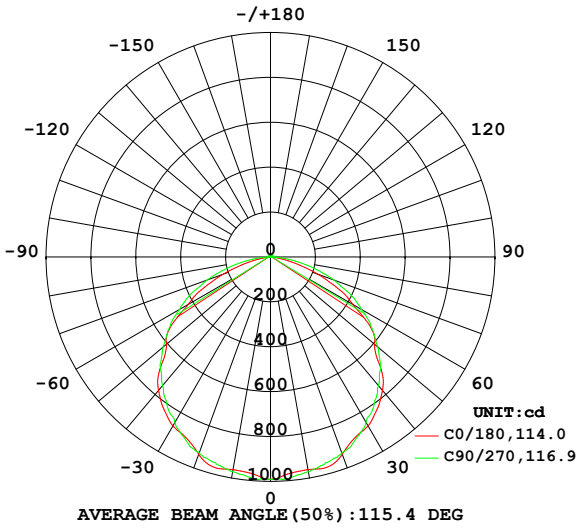
LUMINAIRE PHOTOMETRIC TEST REPORT

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:2983.04x1 lm		
NAME: LHB13-020-4080-L00C183	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

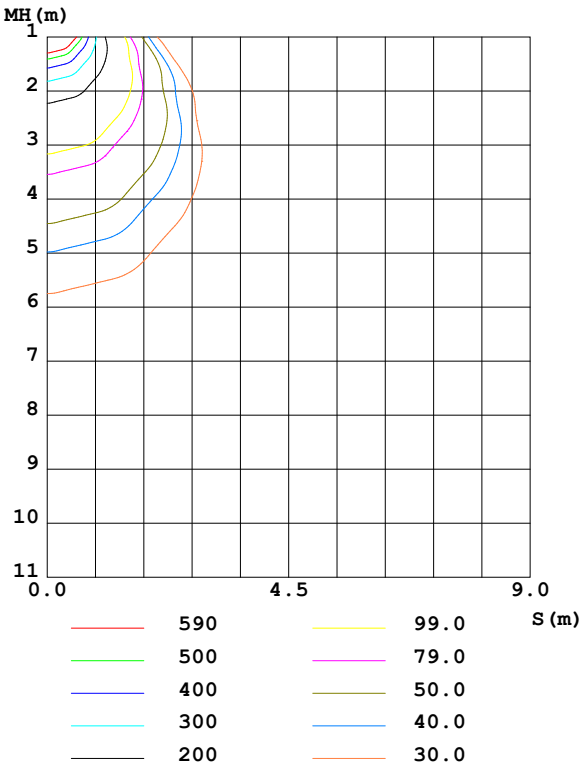
DATA OF LAMP		PHOTOMETRIC DATA		Eff: 149.15 lm/W	
MODEL	/	Imax(cd)	992.5	S/MH(C0/180)	1.31
NOMINAL POWER(W)	/	LOR(%)	100.0	S/MH(C90/270)	1.28
RATED VOLTAGE(V)	/	TOTAL FLUX(lm)	2983.0	η UP,DN(C0-180)	0.6,49.4
NOMINAL FLUX(lm)	2983.04	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.6,49.4
LAMPS INSIDE	1	η up(%)	1.2	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	/	η down(%)	98.8	CIBSE SHR MAX	1.50

