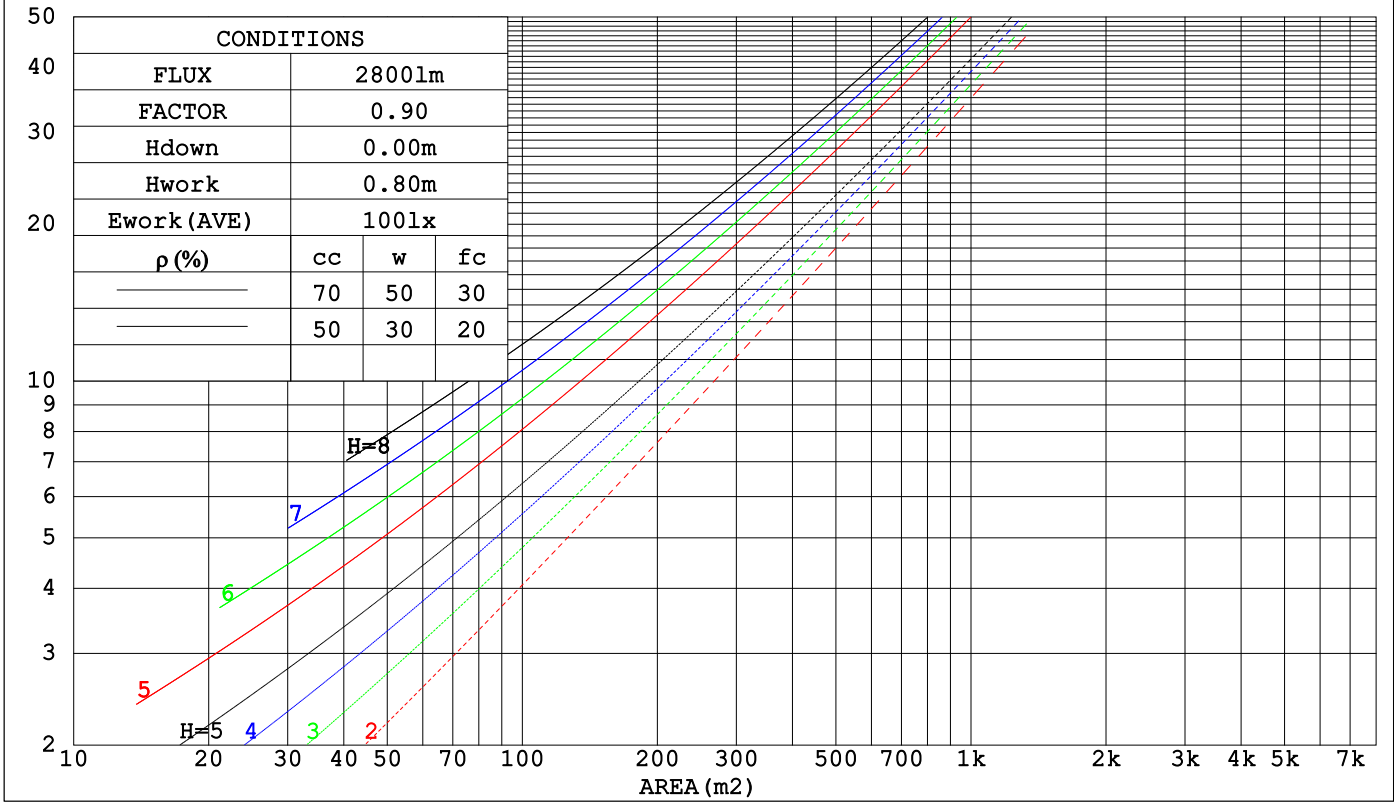
γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks:

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	.96	.91	.87	.89	.86	.82	.84	.81	.78	.79	.76	.74	.71
2.0	.85	.78	.71	.82	.75	.70	.77	.71	.67	.72	.68	.64	.68	.64	.61	.58
3.0	.74	.65	.58	.72	.64	.57	.67	.61	.55	.63	.58	.53	.60	.55	.51	.48
4.0	.65	.56	.49	.63	.55	.48	.60	.52	.46	.56	.50	.45	.53	.48	.43	.41
5.0	.58	.49	.42	.57	.48	.41	.53	.46	.40	.50	.44	.39	.47	.42	.37	.35
6.0	.52	.43	.36	.51	.42	.36	.48	.40	.35	.45	.39	.34	.43	.37	.33	.30
7.0	.47	.38	.32	.46	.38	.32	.44	.36	.31	.41	.35	.30	.39	.33	.29	.27
8.0	.43	.34	.28	.42	.34	.28	.40	.33	.27	.38	.31	.27	.36	.30	.26	.24
9.0	.39	.31	.25	.38	.31	.25	.37	.29	.25	.35	.28	.24	.33	.27	.23	.21
10.0	.36	.28	.23	.35	.28	.23	.34	.27	.22	.32	.26	.22	.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	.362	.206	.065	.352	.201	.064	.333	.191	.061	.315	.182	.058	.299	.173	.056	
2.0	.320	.176	.054	.311	.171	.053	.294	.164	.051	.278	.156	.049	.264	.149	.047	
3.0	.288	.153	.046	.280	.150	.045	.264	.143	.044	.250	.137	.042	.237	.131	.041	
4.0	.261	.136	.040	.254	.133	.039	.240	.127	.038	.227	.122	.037	.215	.117	.036	
5.0	.238	.122	.035	.232	.119	.035	.219	.114	.034	.208	.110	.033	.197	.105	.032	
6.0	.219	.110	.031	.213	.108	.031	.202	.104	.030	.192	.100	.029	.182	.096	.028	
7.0	.203	.100	.028	.198	.098	.028	.187	.095	.027	.178	.091	.027	.169	.088	.026	
8.0	.189	.092	.026	.184	.090	.026	.174	.087	.025	.166	.084	.024	.158	.081	.024	
9.0	.176	.085	.024	.172	.084	.023	.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	.264	.264	.264	.226	.226	.226	.154	.154	.154	.089	.089	.089	.028	.028	.028	
1.0	.258	.230	.205	.221	.198	.176	.151	.136	.122	.087	.079	.071	.028	.025	.023	
2.0	.251	.207	.170	.215	.178	.147	.147	.123	.102	.085	.072	.060	.027	.023	.020	
3.0	.243	.190	.147	.209	.164	.128	.143	.114	.090	.083	.066	.053	.027	.022	.017	
4.0	.236	.177	.132	.202	.153	.115	.139	.107	.081	.080	.062	.048	.026	.020	.016	
5.0	.228	.167	.122	.196	.144	.106	.135	.101	.075	.078	.059	.044	.025	.019	.015	
6.0	.220	.159	.115	.189	.138	.100	.131	.096	.071	.076	.057	.042	.024	.019	.014	
7.0	.213	.152	.109	.184	.132	.095	.127	.092	.067	.074	.054	.040	.024	.018	.013	
8.0	.207	.146	.105	.178	.127	.091	.123	.089	.065	.072	.053	.039	.023	.017	.013	
9.0	.201	.142	.102	.173	.123	.089	.120	.086	.063	.070	.051	.038	.023	.017	.012	
10.0	.195	.137	.099	.168	.119	.086	.116	.084	.061	.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	20.9	22.4	21.4	22.9	23.4	22.5	24.0	23.0	24.5	25.1
3H	22.5	23.9	23.1	24.4	25.0	25.1	26.5	25.7	27.0	27.6
4H	23.1	24.4	23.7	25.0	25.6	26.4	27.7	27.0	28.3	28.9
6H	23.5	24.7	24.1	25.3	25.9	27.9	29.1	28.4	29.6	30.2
8H	23.6	24.8	24.2	25.3	26.0	28.6	29.8	29.2	30.3	30.9
12H	23.7	24.8	24.3	25.4	26.0	29.5	30.6	30.0	31.1	31.8
4H 2H	21.9	23.2	22.4	23.7	24.3	23.1	24.4	23.7	24.9	25.5
3H	23.9	25.0	24.4	25.6	26.2	26.0	27.1	26.6	27.7	28.3
4H	24.7	25.7	25.2	26.3	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	31.3
8H	25.4	26.3	26.0	26.9	27.5	30.1	30.9	30.7	31.5	32.2
12H	25.5	26.3	26.2	26.9	27.6	31.1	31.8	31.7	32.5	33.2
8H 4H	25.6	26.4	26.2	27.1	27.7	27.9	28.8	28.5	29.4	30.1
6H	26.5	27.2	27.1	27.9	28.6	29.8	30.6	30.5	31.2	31.9
8H	26.9	27.5	27.5	28.2	28.9	30.9	31.6	31.6	32.2	32.9
12H	27.2	27.7	27.8	28.4	29.1	32.2	32.8	32.8	33.4	34.2
12H 4H	25.9	26.7	26.5	27.3	28.0	28.0	28.8	28.6	29.4	30.1
6H	27.0	27.7	27.7	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:

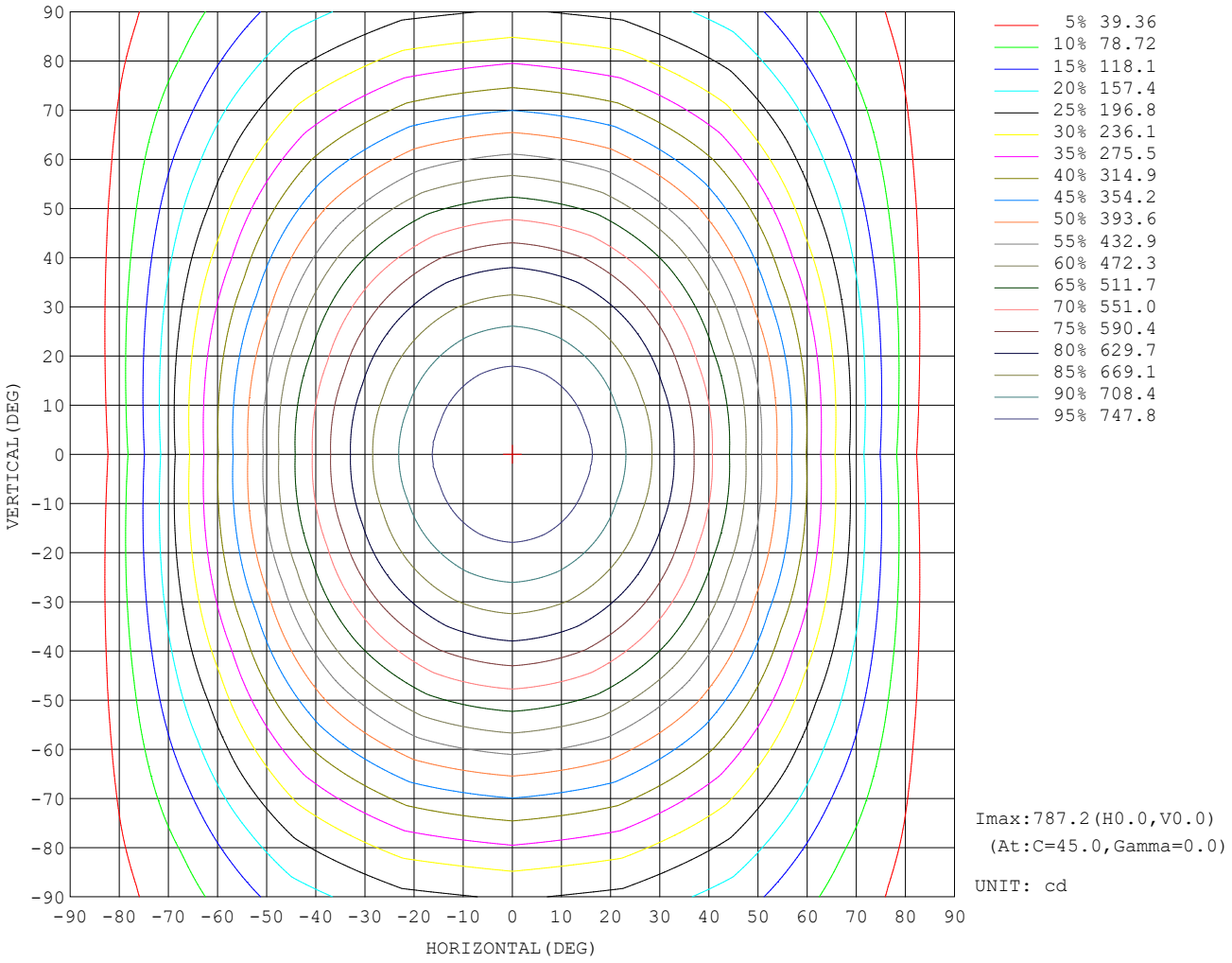
UTILIZATION FACTORS TABLE

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	33	51	40	33	50	39	32	26
0.80	61	49	41	60	48	41	58	47	40	33
1.00	69	57	49	68	56	49	65	57	48	40
1.25	76	64	56	74	63	56	71	61	55	46
1.50	81	70	62	79	69	61	75	66	60	51
2.00	88	78	71	86	77	69	81	73	67	57
2.50	93	83	76	90	81	75	85	78	72	61
3.00	96	88	81	93	86	79	88	82	76	65
4.00	101	93	87	97	91	86	92	86	82	70
5.00	103	97	92	100	94	90	94	89	86	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:

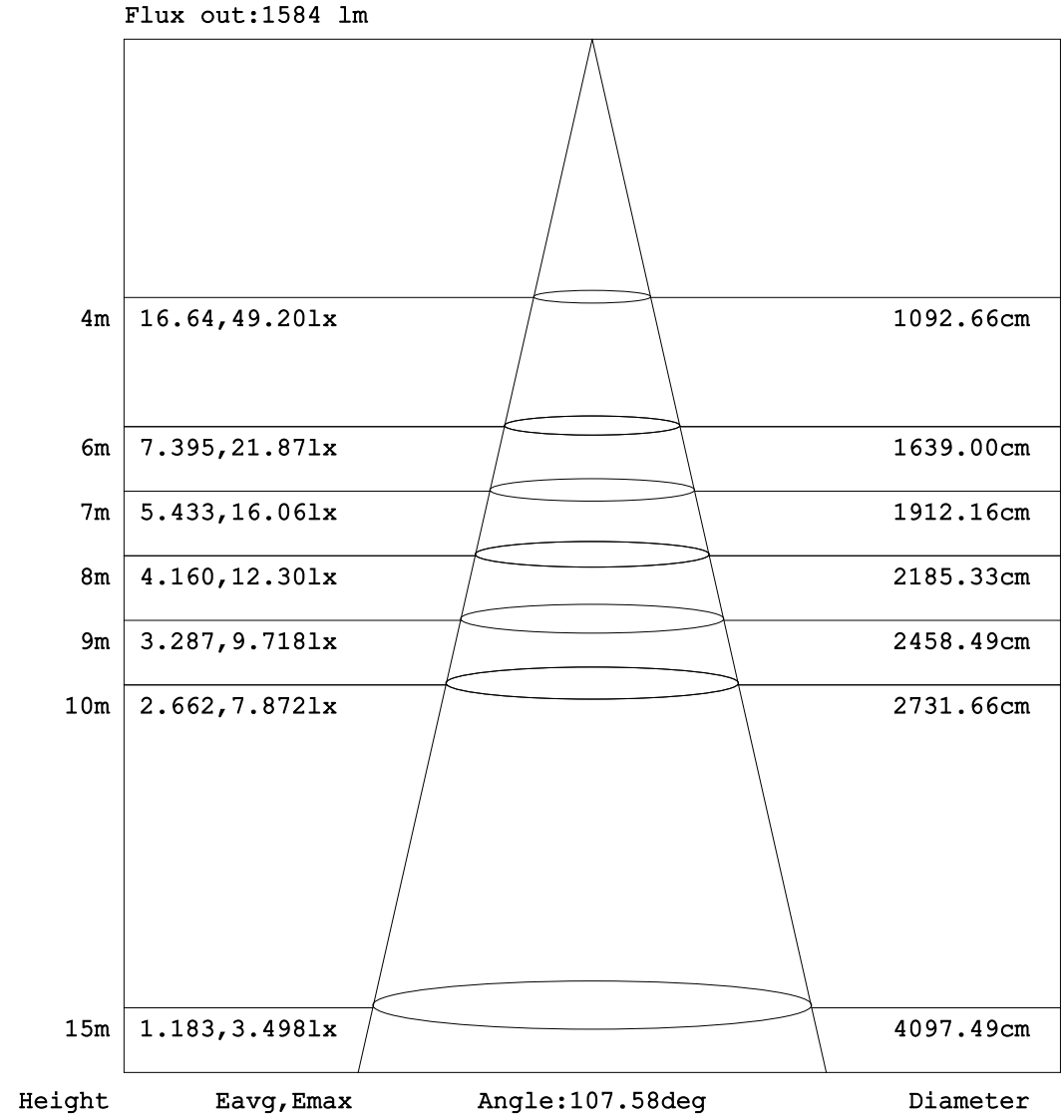
ISOCANDELA DIAGRAM



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

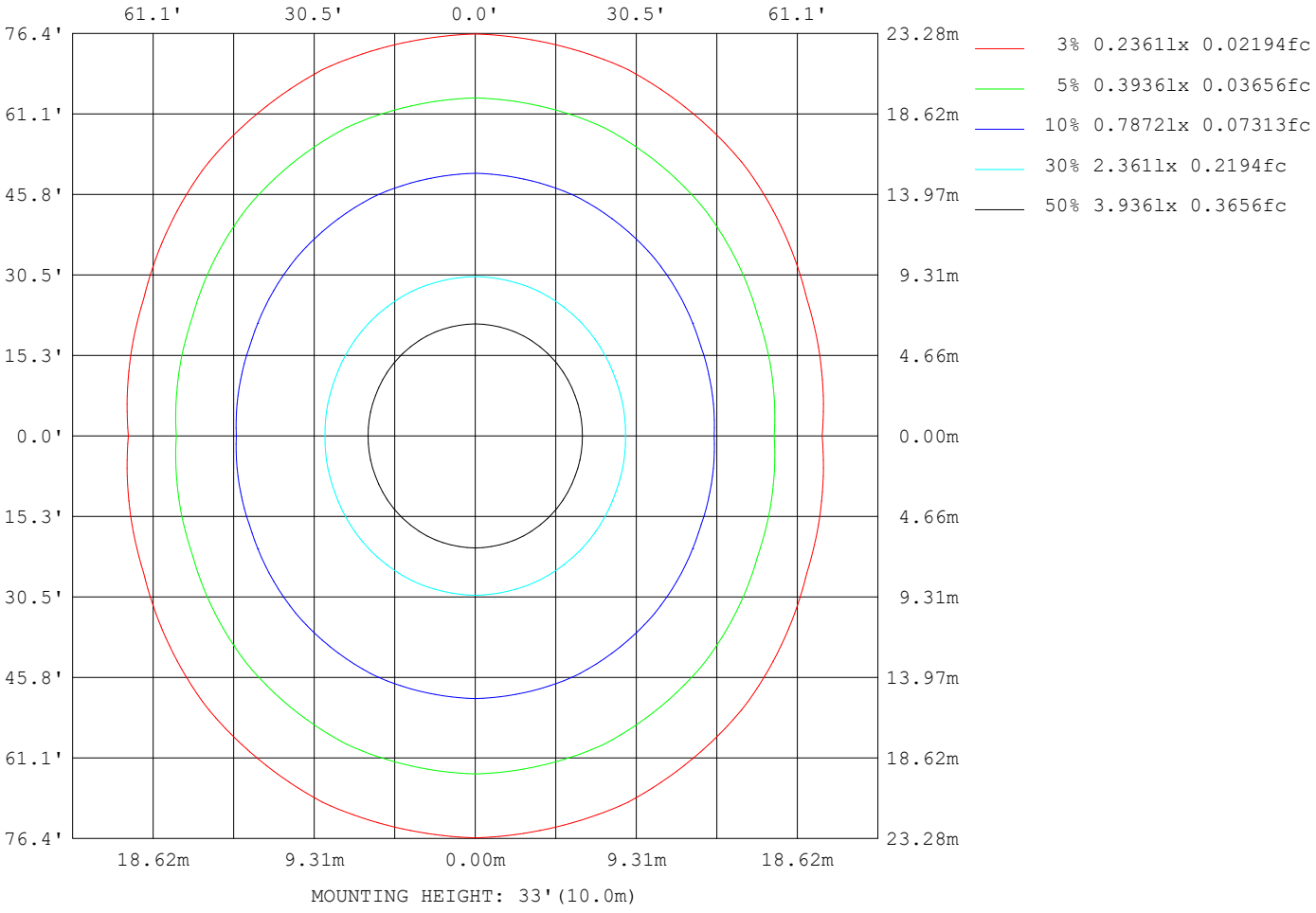


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:

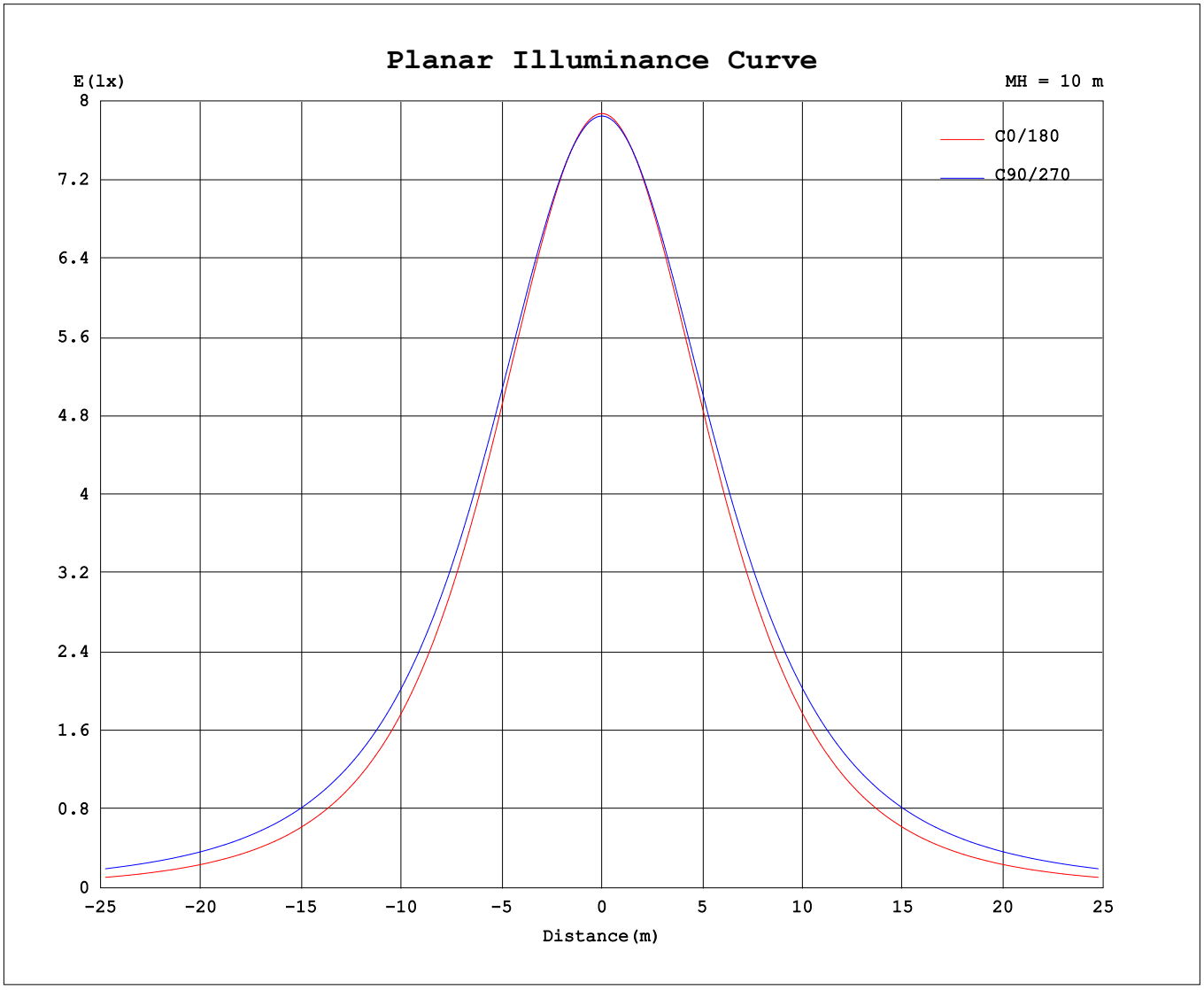
ISOLUX DIAGRAM



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: