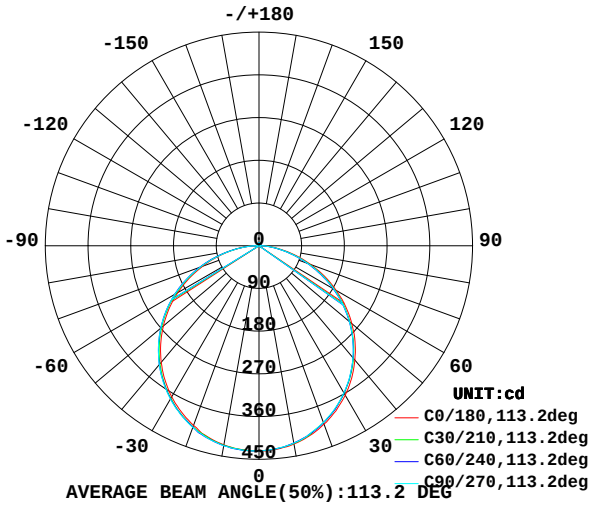
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.6V I:0.0520A P:12.10W PF:0.9530 Lamp Flux:1278.59x1 lm		
NAME: VO122	TYPE:12W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.1085	PROTECTION ANGLE:

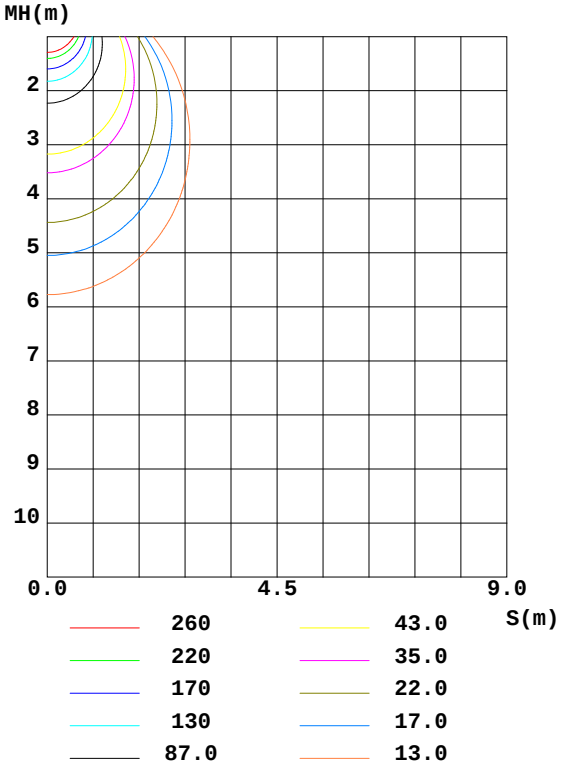
DATA OF LAMP		PHOTOMETRIC DATA Eff: 105.67 lm/W			
MODEL	VO122	Imax(cd)	432.6	S/MH(C0/180)	1.25
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	1.24
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1278.6	η UP,DN(C0-180)	1.1,47.5
NOMINAL FLUX(lm)	1278.59	CIE CLASS	DIRECT	η UP,DN(C180-360)	1.0,50.4
LAMPS INSIDE	1	η up(%)	2.1	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	240.6	η down(%)	97.9	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):113.2 DEG

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-09-04

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

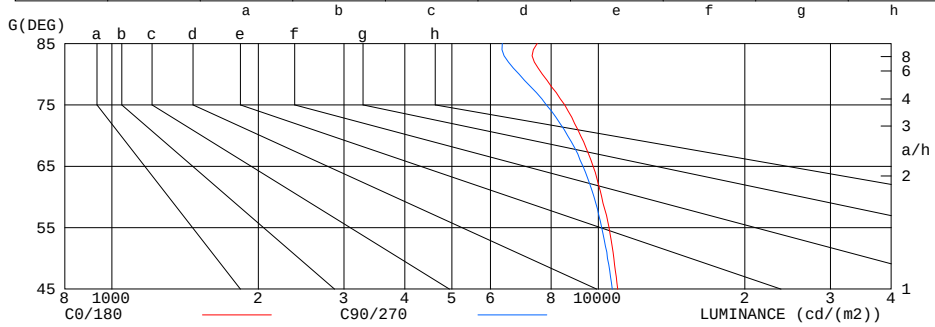
ZONAL FLUX DIAGRAM
AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	424.0	422.3	422.3	423.5	425.9	427.1	427.9	426.1	0- 10	40.91	40.91	3.2,3.2
20	400.1	396.8	396.3	399.0	403.0	406.4	407.2	403.8	10- 20	117.2	158.1	12.4,12.4
30	363.8	358.7	357.6	362.0	367.6	371.9	373.4	368.7	20- 30	177.5	335.5	26.2,26.2
40	314.4	308.8	308.3	313.2	320.5	325.8	326.8	321.5	30- 40	214.4	549.9	43,43
50	255.5	249.3	248.6	254.6	263.1	269.2	270.1	264.1	40- 50	223.2	773.1	60.5,60.5
60	187.6	181.4	181.5	187.6	197.5	203.9	204.9	197.9	50- 60	202.8	975.9	76.3,76.3
70	116.2	109.7	109.5	116.0	126.4	132.3	131.8	126.5	60- 70	155.5	1131	88.5,88.5
80	49.21	44.42	44.18	49.31	58.08	60.84	58.84	56.07	70- 80	90.70	1222	95.6,95.6
90	8.511	6.580	5.691	6.796	12.31	7.738	6.974	7.804	80- 90	29.71	1252	97.9,97.9
100	2.990	3.179	2.998	3.112	2.821	2.881	2.829	2.778	90-100	3.839	1256	98.2,98.2
110	3.635	3.706	3.632	3.685	3.314	3.268	3.209	3.221	100-110	3.375	1259	98.5,98.5
120	4.274	4.297	4.335	4.232	3.868	3.830	3.898	3.809	110-120	3.743	1263	98.8,98.8
130	4.885	4.838	4.778	4.689	4.401	4.360	4.321	4.291	120-130	3.878	1267	99.1,99.1
140	5.229	5.305	5.180	5.203	4.962	4.820	4.848	4.766	130-140	3.718	1270	99.4,99.4
150	5.832	5.740	5.919	5.664	5.363	5.294	5.285	5.266	140-150	3.313	1274	99.6,99.6
160	5.882	6.141	6.010	6.033	5.678	5.615	5.594	5.664	150-160	2.633	1276	99.8,99.8
170	6.204	6.348	6.256	6.291	6.036	5.976	6.024	5.970	160-170	1.699	1278	100,100
180	6.415	6.503	6.397	6.484	6.499	6.538	6.312	6.442	170-180	0.5956	1279	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

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	7489	6348
80	7674	6871
75	8528	7820
70	9197	8646
65	9755	9301
60	10159	9801
55	10520	10159
50	10763	10444
45	10960	10683

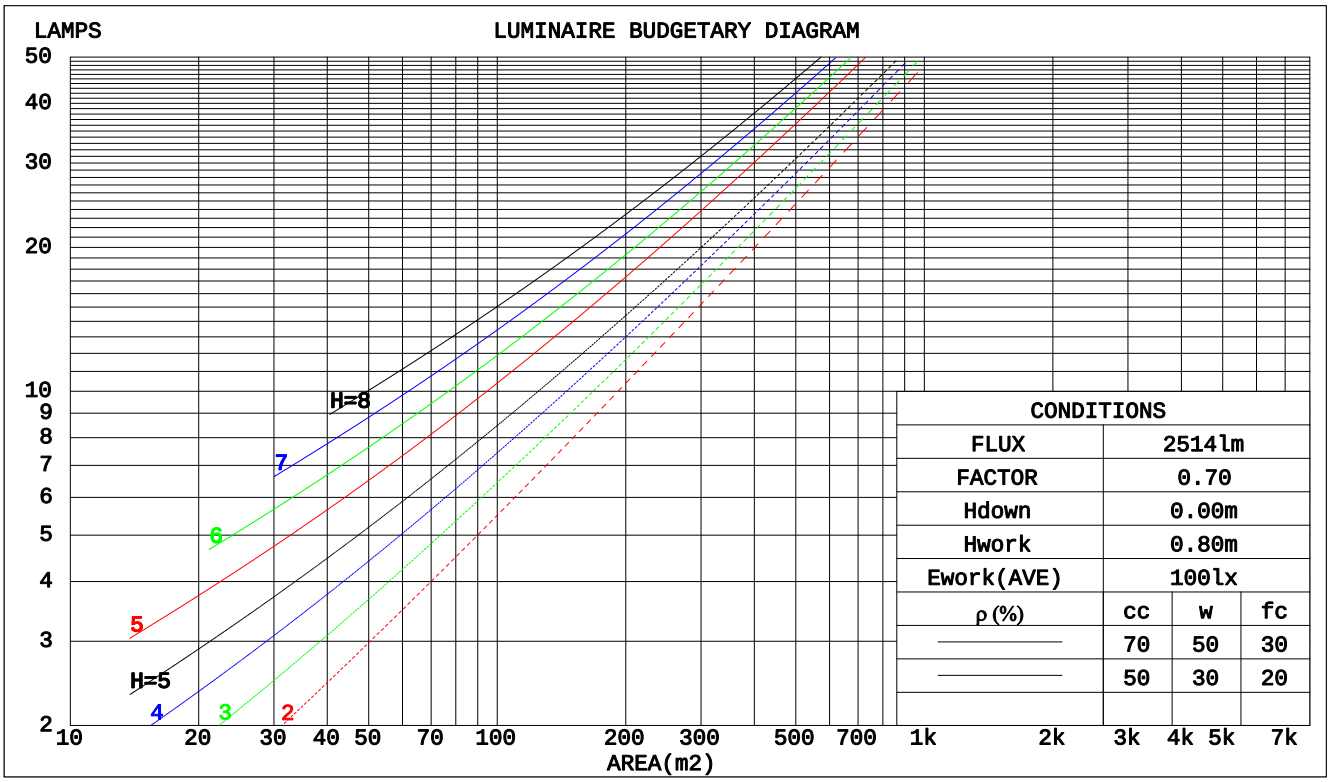
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-09-04

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.6V I:0.0520A P:12.10W PF:0.9530 Lamp Flux:1278.59x1 lm		
NAME: VO122	TYPE:12W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.1085	PROTECTION ANGLE:

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	1.00	1.00	1.00	.98
1.0	1.03	.99	.95	1.01	.97	.93	.96	.93	.90	.92	.89	.87	.88	.86	.84	.81
2.0	.90	.83	.77	.88	.81	.76	.84	.78	.74	.80	.76	.72	.77	.73	.70	.67
3.0	.79	.70	.64	.77	.69	.63	.74	.67	.62	.70	.65	.60	.68	.63	.59	.57
4.0	.70	.61	.54	.68	.60	.53	.65	.58	.52	.63	.56	.51	.60	.55	.51	.48
5.0	.62	.53	.46	.61	.52	.46	.58	.51	.45	.56	.50	.45	.54	.48	.44	.42
6.0	.56	.47	.40	.55	.46	.40	.53	.45	.40	.51	.44	.39	.49	.43	.38	.36
7.0	.51	.42	.36	.50	.41	.35	.48	.40	.35	.46	.40	.35	.45	.39	.34	.32
8.0	.46	.38	.32	.45	.37	.31	.44	.36	.31	.42	.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



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-09-04

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:240.6V I:0.0520A P:12.10W PF:0.9530 Lamp Flux:1278.59x1 lm		
NAME: VO122	TYPE:12W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.1085	PROTECTION ANGLE:

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	.315	.179	.057	.308	.175	.056	.293	.168	.054	.280	.161	.052	.268	.155	.050	
2.0	.295	.161	.050	.288	.158	.049	.275	.153	.047	.263	.148	.046	.252	.143	.045	
3.0	.272	.145	.043	.266	.142	.043	.254	.138	.042	.244	.134	.041	.234	.130	.040	
4.0	.250	.130	.038	.245	.128	.038	.235	.124	.037	.225	.121	.036	.217	.118	.036	
5.0	.231	.118	.034	.226	.116	.034	.217	.113	.033	.209	.110	.033	.201	.107	.032	
6.0	.214	.107	.031	.210	.106	.031	.202	.103	.030	.194	.101	.030	.187	.098	.029	
7.0	.199	.098	.028	.195	.097	.028	.188	.095	.027	.181	.093	.027	.175	.091	.027	
8.0	.186	.091	.026	.182	.090	.025	.176	.088	.025	.170	.086	.025	.164	.084	.025	
9.0	.174	.084	.024	.171	.083	.023	.165	.082	.023	.160	.080	.023	.154	.078	.023	
10.0	.164	.078	.022	.161	.078	.022	.155	.076	.021	.150	.075	.021	.146	.073	.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	.206	.206	.206	.176	.176	.176	.120	.120	.120	.069	.069	.069	.022	.022	.022	
1.0	.197	.172	.150	.168	.148	.129	.115	.102	.089	.066	.059	.052	.021	.019	.017	
2.0	.189	.148	.114	.162	.127	.098	.111	.088	.069	.064	.051	.040	.021	.017	.013	
3.0	.181	.131	.090	.155	.113	.078	.107	.078	.055	.062	.046	.032	.020	.015	.011	
4.0	.173	.117	.075	.149	.101	.065	.102	.071	.046	.059	.041	.027	.019	.013	.009	
5.0	.166	.107	.063	.143	.093	.055	.098	.065	.039	.057	.038	.023	.018	.012	.008	
6.0	.159	.099	.056	.137	.085	.048	.094	.060	.034	.055	.035	.020	.018	.012	.007	
7.0	.152	.092	.050	.131	.080	.043	.090	.056	.031	.052	.033	.018	.017	.011	.006	
8.0	.146	.086	.045	.125	.075	.039	.087	.052	.028	.050	.031	.017	.016	.010	.006	
9.0	.139	.081	.042	.120	.070	.036	.083	.050	.026	.048	.029	.015	.016	.010	.005	
10.0	.134	.077	.039	.115	.067	.034	.080	.047	.024	.047	.028	.014	.015	.009	.005	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-09-04

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

Uncorrected UGR Table

Test:U:240.6V I:0.0520A P:12.10W PF:0.9530 Lamp Flux:1278.59x1 lm		
NAME: VO122	TYPE:12W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.1085	PROTECTION ANGLE:

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	21.1	22.5	22.7	20.6	22.1	20.9	22.4	22.6
3H	22.3	23.6	22.6	23.9	24.2	22.0	23.4	22.4	23.7	24.0
4H	22.8	24.2	23.2	24.4	24.7	22.6	23.9	22.9	24.2	24.5
6H	23.3	24.5	23.6	24.8	25.1	22.9	24.2	23.3	24.5	24.8
8H	23.4	24.6	23.8	24.9	25.3	23.1	24.3	23.4	24.6	24.9
12H	23.5	24.7	23.9	25.0	25.3	23.1	24.3	23.5	24.6	25.0
4H 2H	21.3	22.6	21.7	22.9	23.2	21.2	22.5	21.5	22.8	23.1
3H	23.0	24.1	23.4	24.5	24.8	22.8	23.9	23.2	24.3	24.6
4H	23.7	24.7	24.1	25.1	25.5	23.4	24.5	23.9	24.9	25.2
6H	24.2	25.2	24.7	25.5	26.0	23.9	24.9	24.4	25.3	25.7
8H	24.4	25.3	24.9	25.7	26.1	24.1	25.0	24.5	25.4	25.8
12H	24.6	25.4	25.0	25.8	26.2	24.2	25.0	24.7	25.4	25.9
8H 4H	23.9	24.8	24.3	25.2	25.6	23.7	24.6	24.1	25.0	25.4
6H	24.6	25.3	25.0	25.7	26.2	24.3	25.0	24.8	25.5	25.9
8H	24.9	25.5	25.3	26.0	26.5	24.5	25.2	25.0	25.7	26.2
12H	25.1	25.6	25.6	26.1	26.7	24.7	25.3	25.3	25.8	26.3
12H 4H	23.9	24.7	24.4	25.1	25.6	23.7	24.5	24.1	24.9	25.4
6H	24.6	25.3	25.1	25.7	26.2	24.4	25.0	24.8	25.5	26.0
8H	24.9	25.5	25.4	26.0	26.5	24.6	25.2	25.1	25.7	26.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117 Corrected 1279 lm Total Lamp Luminous Flux.(8log(F/F0) = 0.9)

C Range: 0 - 360DEG
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Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-09-04

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.6V I:0.0520A P:12.10W PF:0.9530 Lamp Flux:1278.59x1 lm		
NAME: VO122	TYPE:12W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.1085	PROTECTION ANGLE:

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	57	45	38	56	45	38	54	44	38	31
0.80	67	55	47	65	54	47	63	53	47	40
1.00	75	64	56	74	63	56	71	64	55	48
1.25	82	71	64	80	71	64	77	69	63	55
1.50	87	77	70	85	76	69	82	74	68	60
2.00	94	85	79	92	84	78	88	81	76	68
2.50	98	90	84	96	88	83	92	85	81	72
3.00	101	94	89	99	93	87	95	89	85	76
4.00	105	99	95	103	98	93	98	94	90	81
5.00	108	103	99	105	101	97	100	97	94	84
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004				Suspended					SHRNOM = 1.25	

C Range: 0 - 360DEG
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γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

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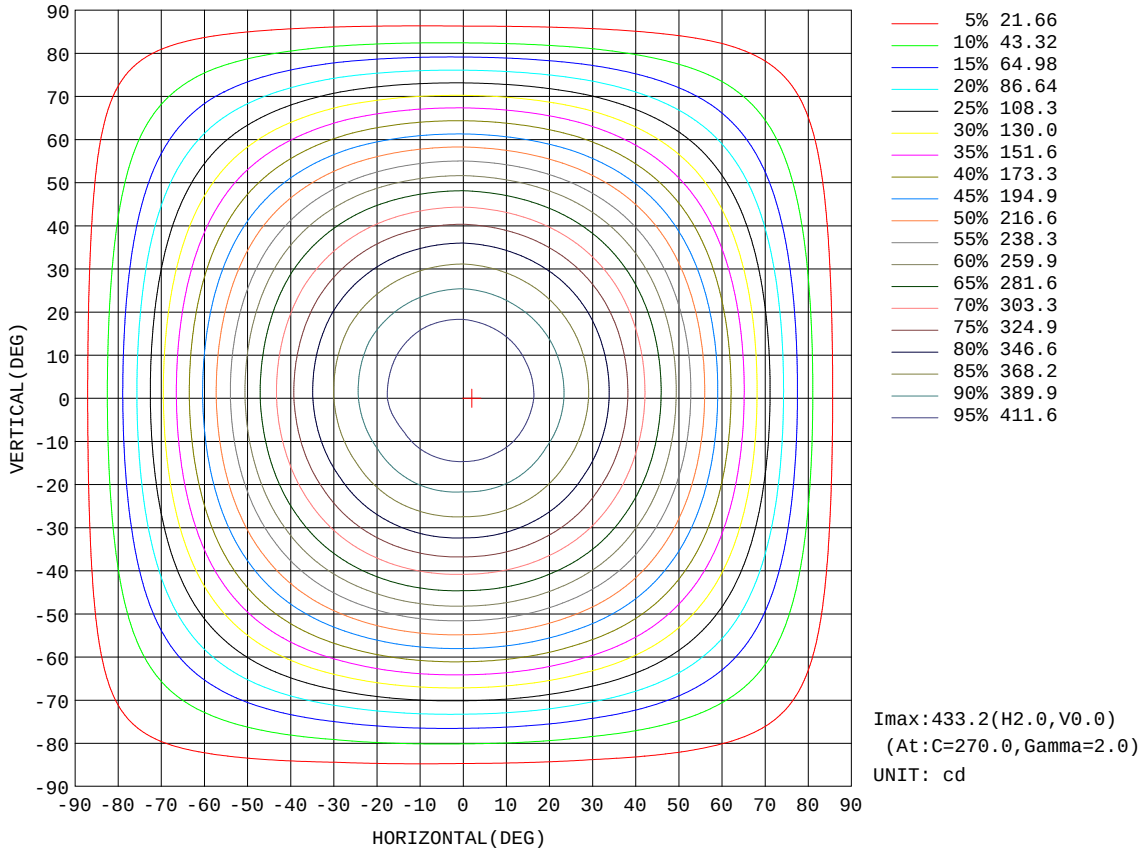
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.1085	PROTECTION ANGLE:



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AAI Figure

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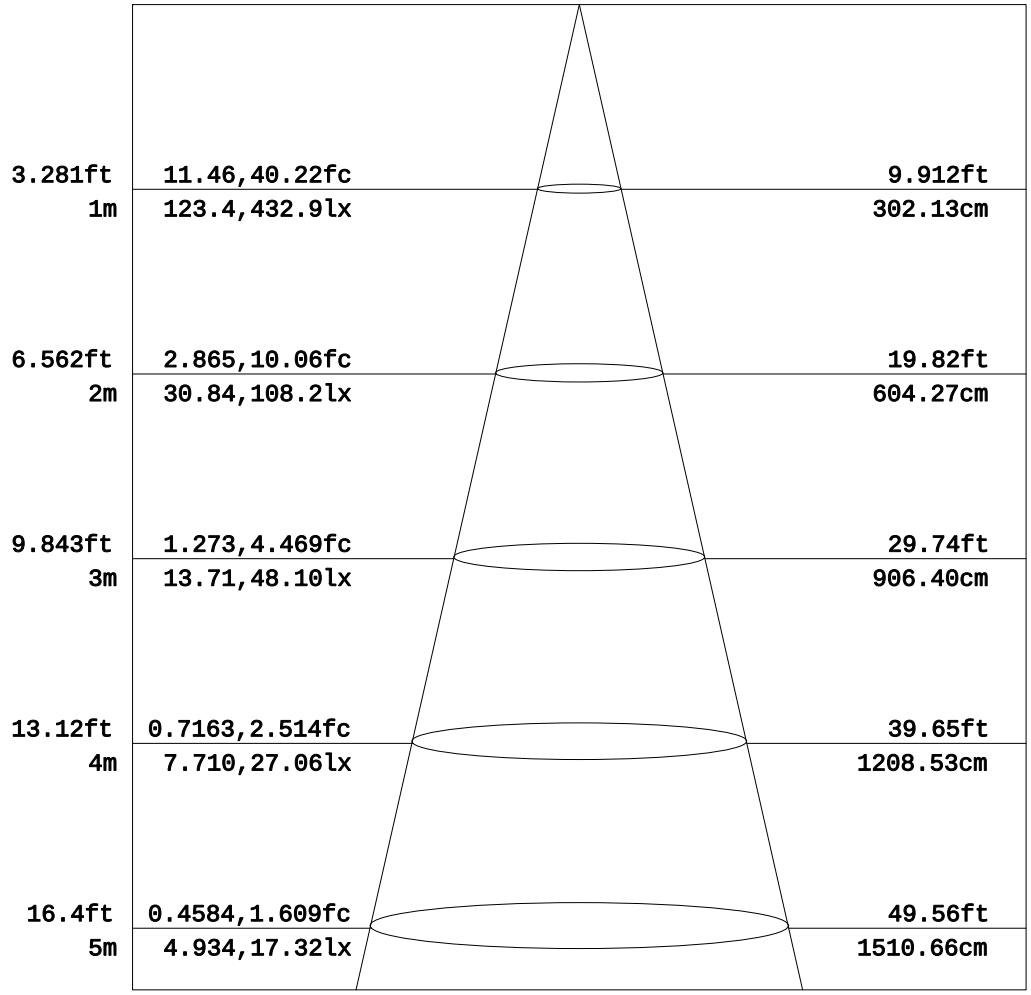
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.1085	PROTECTION ANGLE:

Flux out:918.9 lm



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

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ISOLUX DIAGRAM

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DIM.:	SPEC.:3000K	SERIAL No.:1
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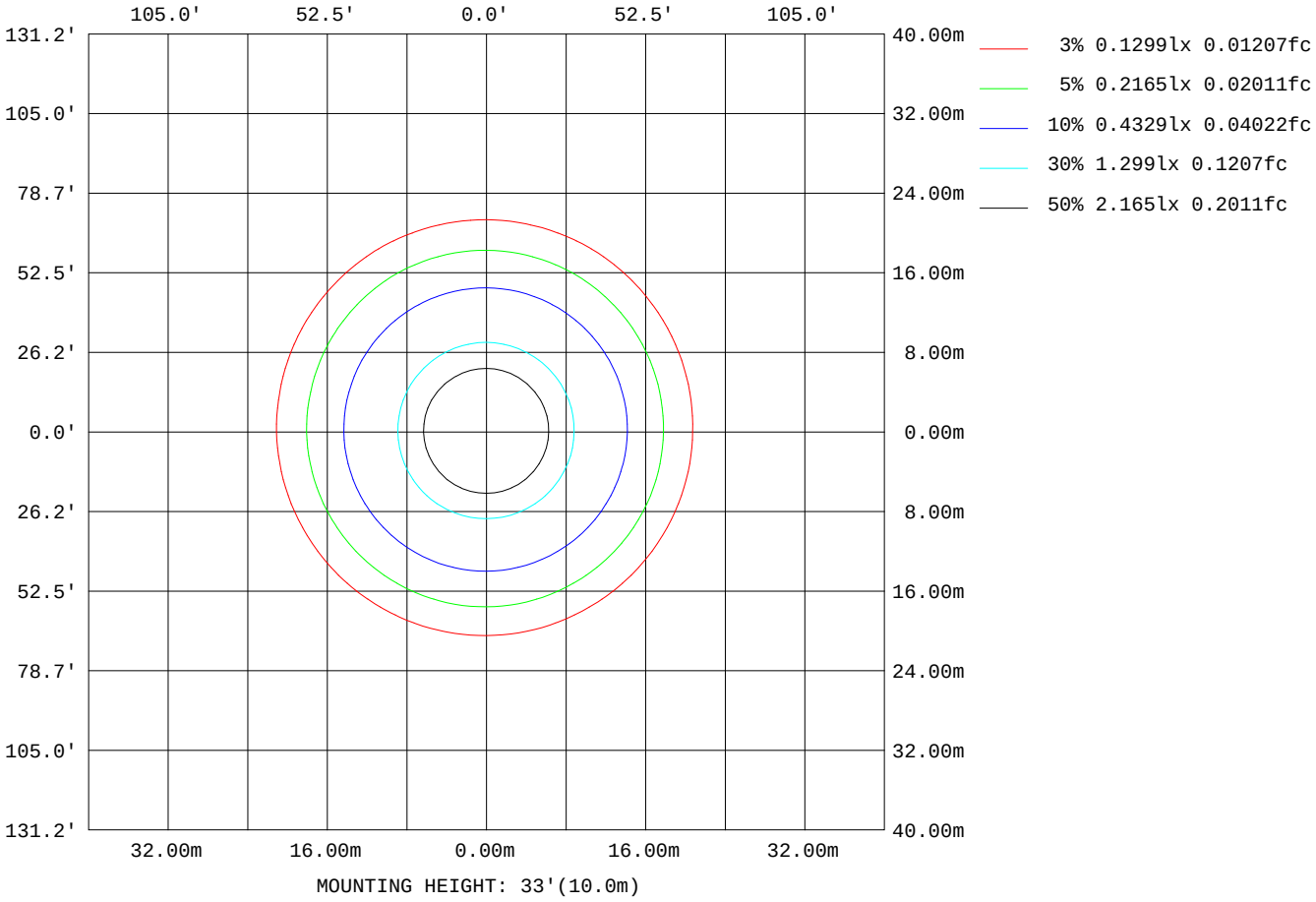

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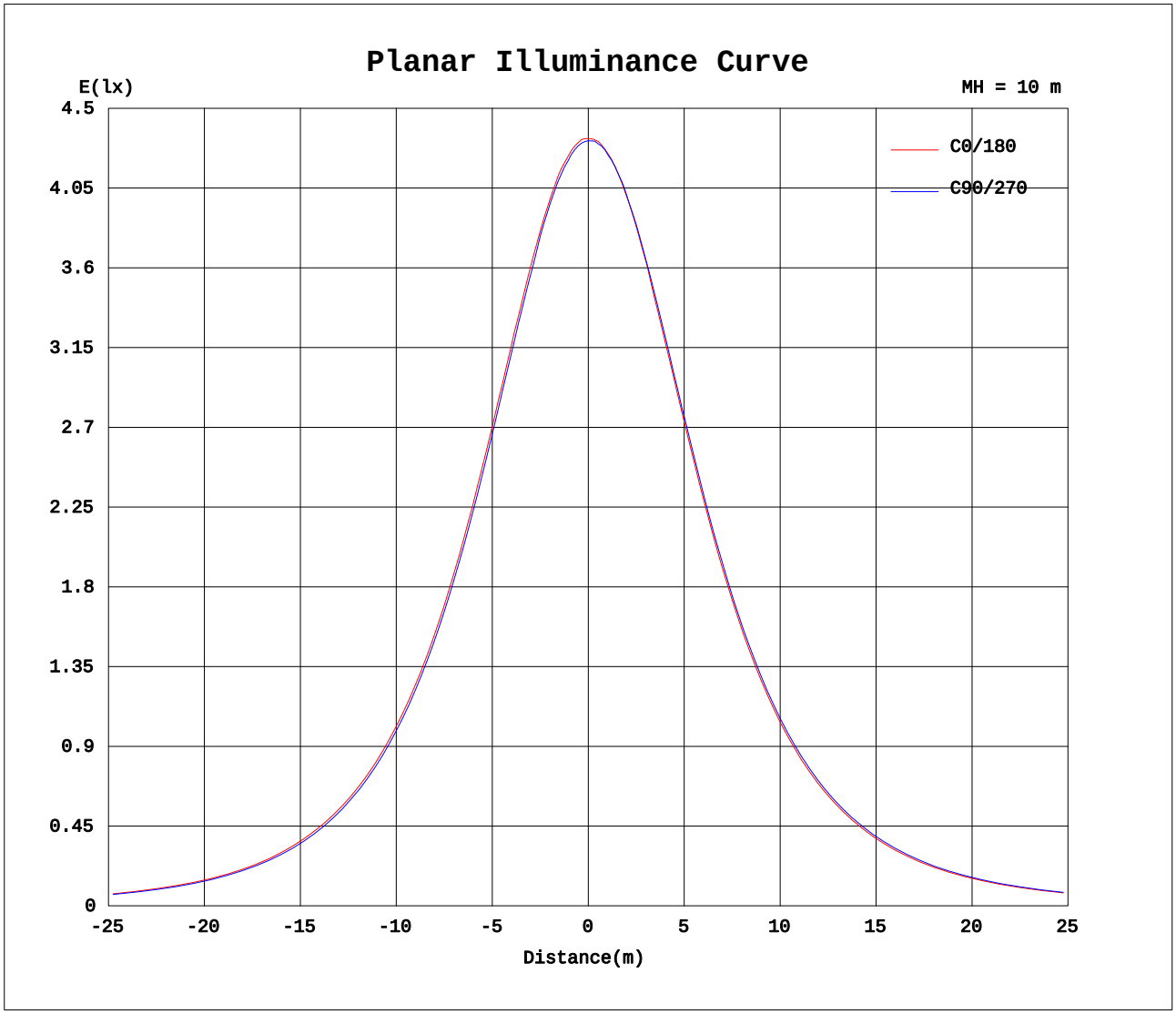
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-09-04

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-09-04

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:240.6V I:0.0520A P:12.10W PF:0.9530 Lamp Flux:1278.59x1 lm		
NAME: VO122	TYPE:12W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.1085	PROTECTION ANGLE:

Table--1 UNIT: cd

γ (DEG) \ C(DEG)	0	30	60	90	120	150	180	210	240	270	300	330
0	432	432	432	432	432	432	432	432	432	432	432	432
5	430	429	429	429	429	430	431	431	432	432	431	431
10	424	423	422	422	423	424	426	427	428	428	426	426
15	414	413	411	411	412	415	417	418	420	419	418	416
20	400	397	397	396	398	400	403	406	407	407	404	403
25	384	379	380	378	381	383	387	390	391	392	388	387
30	364	359	359	358	360	364	368	371	373	373	370	368
35	340	336	335	334	337	341	345	349	351	352	348	346
40	314	309	308	308	311	315	321	325	327	327	323	320
45	286	281	280	280	283	287	293	297	300	300	295	292
50	255	250	248	249	252	257	263	268	271	270	266	262
55	223	217	215	216	220	225	231	236	239	239	235	230
60	188	183	180	181	184	191	198	202	206	205	201	195
65	152	147	144	146	149	155	162	167	170	169	166	160
70	116	111	108	109	113	119	126	131	133	132	129	124
75	81.5	76.7	73.8	75.0	78.2	84.1	90.9	95.0	96.4	94.4	92.4	87.9
80	49.2	45.6	43.3	44.2	46.7	51.9	58.1	60.7	61.0	58.8	57.6	54.5
85	24.1	21.9	20.2	20.5	22.3	26.2	30.6	30.7	29.9	28.2	27.9	26.7
90	8.51	7.22	5.93	5.69	5.64	7.95	12.3	8.63	6.85	6.97	7.37	8.24
95	2.82	2.98	2.87	2.93	3.01	2.88	2.66	2.63	3.95	3.89	3.22	2.72
100	2.99	3.28	3.08	3.00	3.12	3.10	2.82	2.84	2.93	2.83	2.74	2.81
105	3.26	3.52	3.40	3.33	3.50	3.28	3.05	2.96	3.01	2.91	2.96	3.00
110	3.64	3.77	3.64	3.63	3.81	3.56	3.31	3.23	3.31	3.21	3.22	3.22
115	3.96	4.11	3.95	3.99	4.02	3.87	3.58	3.42	3.58	3.65	3.52	3.54
120	4.27	4.35	4.25	4.34	4.33	4.14	3.87	3.85	3.81	3.90	3.74	3.88
125	4.63	4.63	4.54	4.62	4.56	4.46	4.13	4.11	4.09	4.19	3.97	4.07
130	4.88	4.87	4.80	4.78	4.71	4.67	4.40	4.41	4.31	4.32	4.24	4.35
135	5.14	5.13	5.04	4.90	4.93	4.98	4.68	4.67	4.63	4.57	4.44	4.66
140	5.23	5.29	5.32	5.18	5.13	5.27	4.96	4.79	4.85	4.85	4.71	4.83
145	5.41	5.55	5.57	5.62	5.37	5.50	5.20	5.01	5.08	5.09	4.94	5.06
150	5.83	5.79	5.70	5.92	5.61	5.72	5.36	5.27	5.32	5.28	5.29	5.24
155	5.97	6.00	5.90	5.97	5.78	5.86	5.48	5.45	5.44	5.46	5.54	5.49
160	5.88	6.13	6.15	6.01	6.03	6.03	5.68	5.63	5.60	5.59	5.68	5.64
165	6.25	6.25	6.30	6.16	6.21	6.17	5.91	5.91	5.79	5.85	5.87	5.77
170	6.20	6.31	6.39	6.26	6.33	6.25	6.04	6.02	5.93	6.02	6.01	5.93
175	6.36	6.34	6.43	6.33	6.37	6.32	6.21	6.21	6.15	6.12	6.15	6.14
180	6.41	6.51	6.50	6.40	6.43	6.54	6.50	6.53	6.55	6.31	6.45	6.43

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