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):115.4 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	962.4	951.1	971.8	951.1	962.4	951.1	971.8	951.1	0- 10	92.66	92.66	3.11,3.11
20	935.5	933.3	928.6	933.3	935.5	933.3	928.6	933.3	10- 20	268.4	361.1	12.1,12.1
30	869.5	864.2	851.7	864.2	869.5	864.2	851.7	864.2	20- 30	413.0	774.0	25.9,25.9
40	776.2	749.1	748.7	749.1	776.2	749.1	748.7	749.1	30- 40	509.1	1283	43,43
50	604.9	638.5	624.7	638.5	604.9	638.5	624.7	638.5	40- 50	539.0	1822	61.1,61.1
60	424.5	480.8	467.3	480.8	424.5	480.8	467.3	480.8	50- 60	493.7	2316	77.6,77.6
70	223.3	309.4	299.1	309.4	223.3	309.4	299.1	309.4	60- 70	371.8	2688	90.1,90.1
80	49.32	124.2	119.5	124.2	49.32	124.2	119.5	124.2	70- 80	206.1	2894	97,97
90	2.154	13.31	12.00	13.31	2.154	13.31	12.00	13.31	80- 90	53.35	2947	98.8,98.8
100	8.517	11.79	10.78	11.79	8.517	11.79	10.78	11.79	90-100	12.03	2959	99.2,99.2
110	5.005	8.381	8.814	8.381	5.005	8.381	8.814	8.381	100-110	9.782	2969	99.5,99.5
120	3.766	5.422	6.188	5.422	3.766	5.422	6.188	5.422	110-120	6.064	2975	99.7,99.7
130	2.810	3.535	4.291	3.535	2.810	3.535	4.291	3.535	120-130	3.725	2979	99.9,99.9
140	2.244	2.219	2.927	2.219	2.244	2.219	2.927	2.219	130-140	2.191	2981	99.9,99.9
150	1.307	1.488	1.920	1.488	1.307	1.488	1.920	1.488	140-150	1.210	2982	100,100
160	1.061	1.215	1.359	1.215	1.061	1.215	1.359	1.215	150-160	0.6283	2983	100,100
170	0.9519	0.9757	1.143	0.9757	0.9519	0.9757	1.143	0.9757	160-170	0.3182	2983	100,100
180	1.085	1.108	1.008	1.108	1.085	1.108	1.008	1.108	170-180	0.0947	2983	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1554.1 lm

%lum = 52.1%
%lamp = 52.1%

Conical surface Flux(120deg): 2315.8 lm

%lum = 77.6%
%lamp = 77.6%

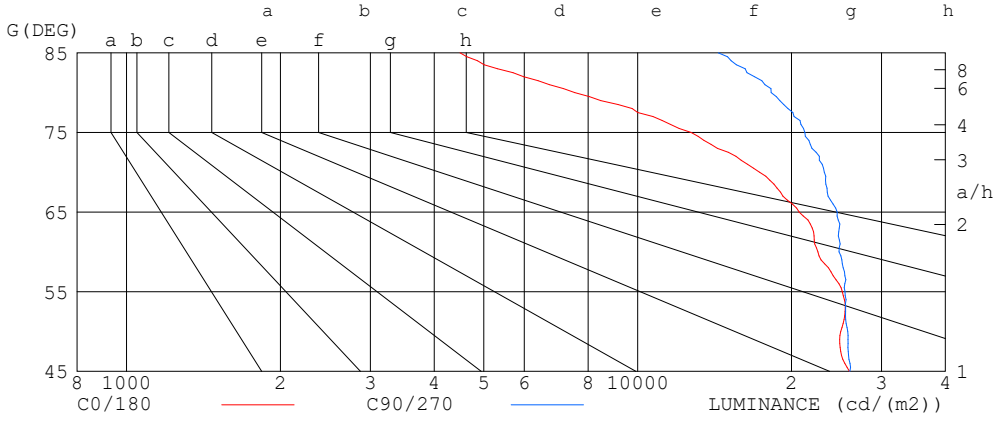
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:LYJ
Test Date:2022-05-03

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	4491	14381
80	7535	18248
75	12726	21240
70	17322	23183
65	20702	24572
60	22523	24780
55	25146	25452
50	24967	25766
45	25962	26016

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

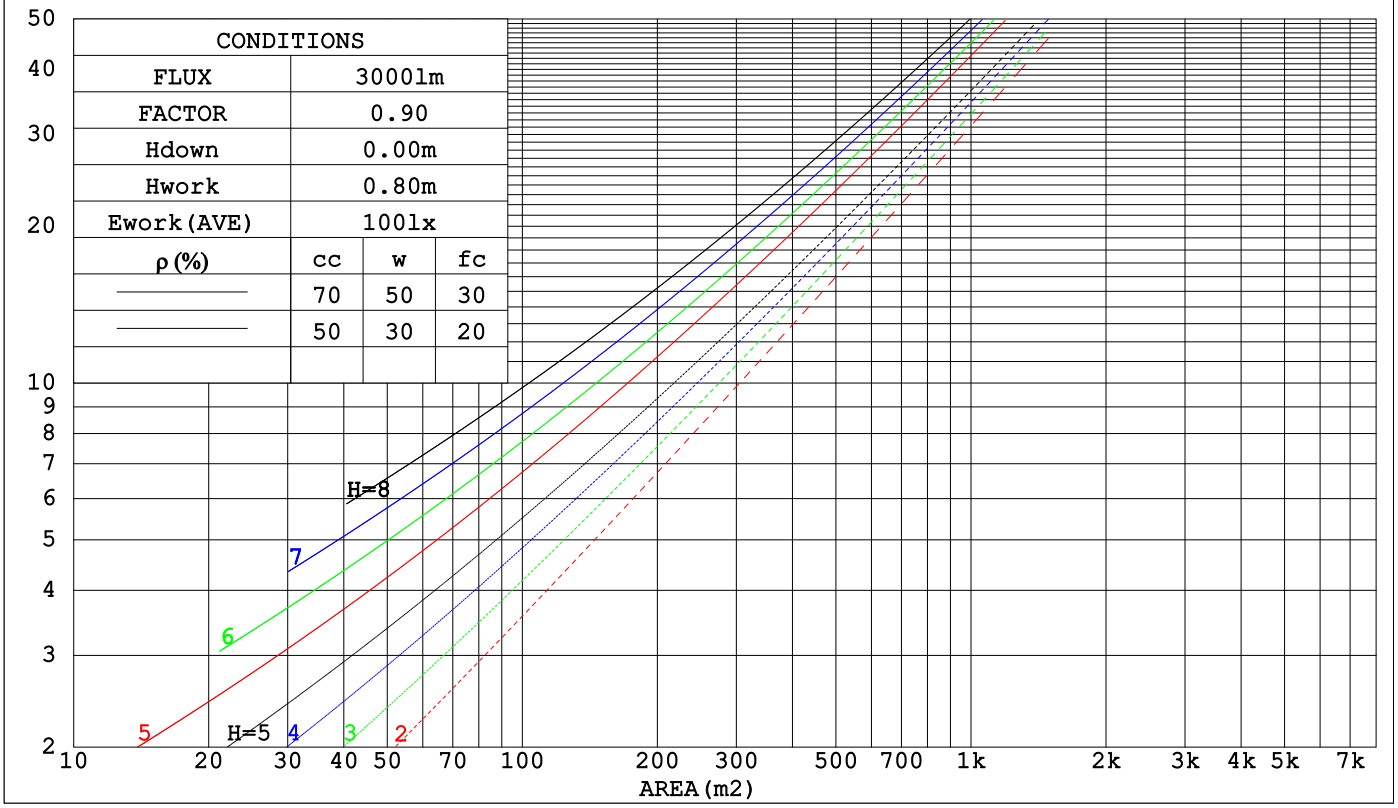
γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:26.000m [K=0.0446]
Remarks:

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	1.19	1.19	1.19	1.16	1.16	1.16	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	.99
1.0	1.04	.99	.95	1.01	.97	.94	.97	.93	.90	.93	.90	.88	.89	.87	.85	.83
2.0	.90	.83	.77	.88	.82	.76	.84	.79	.74	.81	.76	.72	.78	.74	.71	.68
3.0	.79	.71	.64	.77	.70	.63	.74	.67	.62	.71	.66	.61	.68	.64	.60	.57
4.0	.70	.61	.54	.68	.60	.54	.66	.58	.53	.63	.57	.52	.61	.55	.51	.49
5.0	.62	.53	.46	.61	.52	.46	.59	.51	.45	.57	.50	.45	.55	.49	.44	.42
6.0	.56	.47	.40	.55	.46	.40	.53	.45	.40	.51	.44	.39	.49	.43	.39	.37
7.0	.51	.42	.35	.50	.41	.35	.48	.40	.35	.46	.40	.35	.45	.39	.34	.32
8.0	.46	.37	.32	.45	.37	.31	.44	.36	.31	.43	.36	.31	.41	.35	.31	.29
9.0	.42	.34	.28	.42	.34	.28	.40	.33	.28	.39	.33	.28	.38	.32	.28	.26
10.0	.39	.31	.26	.38	.31	.26	.37	.30	.25	.36	.30	.25	.35	.29	.25	.23

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	.310	.177	.056	.303	.173	.055	.289	.166	.053	.276	.159	.051	.264	.153	.049	
2.0	.293	.160	.049	.286	.158	.049	.274	.152	.047	.262	.147	.046	.252	.143	.045	
3.0	.271	.144	.043	.265	.142	.043	.254	.138	.042	.244	.134	.041	.235	.130	.040	
4.0	.250	.130	.038	.245	.128	.038	.235	.125	.037	.226	.122	.037	.218	.118	.036	
5.0	.232	.118	.034	.227	.116	.034	.218	.114	.033	.210	.111	.033	.203	.108	.033	
6.0	.215	.108	.031	.211	.106	.031	.203	.104	.030	.196	.102	.030	.189	.099	.030	
7.0	.200	.099	.028	.196	.098	.028	.189	.096	.028	.183	.094	.027	.177	.092	.027	
8.0	.187	.091	.026	.183	.090	.026	.177	.088	.025	.171	.087	.025	.166	.085	.025	
9.0	.175	.085	.024	.172	.084	.024	.166	.082	.023	.161	.081	.023	.156	.079	.023	
10.0	.164	.079	.022	.162	.078	.022	.157	.077	.022	.152	.075	.021	.147	.074	.021	

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	.200	.200	.200	.171	.171	.171	.116	.116	.116	.067	.067	.067	.021	.021	.021	
1.0	.190	.165	.144	.162	.142	.124	.111	.098	.085	.064	.057	.050	.020	.018	.016	
2.0	.182	.141	.107	.156	.122	.093	.107	.084	.065	.062	.049	.038	.020	.016	.012	
3.0	.174	.124	.084	.149	.107	.072	.102	.074	.051	.059	.043	.030	.019	.014	.010	
4.0	.167	.110	.068	.143	.095	.059	.098	.067	.041	.057	.039	.024	.018	.013	.008	
5.0	.159	.100	.056	.137	.087	.049	.094	.061	.035	.055	.036	.021	.018	.012	.007	
6.0	.152	.092	.048	.131	.079	.042	.090	.056	.030	.052	.033	.018	.017	.011	.006	
7.0	.145	.085	.043	.125	.074	.037	.086	.052	.026	.050	.030	.016	.016	.010	.005	
8.0	.139	.079	.038	.120	.069	.033	.083	.048	.024	.048	.028	.014	.016	.009	.005	
9.0	.133	.074	.035	.114	.064	.030	.079	.045	.021	.046	.027	.013	.015	.009	.004	
10.0	.127	.070	.032	.110	.061	.028	.076	.043	.020	.044	.025	.012	.014	.008	.004	

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	23.3	24.9	23.6	25.2	25.6	23.5	25.1	23.9	25.5	25.8
3H	24.8	26.2	25.2	26.6	27.0	25.3	26.8	25.7	27.2	27.6
4H	25.2	26.6	25.6	27.0	27.4	26.0	27.4	26.4	27.8	28.2
6H	25.4	26.7	25.8	27.1	27.5	26.5	27.8	26.9	28.2	28.6
8H	25.4	26.7	25.9	27.1	27.5	26.6	27.9	27.1	28.3	28.7
12H	25.4	26.6	25.9	27.0	27.5	26.7	27.9	27.2	28.3	28.8
4H 2H	24.0	25.4	24.4	25.8	26.2	24.2	25.6	24.6	26.0	26.4
3H	25.8	27.0	26.2	27.4	27.8	26.3	27.4	26.7	27.8	28.3
4H	26.4	27.5	26.9	27.9	28.4	27.1	28.1	27.5	28.5	29.0
6H	26.7	27.7	27.2	28.1	28.6	27.7	28.6	28.1	29.0	29.5
8H	26.8	27.7	27.3	28.1	28.6	27.8	28.7	28.3	29.2	29.7
12H	26.8	27.6	27.3	28.1	28.6	28.0	28.7	28.5	29.2	29.7
8H 4H	26.8	27.7	27.3	28.1	28.6	27.4	28.2	27.9	28.7	29.2
6H	27.3	28.0	27.8	28.5	29.0	28.1	28.8	28.6	29.3	29.8
8H	27.4	28.1	28.0	28.6	29.1	28.4	29.0	28.9	29.5	30.0
12H	27.5	28.1	28.1	28.6	29.2	28.5	29.1	29.1	29.6	30.2
12H 4H	26.8	27.6	27.3	28.1	28.6	27.4	28.2	27.9	28.7	29.2
6H	27.4	28.0	27.9	28.5	29.1	28.2	28.8	28.7	29.3	29.9
8H	27.6	28.1	28.1	28.7	29.2	28.5	29.0	29.0	29.5	30.1
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:

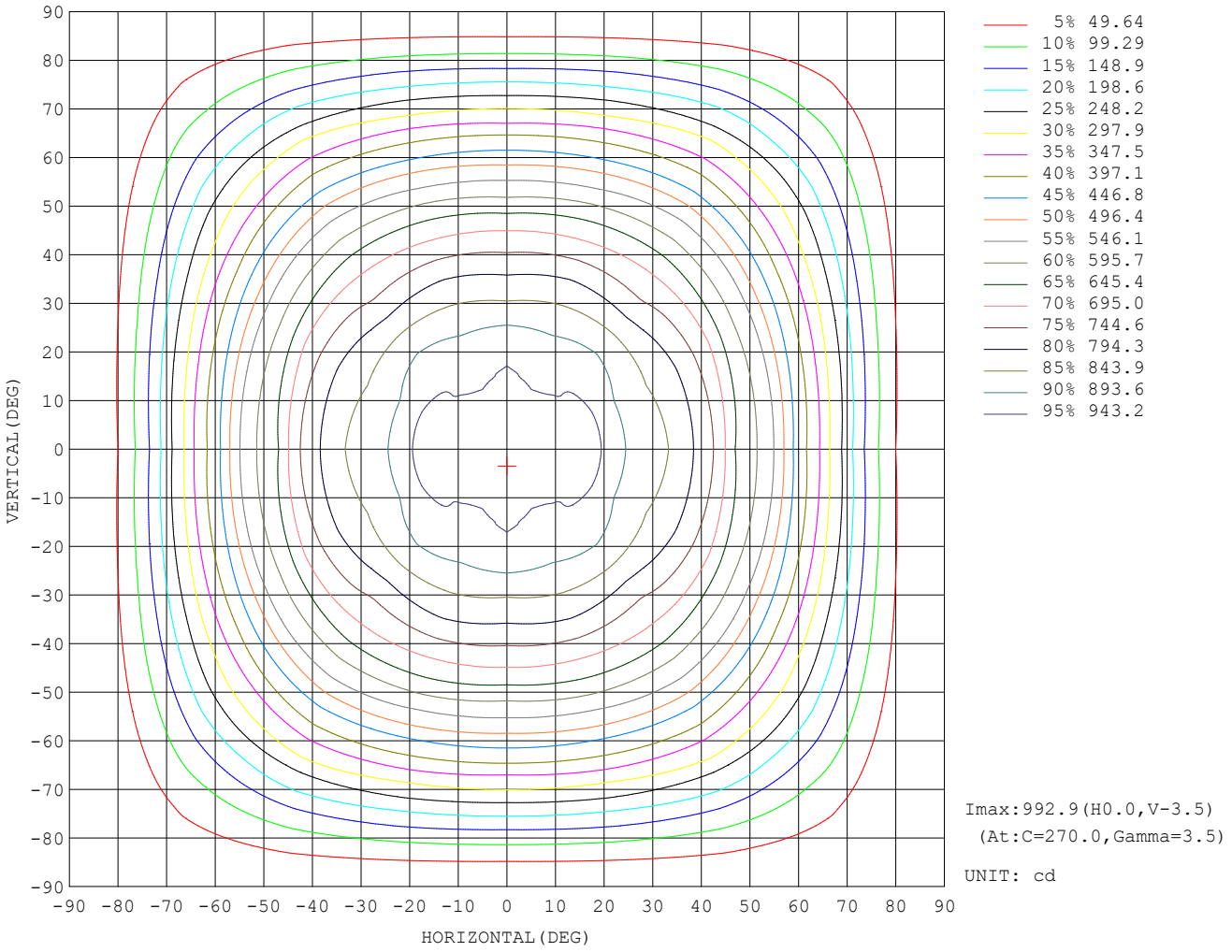
UTILIZATION FACTORS TABLE

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	56	45	38	56	44	38	54	44	37	31
0.80	67	55	47	65	54	47	64	53	47	40
1.00	75	64	56	74	63	56	71	65	56	48
1.25	82	72	64	81	71	64	78	69	63	56
1.50	87	77	70	86	76	70	82	74	69	61
2.00	94	86	79	92	84	78	89	82	77	69
2.50	98	90	84	96	89	83	92	86	81	73
3.00	102	95	89	99	93	88	95	90	86	77
4.00	106	100	95	103	98	94	99	95	91	82
5.00	108	103	99	106	101	97	101	97	94	85
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:

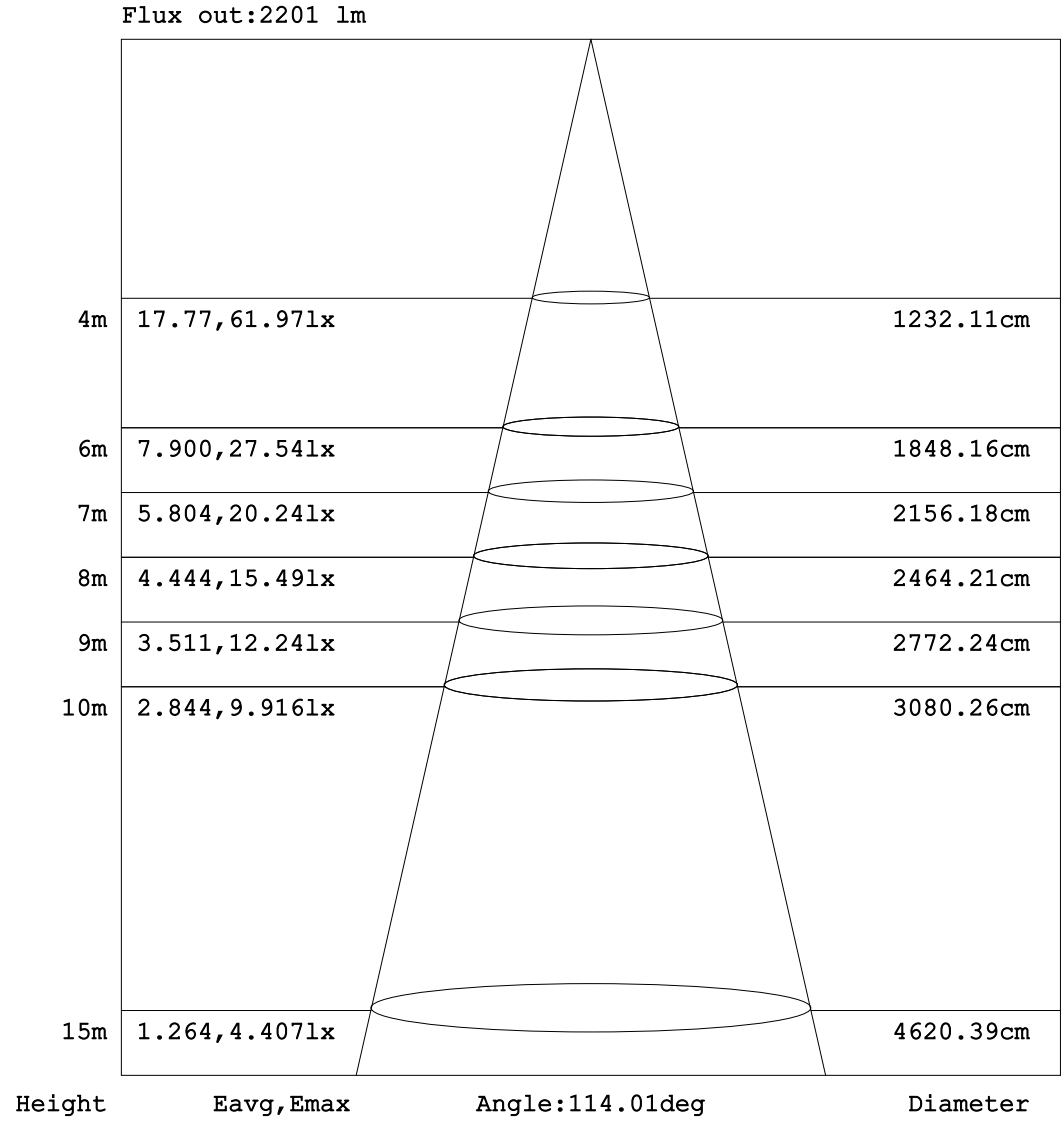
ISOCANDELA DIAGRAM



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

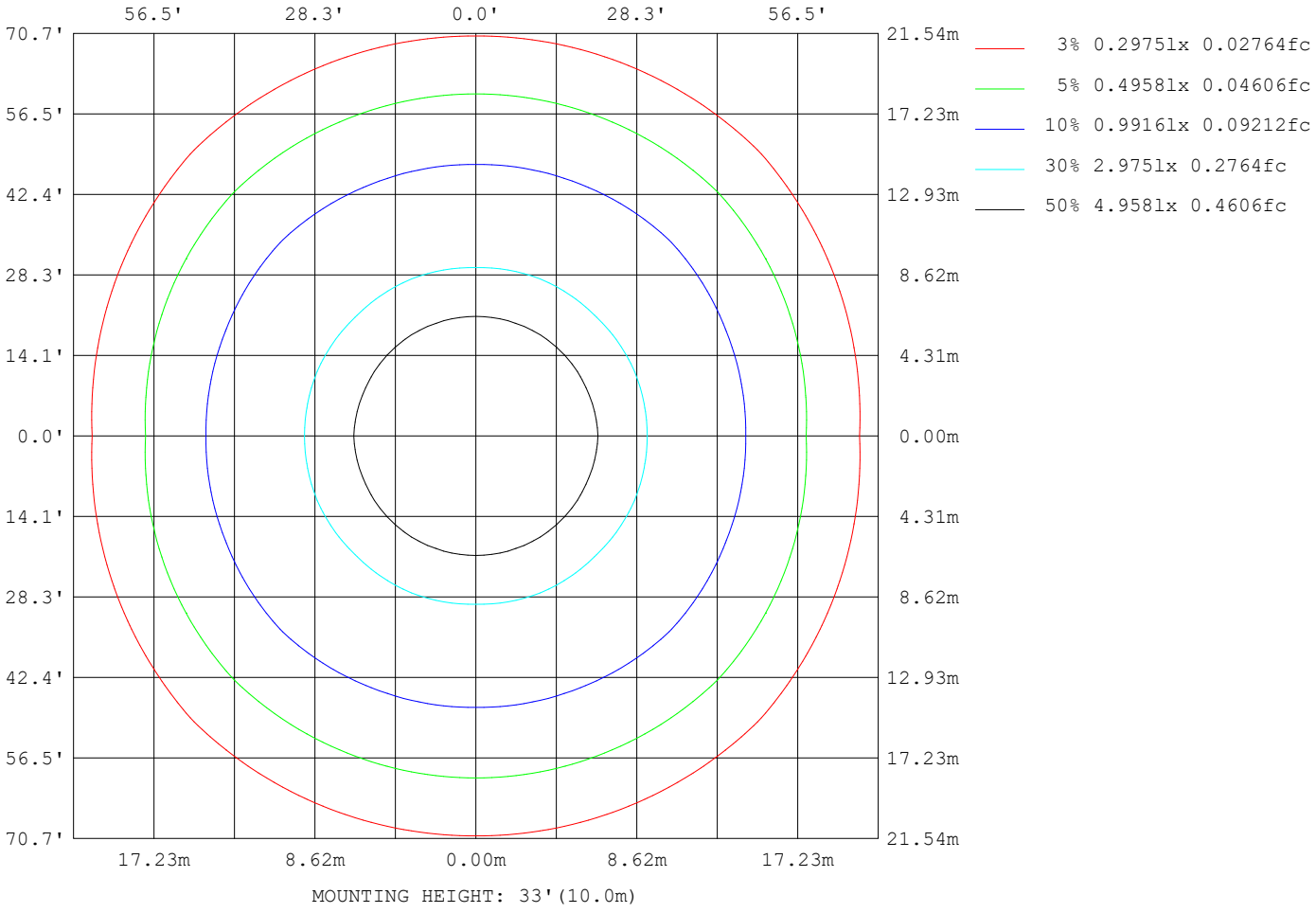


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:

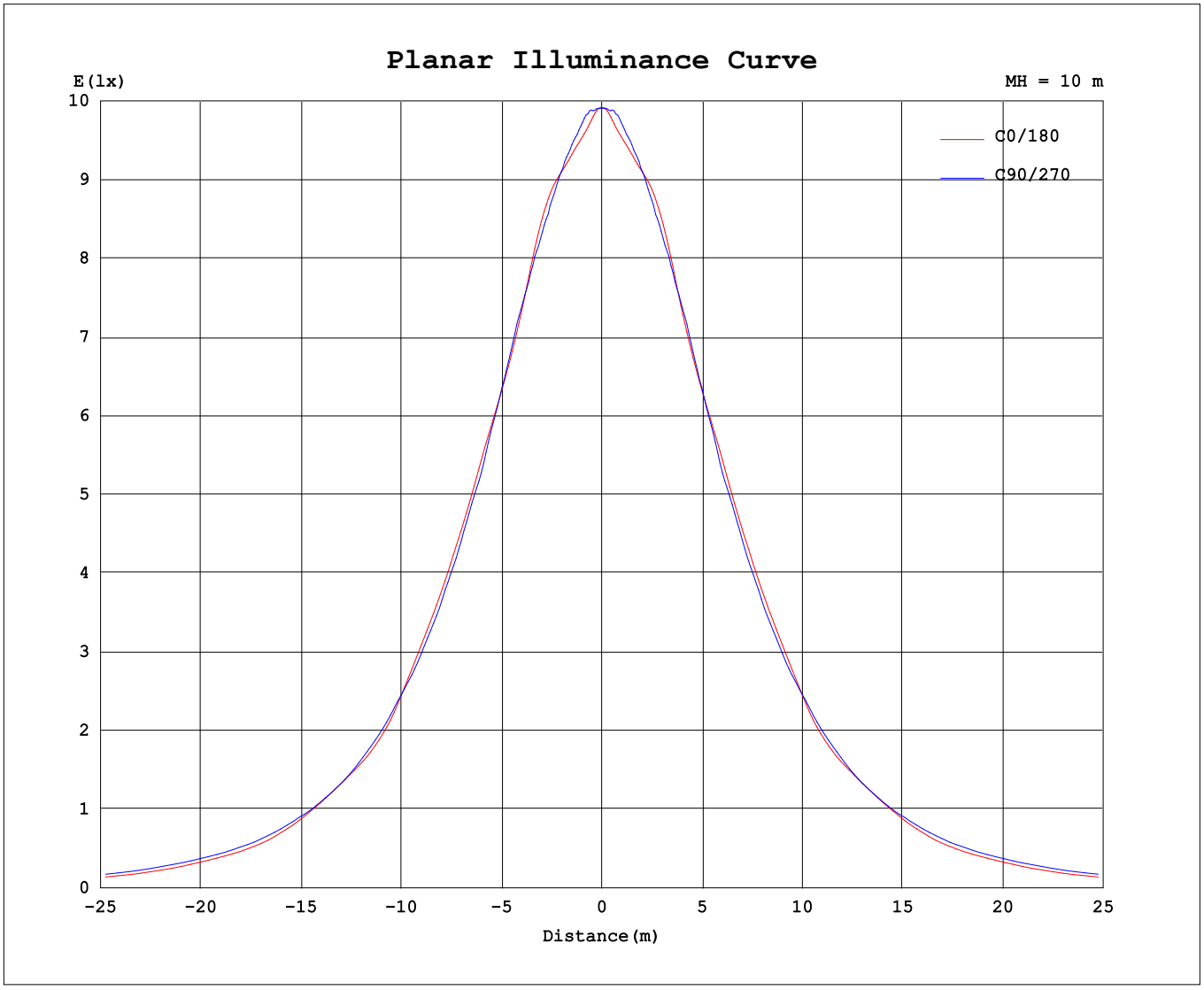
ISOLUX DIAGRAM



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: