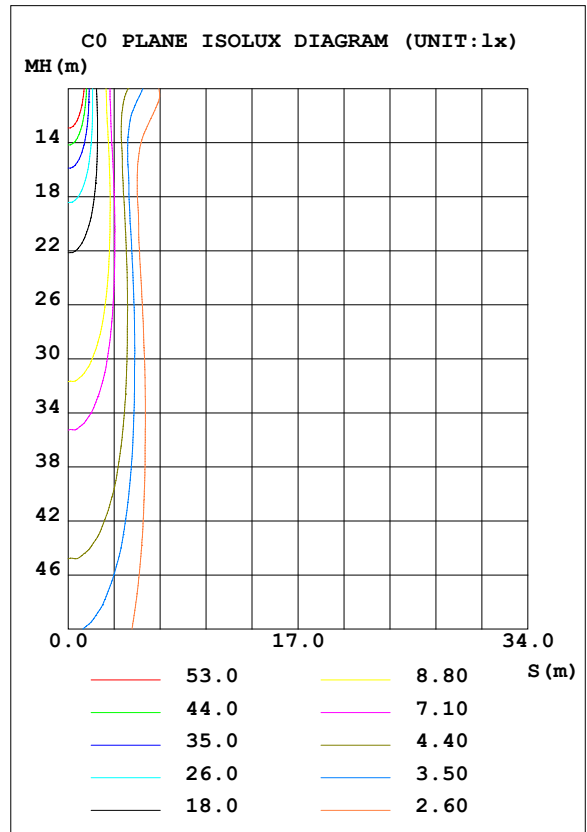
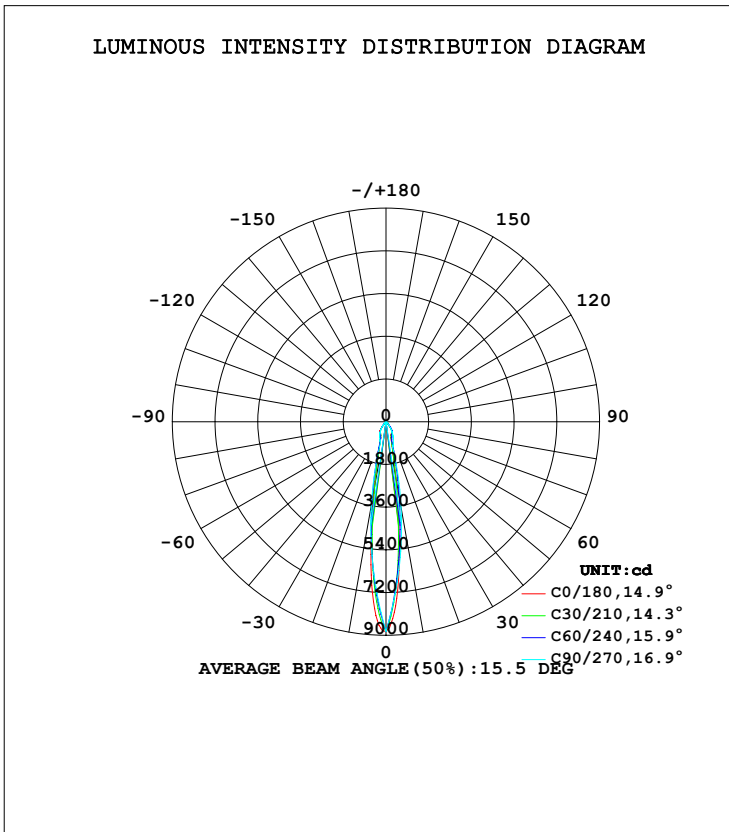


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 69.23 lm/W			
MODEL	Juvenis AC-20W-3000K-15D	I <sub>max</sub> (cd)	8832	S/MH (C0/180)	0.27
NOMINAL POWER (W)	20	LOR (%)	155.4	S/MH (C90/270)	0.29
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	1405.3	η UP, DN (C0-180)	0.0, 76.0
NOMINAL FLUX (lm)	904.29	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 79.4
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE (V)	229.9	η down (%)	155.4	CIBSE SHR MAX	1.00



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

**ZONAL FLUX DIAGRAM**

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\%lum, lamp$
5	6917	6222	6193	5881	6299	5919	6259	6262	0- 5	172.1	172.1	12.2,19
10	2838	3072	3555	2696	2380	2745	3686	3124	5- 10	310.3	482.4	34.3,53.3
15	1085	1221	916.0	1090	924.9	1133	1113	1261	10- 15	221.6	704.0	50.1,77.9
20	659.7	650.6	775.0	630.3	625.1	666.0	916.6	678.7	15- 20	136.0	840.1	59.8,92.9
25	560.3	540.9	634.0	533.2	547.6	564.5	720.5	568.3	20- 25	132.5	972.5	69.2,108
30	512.4	434.1	493.0	431.7	502.7	470.5	524.3	477.9	25- 30	136.2	1109	78.9,123
35	401.2	287.5	344.2	281.5	381.8	331.7	365.5	346.3	30- 35	128.6	1237	88,137
40	125.4	115.7	195.3	106.1	108.2	153.1	206.6	162.0	35- 40	88.83	1326	94.4,147
45	44.87	40.97	46.47	39.00	46.52	57.72	47.71	61.53	40- 45	41.56	1368	97.3,151
50	32.39	19.70	32.68	19.37	29.67	24.39	33.25	25.64	45- 50	18.43	1386	98.6,153
55	6.114	5.588	18.89	5.714	5.861	7.192	18.80	8.219	50- 55	9.098	1395	99.3,154
60	3.859	4.701	5.109	4.671	3.975	4.764	4.342	4.850	55- 60	4.196	1399	99.6,155
65	2.966	4.315	4.367	4.113	3.099	3.418	3.470	3.326	60- 65	2.067	1401	99.7,155
70	2.171	3.882	3.626	3.537	2.330	2.386	2.598	2.288	65- 70	1.603	1403	99.8,155
75	1.447	3.182	2.884	2.677	1.530	1.226	1.726	1.228	70- 75	1.274	1404	99.9,155
80	0.1061	2.085	0	1.571	0.0937	0.1940	0	0.2332	75- 80	0.7518	1405	100,155
85	0	0	0	0	0.0234	0	0	0	80- 85	0.2212	1405	100,155
90	0	0	0	0	0.0041	0	0	0	85- 90	0.0524	1405	100,155
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			

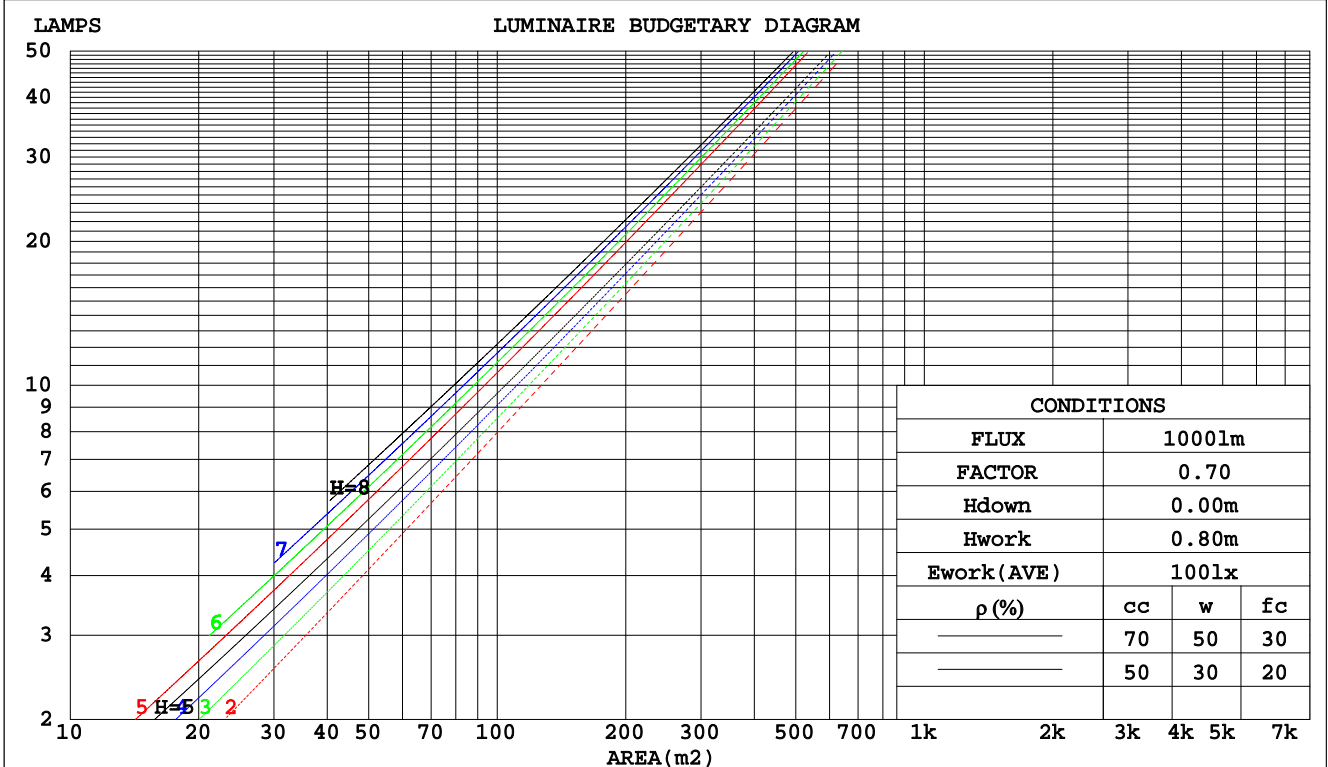
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio      Coefficients of Utilization(CU)															
0.0	1.85	1.85	1.85	1.81	1.81	1.81	1.73	1.73	1.73	1.65	1.65	1.65	1.59	1.59	1.59	1.55
1.0	1.74	1.71	1.68	1.71	1.68	1.65	1.65	1.62	1.60	1.59	1.57	1.55	1.54	1.52	1.51	1.48
2.0	1.64	1.59	1.55	1.62	1.57	1.53	1.57	1.53	1.49	1.52	1.49	1.46	1.48	1.46	1.43	1.41
3.0	1.56	1.49	1.44	1.54	1.48	1.43	1.50	1.45	1.41	1.46	1.42	1.38	1.43	1.39	1.36	1.34
4.0	1.48	1.41	1.35	1.46	1.40	1.35	1.43	1.37	1.33	1.40	1.35	1.32	1.37	1.33	1.30	1.28
5.0	1.41	1.34	1.28	1.40	1.33	1.28	1.37	1.31	1.26	1.35	1.29	1.25	1.32	1.28	1.24	1.22
6.0	1.35	1.27	1.22	1.34	1.27	1.21	1.32	1.25	1.21	1.30	1.24	1.20	1.28	1.23	1.19	1.17
7.0	1.29	1.22	1.16	1.28	1.21	1.16	1.27	1.20	1.16	1.25	1.19	1.15	1.23	1.18	1.14	1.13
8.0	1.24	1.17	1.12	1.23	1.16	1.11	1.22	1.16	1.11	1.21	1.15	1.11	1.19	1.14	1.10	1.08
9.0	1.20	1.12	1.07	1.19	1.12	1.07	1.18	1.11	1.07	1.17	1.11	1.07	1.15	1.10	1.06	1.05
10.0	1.16	1.08	1.04	1.15	1.08	1.03	1.14	1.08	1.03	1.13	1.07	1.03	1.12	1.06	1.03	1.01



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-11-08

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

WEC AND CCEC

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	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 Coefficients(WEC)									
0.0																
1.0	.239	.136	.043	.228	.130	.041	.209	.120	.038	.191	.110	.035	.175	.101	.033	
2.0	.225	.124	.038	.217	.119	.037	.201	.112	.035	.186	.104	.033	.172	.097	.031	
3.0	.213	.113	.034	.205	.110	.033	.192	.104	.032	.179	.098	.030	.168	.093	.029	
4.0	.201	.104	.031	.195	.102	.030	.183	.097	.029	.172	.093	.028	.162	.088	.027	
5.0	.190	.097	.028	.185	.095	.028	.175	.091	.027	.165	.087	.026	.157	.084	.025	
6.0	.180	.090	.026	.176	.089	.026	.167	.086	.025	.159	.083	.024	.151	.080	.024	
7.0	.171	.085	.024	.167	.083	.024	.160	.081	.023	.153	.078	.023	.146	.076	.022	
8.0	.163	.080	.022	.160	.079	.022	.153	.076	.022	.147	.074	.021	.141	.072	.021	
9.0	.156	.075	.021	.153	.074	.021	.147	.073	.021	.141	.071	.020	.136	.069	.020	
10.0	.149	.071	.020	.146	.071	.020	.141	.069	.019	.136	.067	.019	.131	.066	.019	

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	.296	.296	.296	.253	.253	.253	.173	.173	.173	.099	.099	.099	.032	.032	.032	
1.0	.263	.245	.228	.225	.210	.196	.154	.145	.136	.089	.084	.079	.028	.027	.026	
2.0	.237	.206	.180	.203	.177	.156	.139	.123	.108	.080	.071	.064	.026	.023	.021	
3.0	.216	.176	.145	.185	.152	.125	.127	.106	.088	.073	.062	.052	.024	.020	.017	
4.0	.198	.153	.118	.170	.132	.103	.117	.092	.072	.068	.054	.043	.022	.018	.014	
5.0	.183	.134	.098	.157	.116	.086	.108	.081	.060	.063	.048	.036	.020	.016	.012	
6.0	.170	.119	.083	.146	.103	.072	.101	.072	.051	.058	.042	.030	.019	.014	.010	
7.0	.158	.107	.070	.136	.092	.061	.094	.065	.043	.055	.038	.026	.018	.013	.009	
8.0	.149	.096	.061	.128	.084	.053	.089	.059	.037	.052	.035	.022	.017	.011	.007	
9.0	.140	.088	.053	.121	.076	.046	.084	.054	.033	.049	.032	.019	.016	.010	.006	
10.0	.133	.081	.046	.114	.070	.040	.079	.049	.029	.046	.029	.017	.015	.010	.006	

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

Uncorrected UGR Table

NAME: Juvenis AC-20W-3000K-15D					TYPE:					WEIGHT:				
DIM.:					SPEC.:					SERIAL No.:				
MFR.: VIC BLACK					SUR.:					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	20.4	21.2	20.6	21.3	21.5	21.6	22.4	21.8	22.5	22.7				
3H	20.3	21.0	20.5	21.2	21.4	21.5	22.2	21.7	22.4	22.6				
4H	20.2	20.9	20.5	21.1	21.3	21.4	22.1	21.7	22.3	22.5				
6H	20.1	20.8	20.4	21.0	21.2	21.3	22.0	21.6	22.2	22.4				
8H	20.1	20.7	20.4	20.9	21.2	21.3	21.9	21.6	22.1	22.4				
12H	20.0	20.6	20.3	20.9	21.1	21.2	21.8	21.5	22.1	22.3				
4H 2H	20.2	20.9	20.5	21.1	21.3	21.4	22.0	21.6	22.3	22.5				
3H	20.1	20.6	20.4	20.9	21.2	21.2	21.8	21.5	22.1	22.4				
4H	20.0	20.5	20.3	20.8	21.1	21.2	21.7	21.5	22.0	22.3				
6H	19.9	20.4	20.3	20.7	21.0	21.1	21.6	21.4	21.9	22.2				
8H	19.9	20.3	20.2	20.7	21.0	21.0	21.5	21.4	21.8	22.2				
12H	19.8	20.2	20.2	20.6	21.0	21.0	21.4	21.4	21.7	22.1				
8H 4H	19.9	20.3	20.3	20.7	21.0	21.0	21.5	21.4	21.8	22.2				
6H	19.8	20.2	20.2	20.6	21.0	20.9	21.3	21.4	21.7	22.1				
8H	19.8	20.2	20.3	20.6	21.0	20.9	21.2	21.3	21.6	22.1				
12H	19.9	20.2	20.4	20.6	21.1	20.8	21.1	21.3	21.5	22.0				
12H 4H	19.8	20.2	20.2	20.6	21.0	21.0	21.4	21.4	21.8	22.2				
6H	19.8	20.1	20.2	20.5	20.9	20.9	21.2	21.3	21.6	22.1				
8H	19.8	20.1	20.3	20.5	21.0	20.8	21.1	21.3	21.6	22.0				
Variations with the observer position at spacings:														
S = 1.0H	+ 4.3 / - 8.6					+ 2.7 / - 9.4								
1.5H	+ 6.7 / - 7.9					+ 5.1 / - 9.2								
2.0H	+ 4.8 / - 3.6					+ 3.8 / - 4.8								

CIE Pub.117 Corrected 904.3 lm Total Lamp Luminous Flux. (8log(F/F0) = -0.3)

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

UTILIZATION FACTORS TABLE

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	PROTECTION ANGLE:

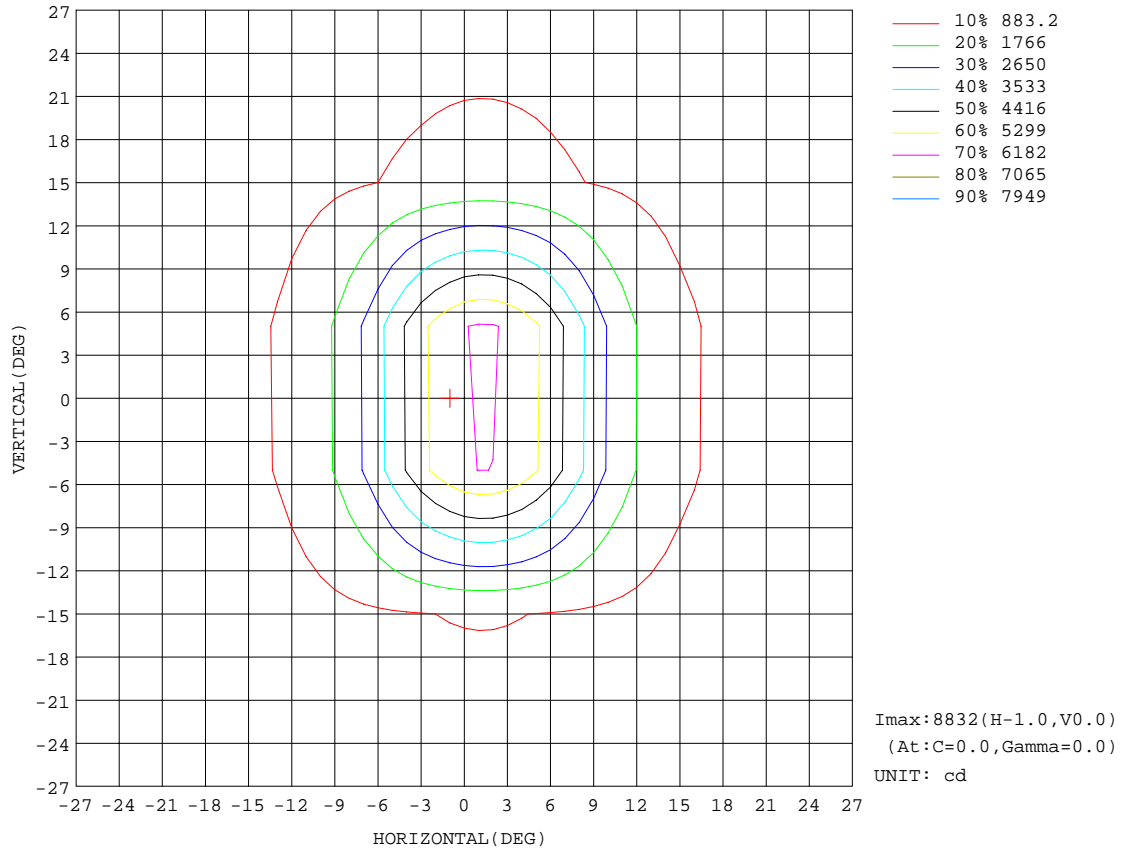
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	137	127	121	136	127	121	135	126	121	116
0.80	148	139	134	147	139	134	145	138	133	127
1.00	155	147	141	154	146	141	151	146	140	134
1.25	161	153	148	160	152	147	157	151	146	140
1.50	165	158	153	163	157	152	160	155	151	144
2.00	169	163	158	167	161	157	163	158	155	147
2.50	172	166	162	169	164	160	164	160	157	148
3.00	174	169	165	171	167	163	166	163	160	150
4.00	177	173	170	174	170	167	168	166	163	152
5.00	179	176	173	176	173	170	170	167	166	154
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-11-08

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	PROTECTION ANGLE:

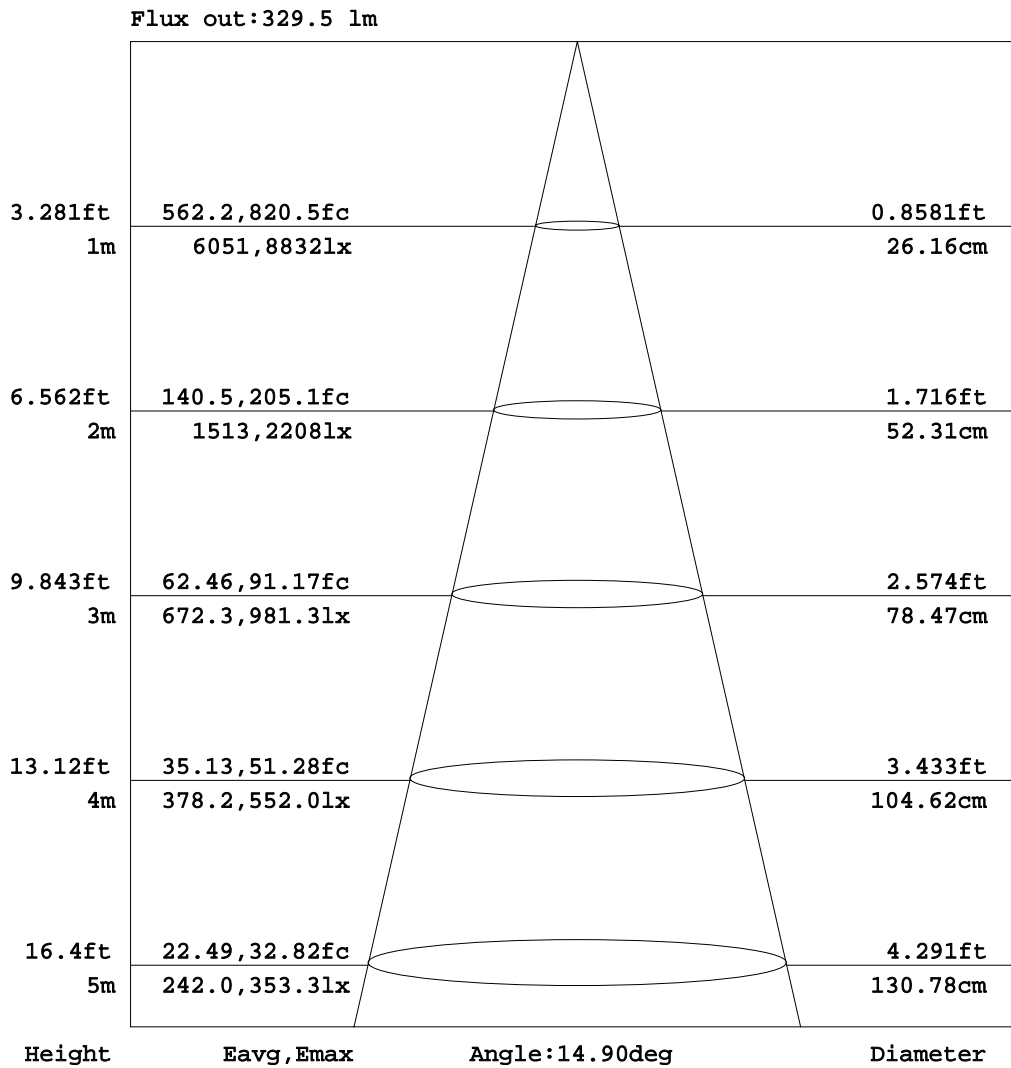


C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-08

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

AAI Figure

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	PROTECTION ANGLE:



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

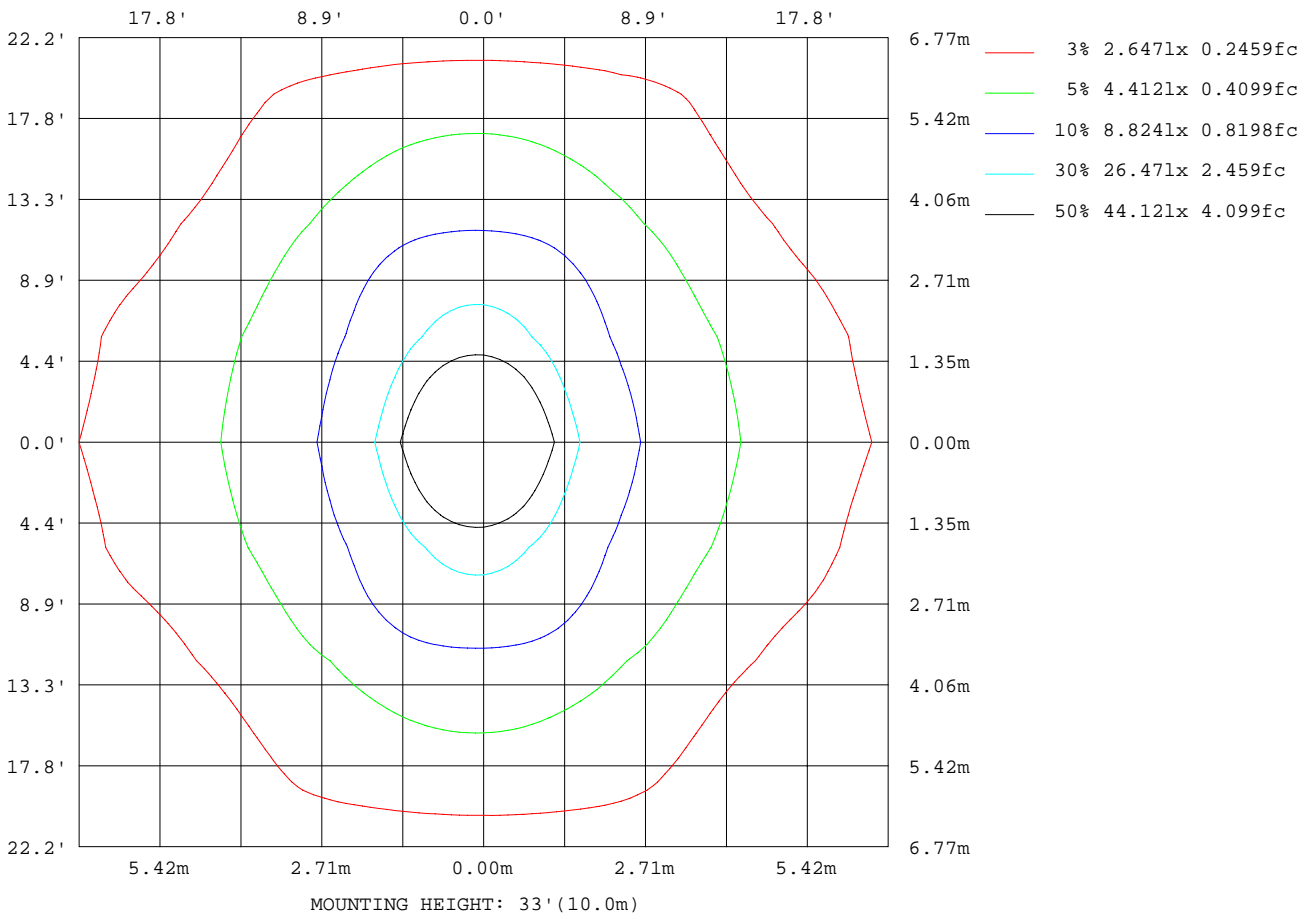
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:



ISOLUX DIAGRAM

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-11-08

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

**Average Luminance Table(CIBSE)**

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	PROTECTION ANGLE:

Parameter description for average Luminance	Symbol	Value	Unit
Luminance in Azimuth Plane	Bc	refer Table 2	cd/sq.m.
Intensity at angle Gamma in given azimuth plane	I	from data	cd/klm
Number of lamps	N	1	
Output of each lamp(initial lumens as specified)	F	904.29	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.0021	sq.m.
Angle to the downward vertical from light centre	Gamma	from data	deg

Table 1. Calculation parameters for determination of CIBSE LG3:1996 Average Luminance

G deg	C plane(deg)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
55	5076	5147	6457	7137	8926	5659	11989	16593	16476	15687	16427	17318	13110	5795	8888	6751	6407	5228	4866
60	3676	3684	3631	3837	3982	5040	7340	7847	5768	4866	5806	8012	7791	4955	4037	3963	3772	3955	3785
65	3341	3297	3290	3567	4510	5133	4921	4921	4912	4921	4876	4780	4732	4823	4383	3675	3419	3471	3492
70	3023	3024	3055	4695	5545	5329	4953	5067	5095	5048	4924	4736	4493	4753	5129	4491	3225	3076	3243
75	2662	2530	3827	6405	6131	5614	5048	5355	5454	5306	5050	4699	4163	4616	5260	5789	3795	2625	2815
80	291	434	6564	8197	7433	4130	2012	955	243	0	224	822	1562	3104	5655	6716	5782	794	257
85	0	10870	14411	0	0	0	0	0	0	0	0	0	0	0	0	0	10699	11252	128

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

CIBSE Category	Gamma (deg)	Average Luminance		Patch Luminance	
		maximum	specified	maximum	specified
		calculated	maximum	measured	maximum
Category 1	55 to 90	17318	200	---	500
Category 2	65 to 90	14411	200	---	500
Category 3	75 to 90	14411	200	---	500

Table 3. Tabulation of Average and Patch Luminance(cd/sq.m.) for defined CIBSE categories

No match

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

**Average Luminance Table(CIBSE)**

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	PROTECTION ANGLE:

Parameter description for average Luminance	Symbol	Value	Unit
Luminance in Azimuth Plane	Bc	refer Table 2	cd/sq.m.
Intensity at angle Gamma in given azimuth plane	I	from data	cd/klm
Number of lamps	N	1	
Output of each lamp(initial lumens as specified)	F	904.29	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.0021	sq.m.
Angle to the downward vertical from light centre	Gamma	from data	deg

Table 1. Calculation parameters for determination of CIBSE LG3:2001 Average Luminance

G deg	C plane(deg)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
55	5076	5147	6457	7137	8926	5659	11989	16593	16476	15687	16427	17318	13110	5795	8888	6751	6407	5228	4866
60	3676	3684	3631	3837	3982	5040	7340	7847	5768	4866	5806	8012	7791	4955	4037	3963	3772	3955	3785
65	3341	3297	3290	3567	4510	5133	4921	4921	4912	4921	4876	4780	4732	4823	4383	3675	3419	3471	3492
70	3023	3024	3055	4695	5545	5329	4953	5067	5095	5048	4924	4736	4493	4753	5129	4491	3225	3076	3243
75	2662	2530	3827	6405	6131	5614	5048	5355	5454	5306	5050	4699	4163	4616	5260	5789	3795	2625	2815
80	291	434	6564	8197	7433	4130	2012	955	243	0	224	822	1562	3104	5655	6716	5782	794	257
85	0	10870	14411	0	0	0	0	0	0	0	0	0	0	0	0	0	10699	11252	128

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

range (deg)	Maximum measured	Average Luminance(cd/sq.m)			
		Maximum limit for screen type & software category used			
		Type I,II screen Some neg.s'ware	Type I,II screen Only pos.s'ware	Type III screen Some neg.s'ware	Type III screen Only pos.s'ware
55 to 90	17318	1000	1500	200	500
65 to 90	14411	1000	1500	200	500

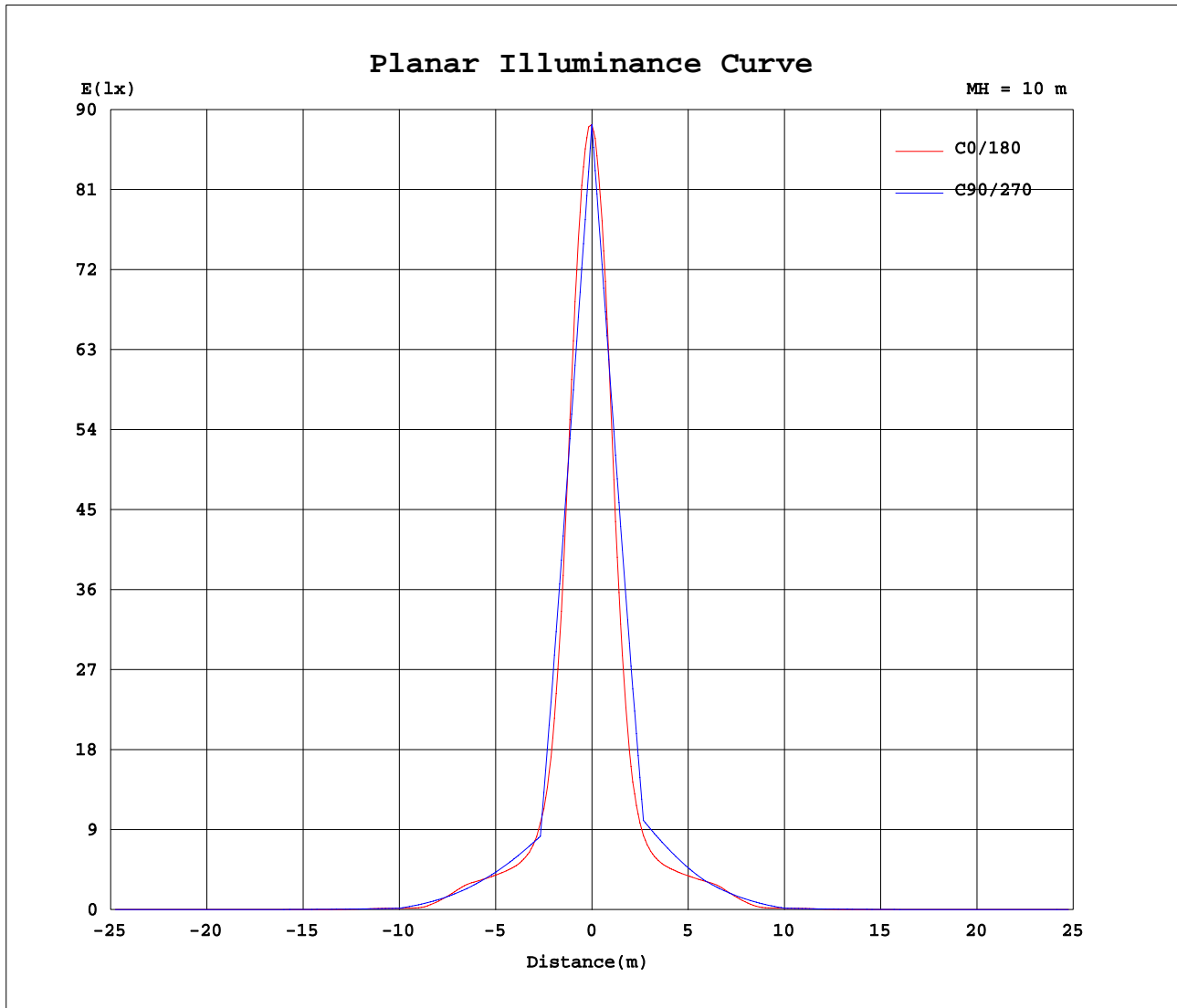
Table 3. Tabulation of average luminance(cd/sq.m.) and luminance limits

No match

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-11-08

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C( DEG) γ (DEG)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832
5	6917	6753	6614	6499	6407	6338	6289	6260	6236	6222	6226	6228	6218	6226	6220	6219	6219	6196	6193
10	2838	2737	2678	2653	2656	2679	2753	2842	2953	3072	3191	3304	3410	3469	3517	3547	3562	3567	3555
15	1085	1051	1032	1022	1019	1042	1068	1116	1168	1221	1265	1293	1297	1263	1192	1098	1006	940	916
20	660	649	644	642	643	646	653	659	663	651	644	659	677	698	719	742	761	772	775
25	560	553	549	546	546	546	547	549	540	541	547	559	573	588	600	613	625	632	634
30	512	502	497	497	498	498	478	446	432	434	449	469	488	503	507	504	500	495	493
35	401	367	348	344	356	367	344	307	283	287	317	360	383	388	382	366	354	347	344
40	125	111	103	98.6	114	148	159	145	110	116	166	209	235	241	235	220	207	198	195
45	44.9	45.3	45.7	44.7	40.6	43.8	56.3	47.1	39.4	41.0	67.6	94.3	108	105	91.3	74.5	59.2	49.7	46.5
50	32.4	28.2	27.6	28.8	26.6	22.8	27.6	31.2	25.8	19.7	19.5	22.2	24.1	29.6	32.8	34.4	33.6	32.9	32.7
55	6.11	6.04	6.20	6.65	7.78	6.12	8.60	12.4	10.8	5.59	6.82	9.83	14.4	18.0	20.0	20.6	19.8	19.1	18.9
60	3.86	3.82	3.87	3.84	3.81	3.89	4.03	3.81	4.18	4.70	5.29	6.22	7.71	8.57	8.24	7.19	6.06	5.36	5.11
65	2.97	2.93	2.93	2.93	2.92	2.94	3.17	3.62	4.00	4.31	4.56	4.52	4.37	4.32	4.37	4.36	4.36	4.38	4.37
70	2.17	2.18	2.17	2.17	2.19	2.72	3.37	3.79	3.98	3.88	3.83	3.70	3.56	3.54	3.64	3.67	3.66	3.66	3.63
75	1.45	1.43	1.38	1.37	2.08	2.85	3.48	3.48	3.33	3.18	3.05	2.90	2.74	2.76	2.91	2.97	2.96	2.93	2.88
80	0.11	0.11	0.16	1.83	2.39	2.80	2.99	2.90	2.71	2.09	1.51	1.07	0.73	0.51	0.35	0.20	0.09	0.02	0.00
85	0.00	0.05	1.99	2.94	2.64	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	PROTECTION ANGLE:

Table--2

UNIT: cd

C( DEG) γ (DEG)	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185
0	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832
5	6158	6143	6101	6057	6022	5976	5948	5913	5881	5867	5858	5848	5860	5895	5955	6041	6155	6299	6159
10	3527	3477	3419	3350	3261	3144	3002	2852	2696	2578	2469	2382	2308	2273	2256	2264	2303	2380	2307
15	936	994	1072	1146	1191	1200	1183	1143	1090	1036	989	949	925	903	897	895	904	925	907
20	768	754	734	710	686	664	644	628	630	634	630	624	619	615	613	614	618	625	620
25	630	621	608	593	579	564	550	539	533	534	545	542	540	538	538	539	543	548	545
30	494	498	502	503	499	485	465	445	432	430	444	478	499	497	496	493	496	503	499
35	346	353	365	380	389	382	357	315	281	278	306	349	381	373	352	345	354	382	360
40	198	206	219	235	242	235	208	159	106	107	149	167	150	121	100	98.0	99.8	108	101
45	49.3	59.1	74.3	92.5	106	109	92.8	63.4	39.0	38.4	46.5	57.1	44.2	40.6	45.1	46.5	46.5	46.5	47.7
50	32.7	33.5	34.6	34.3	31.7	26.3	23.7	19.4	19.4	25.5	30.5	26.7	22.2	26.5	29.0	26.9	26.5	29.7	27.5
55	19.0	19.8	20.8	20.9	19.4	15.8	10.8	6.98	5.71	10.7	12.0	8.13	6.07	7.72	6.77	6.30	5.90	5.86	5.83
60	5.35	6.10	7.23	8.41	8.98	8.18	6.36	5.20	4.67	4.24	3.95	4.16	4.03	3.96	4.05	4.15	4.04	3.97	4.00
65	4.35	4.33	4.28	4.24	4.20	4.20	4.26	4.28	4.11	3.89	3.62	3.26	3.06	3.03	3.03	3.08	3.10	3.10	3.15
70	3.59	3.54	3.47	3.40	3.30	3.23	3.30	3.41	3.54	3.68	3.55	3.23	2.75	2.32	2.24	2.21	2.26	2.33	2.39
75	2.82	2.74	2.66	2.55	2.38	2.26	2.37	2.51	2.68	2.86	3.04	3.15	2.89	2.06	1.60	1.43	1.46	1.53	1.55
80	0.02	0.08	0.18	0.30	0.43	0.57	0.81	1.13	1.57	2.06	2.28	2.45	2.44	2.11	1.73	0.29	0.10	0.09	0.10
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	1.96	2.21	2.06	0.21	0.02	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	PROTECTION ANGLE:

Table--3

UNIT: cd

C( DEG) γ (DEG)	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280
0	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832
5	6049	5967	5912	5881	5873	5887	5900	5919	5955	5994	6027	6076	6116	6162	6206	6223	6259	6261	6284
10	2271	2268	2289	2329	2409	2502	2619	2745	2910	3071	3224	3351	3451	3532	3599	3655	3686	3697	3687
15	901	906	916	942	972	1017	1071	1133	1196	1249	1284	1296	1275	1222	1166	1125	1113	1133	1186
20	619	621	626	633	642	652	662	666	674	696	724	758	799	840	875	903	917	910	888
25	544	545	549	553	559	565	561	565	574	589	605	624	647	672	694	712	720	716	701
30	499	502	506	511	496	470	463	471	487	506	525	534	537	537	533	527	524	527	532
35	355	365	387	397	368	330	316	332	370	414	427	424	405	388	376	368	365	368	375
40	102	114	141	171	179	159	134	153	211	255	273	270	253	232	219	210	207	209	218
45	48.6	48.0	45.3	50.5	67.0	50.7	44.3	57.7	94.7	125	136	124	102	78.0	61.1	51.1	47.7	50.6	61.1
50	29.3	32.5	30.3	27.8	35.3	36.5	27.9	24.4	32.7	40.1	40.1	42.1	39.7	36.1	34.2	33.5	33.3	33.1	34.2
55	6.19	7.00	8.36	6.70	11.0	15.5	12.5	7.19	11.9	19.2	24.4	26.1	24.3	21.5	19.7	19.1	18.8	18.9	19.8
60	4.10	4.12	4.14	4.25	4.50	4.33	4.35	4.76	6.10	9.07	11.1	10.6	8.67	6.64	5.29	4.56	4.34	4.62	5.38
65	3.20	3.25	3.25	3.29	3.32	3.33	3.35	3.42	3.50	3.32	3.31	3.30	3.33	3.36	3.40	3.44	3.47	3.48	3.48
70	2.40	2.43	2.49	2.48	2.51	2.53	2.50	2.39	2.43	2.46	2.48	2.48	2.50	2.53	2.55	2.57	2.60	2.60	2.60
75	1.54	1.62	1.49	1.63	1.65	1.50	1.34	1.23	1.49	1.61	1.65	1.66	1.68	1.70	1.71	1.71	1.73	1.72	1.73
80	0.10	0.33	0.16	0.62	0.54	0.35	0.19	0.19	0.45	0.49	0.40	0.29	0.19	0.11	0.05	0.01	0.00	0.01	0.05
85	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Juvenis AC-20W-3000K-15D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VIC BLACK	SUR.:	PROTECTION ANGLE:

Table--4

UNIT: cd

C( DEG) γ (DEG)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832	8832				
5	6282	6279	6283	6271	6278	6271	6262	6272	6291	6315	6359	6425	6512	6623	6757				
10	3665	3625	3566	3495	3377	3253	3124	2995	2876	2780	2700	2672	2665	2685	2740				
15	1258	1329	1375	1386	1362	1317	1261	1199	1140	1087	1056	1029	1029	1036	1053				
20	854	812	771	736	705	682	679	683	675	666	657	652	648	649	652				
25	678	653	630	608	593	578	568	564	567	563	559	556	554	554	556				
30	537	538	533	528	514	494	478	470	476	499	515	512	509	506	507				
35	387	404	425	437	425	384	346	325	336	370	401	395	372	366	375				
40	232	252	274	280	267	227	162	139	161	180	167	132	111	108	113				
45	78.5	103	128	142	135	101	61.5	43.8	47.1	62.4	51.0	45.6	45.5	46.5	45.9				
50	36.5	40.4	44.0	43.8	44.4	37.0	25.6	26.5	35.8	38.3	31.0	31.6	33.4	31.2	29.8				
55	21.8	25.0	27.5	26.8	22.2	14.4	8.22	12.5	17.0	13.5	7.84	8.98	7.43	6.39	6.08				
60	6.77	8.96	11.3	12.1	10.3	6.85	4.85	4.28	4.24	4.53	4.13	3.99	3.96	3.94	3.85				
65	3.47	3.44	3.39	3.36	3.31	3.51	3.33	3.20	3.12	3.08	3.06	3.02	3.03	2.98	2.95				
70	2.60	2.57	2.54	2.51	2.45	2.37	2.29	2.31	2.32	2.30	2.26	2.25	2.22	2.20	2.17				
75	1.73	1.72	1.70	1.66	1.61	1.50	1.23	1.26	1.38	1.52	1.52	1.42	1.49	1.44	1.43				
80	0.11	0.20	0.30	0.40	0.50	0.52	0.23	0.23	0.35	0.51	0.62	0.23	0.33	0.13	0.11				
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.01	0.01				
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-08

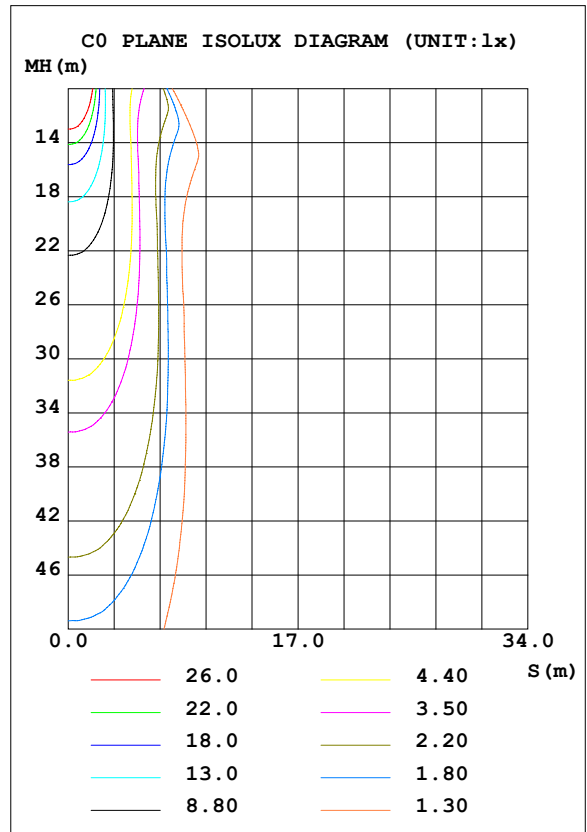
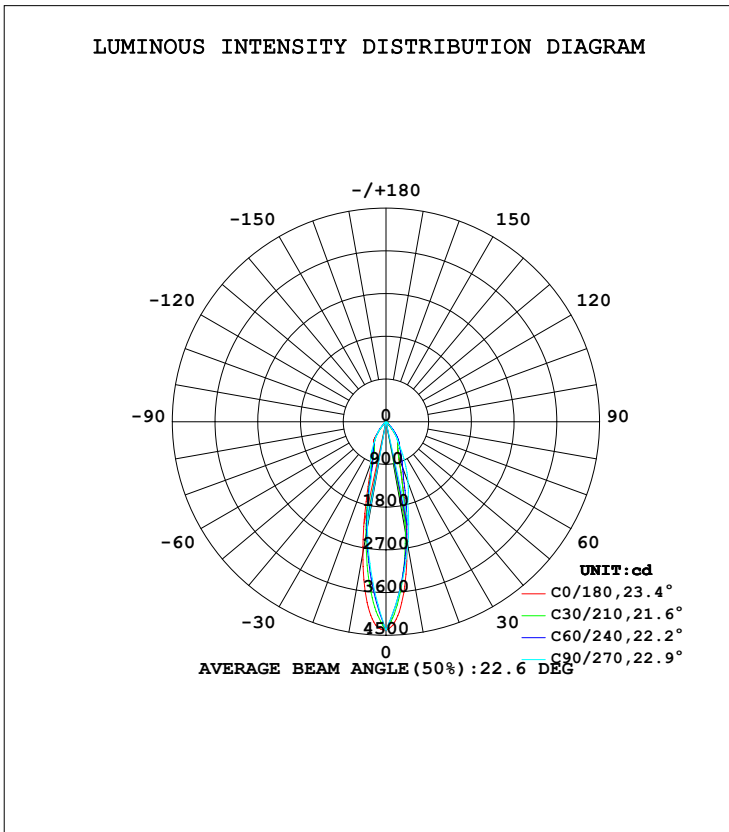
γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:



**LUMINAIRE PHOTOMETRIC TEST REPORT**

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	Juvenis AC-20W-24D-3000K-90	Imax (cd)	4391	S/MH (C0/180)	0.42
NOMINAL POWER (W)	20	LOR (%)	100.0	S/MH (C90/270)	0.35
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	1312.4	η UP, DN (C0-180)	0.0, 46.8
NOMINAL FLUX (lm)	1312.35	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 53.2
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE (V)	229.9	η down (%)	100.0	CIBSE SHR MAX	1.00



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	lum, lamp
5	4015	3496	3326	3389	3826	3509	3520	3625	0- 5	92.53	92.53	7.05,7.05
10	2814	2373	2260	2238	2537	2414	2648	2575	5- 10	211.3	303.8	23.1,23.1
15	1513	1373	1195	1281	1340	1451	1777	1576	10- 15	222.5	526.3	40.1,40.1
20	838.5	762.8	960.5	739.2	771.8	868.0	1362	915.5	15- 20	182.5	708.8	54,54
25	601.9	574.2	726.3	560.4	577.8	641.2	946.3	659.3	20- 25	160.5	869.3	66.2,66.2
30	519.9	434.3	492.1	421.9	504.2	503.8	531.1	515.5	25- 30	146.9	1016	77.4,77.4
35	407.1	268.4	339.2	261.0	372.4	359.7	369.2	373.6	30- 35	129.2	1145	87.3,87.3
40	135.1	99.84	186.3	92.10	109.5	173.2	207.2	196.1	35- 40	88.42	1234	94,94
45	37.62	41.72	33.46	40.84	35.52	66.82	45.24	81.14	40- 45	40.37	1274	97.1,97.1
50	28.50	24.82	24.12	24.23	26.34	31.29	33.50	34.28	45- 50	16.03	1290	98.3,98.3
55	17.58	14.90	14.78	14.13	15.94	18.88	21.76	20.12	50- 55	9.707	1300	99.1,99.1
60	7.555	9.032	5.433	8.584	6.736	11.46	10.02	12.07	55- 60	5.845	1306	99.5,99.5
65	3.497	4.621	4.276	4.683	3.425	5.703	7.379	5.812	60- 65	2.892	1309	99.7,99.7
70	2.590	2.362	3.119	2.735	2.554	2.719	4.735	2.632	65- 70	1.787	1310	99.9,99.9
75	1.819	1.393	1.962	1.802	1.728	1.474	2.092	1.555	70- 75	1.231	1312	99.9,99.9
80	0.1964	0.4443	0	0.8090	0.1562	0.3034	0	0.4405	75- 80	0.5889	1312	100,100
85	0.0019	0	0	0	0.0214	0	0	0	80- 85	0.0853	1312	100,100
90	0	0	0	0	0.0069	0	0	0	85- 90	0.0123	1312	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			

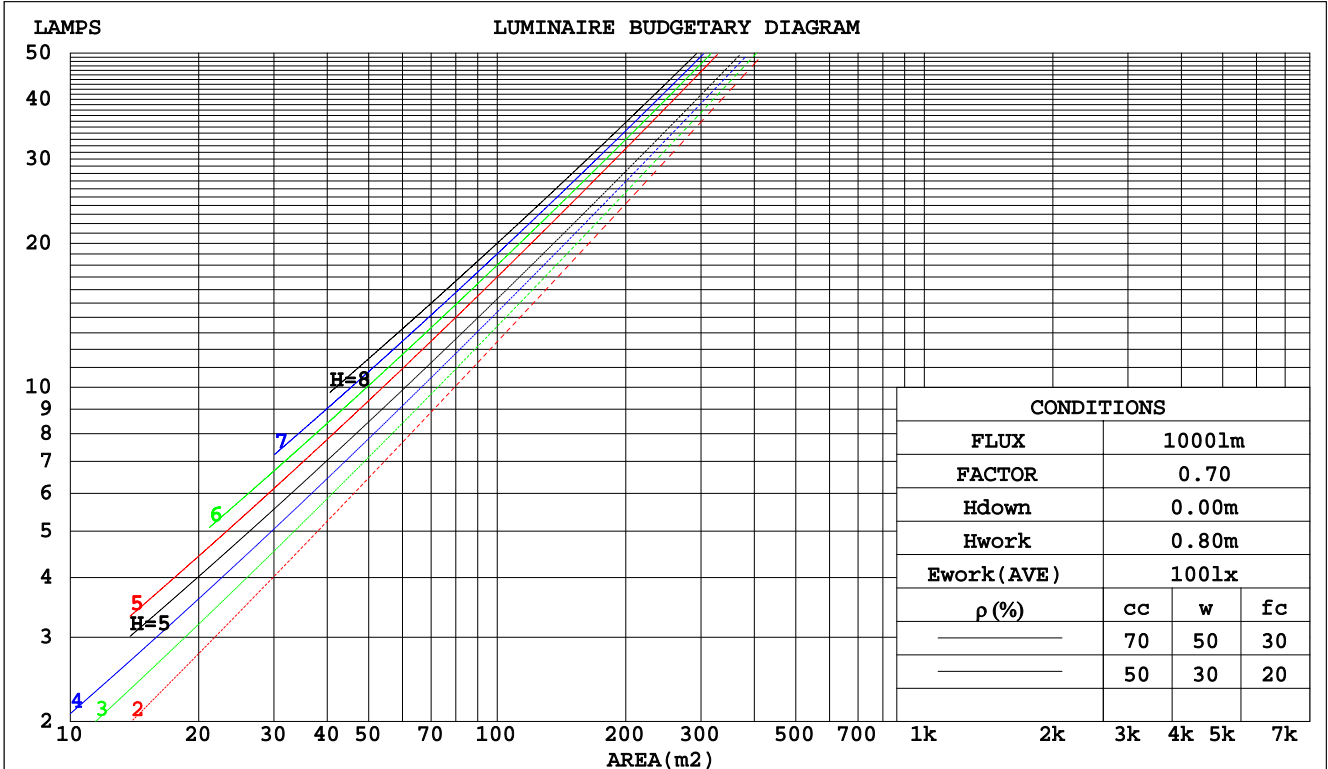
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	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	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.12	1.09	1.07	1.09	1.07	1.06	1.05	1.04	1.02	1.02	1.00	.99	.98	.97	.96	.95
2.0	1.05	1.01	.98	1.03	.90	.97	.90	.97	.95	.97	.95	.93	.94	.92	.91	.89
3.0	.99	.94	.91	.97	.93	.90	.95	.91	.89	.92	.90	.87	.90	.88	.86	.84
4.0	.93	.88	.85	.92	.88	.84	.90	.86	.83	.88	.85	.82	.86	.84	.81	.80
5.0	.88	.83	.79	.87	.83	.79	.86	.82	.78	.84	.80	.78	.83	.79	.77	.76
6.0	.84	.79	.75	.83	.78	.75	.82	.77	.74	.80	.77	.74	.79	.76	.73	.72
7.0	.80	.75	.71	.79	.74	.71	.78	.74	.70	.77	.73	.70	.76	.72	.70	.68
8.0	.76	.71	.67	.76	.71	.67	.75	.70	.67	.74	.70	.67	.73	.69	.66	.65
9.0	.73	.68	.64	.72	.68	.64	.72	.67	.64	.71	.67	.64	.70	.66	.64	.62
10.0	.70	.65	.61	.70	.65	.61	.69	.64	.61	.68	.64	.61	.67	.64	.61	.60



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

WEC AND CCEC

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	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 Coefficients(WEC)									
0.0																
1.0	.162	.092	.029	.156	.089	.028	.143	.082	.026	.132	.076	.024	.121	.070	.023	
2.0	.154	.085	.026	.149	.082	.025	.138	.077	.024	.129	.072	.023	.120	.068	.021	
3.0	.146	.078	.023	.142	.076	.023	.133	.072	.022	.125	.068	.021	.117	.065	.020	
4.0	.139	.072	.021	.135	.070	.021	.127	.067	.020	.120	.064	.019	.113	.062	.019	
5.0	.132	.067	.019	.128	.066	.019	.122	.063	.019	.116	.061	.018	.110	.059	.018	
6.0	.125	.063	.018	.122	.062	.018	.117	.060	.017	.111	.058	.017	.106	.056	.017	
7.0	.119	.059	.017	.117	.058	.017	.112	.056	.016	.107	.055	.016	.103	.053	.016	
8.0	.114	.056	.016	.112	.055	.016	.107	.054	.015	.103	.052	.015	.099	.051	.015	
9.0	.109	.053	.015	.107	.052	.015	.103	.051	.014	.099	.050	.014	.096	.049	.014	
10.0	.105	.050	.014	.103	.050	.014	.099	.049	.014	.096	.048	.014	.093	.047	.013	

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.170	.157	.146	.146	.135	.126	.100	.093	.087	.057	.054	.051	.018	.017	.016	
2.0	.154	.133	.115	.132	.114	.099	.090	.079	.069	.052	.046	.041	.017	.015	.013	
3.0	.141	.113	.092	.121	.098	.080	.083	.068	.056	.048	.040	.033	.015	.013	.011	
4.0	.130	.099	.075	.111	.085	.065	.076	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.120	.087	.062	.103	.075	.054	.071	.052	.038	.041	.031	.023	.013	.010	.007	
6.0	.112	.077	.052	.097	.067	.045	.067	.047	.032	.039	.028	.019	.012	.009	.006	
7.0	.105	.069	.044	.091	.060	.038	.063	.042	.027	.036	.025	.016	.012	.008	.005	
8.0	.099	.063	.038	.086	.055	.033	.059	.038	.023	.034	.023	.014	.011	.007	.005	
9.0	.094	.058	.033	.081	.050	.029	.056	.035	.020	.033	.021	.012	.011	.007	.004	
10.0	.089	.053	.029	.077	.046	.025	.053	.032	.018	.031	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DOBAC  
 Test Date:2017-11-08

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity:65.0%  
 Test Distance:6.960m [K=1.0000]  
 Remarks:

Uncorrected UGR Table

NAME: Juvenis AC-20W-24D-3000K-90					TYPE:					WEIGHT:				
DIM.:					SPEC.:					SERIAL No.:				
MFR.: DOBAC					SUR.:					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	20.7	21.5	20.9	21.7	21.8	21.5	22.3	21.7	22.5	22.6				
3H	20.5	21.3	20.8	21.5	21.7	21.3	22.1	21.6	22.3	22.5				
4H	20.4	21.2	20.7	21.4	21.6	21.2	22.0	21.5	22.2	22.4				
6H	20.4	21.0	20.6	21.3	21.5	21.2	21.8	21.4	22.1	22.3				
8H	20.3	21.0	20.6	21.2	21.5	21.1	21.8	21.4	22.0	22.3				
12H	20.3	20.9	20.6	21.2	21.4	21.1	21.7	21.4	22.0	22.2				
4H 2H	20.4	21.2	20.7	21.4	21.6	21.2	22.0	21.5	22.2	22.4				
3H	20.3	20.9	20.6	21.2	21.5	21.1	21.7	21.4	22.0	22.3				
4H	20.2	20.8	20.6	21.1	21.4	21.0	21.6	21.3	21.9	22.2				
6H	20.1	20.6	20.5	21.0	21.3	20.9	21.4	21.3	21.7	22.1				
8H	20.1	20.5	20.5	20.9	21.3	20.9	21.3	21.2	21.7	22.0				
12H	20.0	20.4	20.4	20.8	21.2	20.8	21.2	21.2	21.6	22.0				
8H 4H	20.1	20.5	20.5	20.9	21.3	20.9	21.3	21.2	21.7	22.0				
6H	20.0	20.4	20.4	20.7	21.2	20.8	21.1	21.2	21.5	21.9				
8H	19.9	20.3	20.4	20.7	21.1	20.7	21.0	21.1	21.5	21.9				
12H	19.9	20.1	20.3	20.6	21.1	20.6	20.9	21.1	21.4	21.8				
12H 4H	20.0	20.4	20.4	20.8	21.2	20.8	21.2	21.2	21.6	22.0				
6H	19.9	20.3	20.4	20.7	21.1	20.7	21.0	21.1	21.5	21.9				
8H	19.9	20.1	20.3	20.6	21.1	20.6	20.9	21.1	21.4	21.8				
Variations with the observer position at spacings:														
S = 1.0H	+ 4.6 / - 9.1					+ 2.8 / -10.6								
1.5H	+ 7.0 / - 6.8					+ 5.3 / - 7.8								
2.0H	+ 3.2 / - 6.4					+ 2.9 / - 5.7								

CIE Pub.117 Corrected 1312 lm Total Lamp Luminous Flux.(8log(F/F0) = 0.9)

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

**UTILIZATION FACTORS TABLE**

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

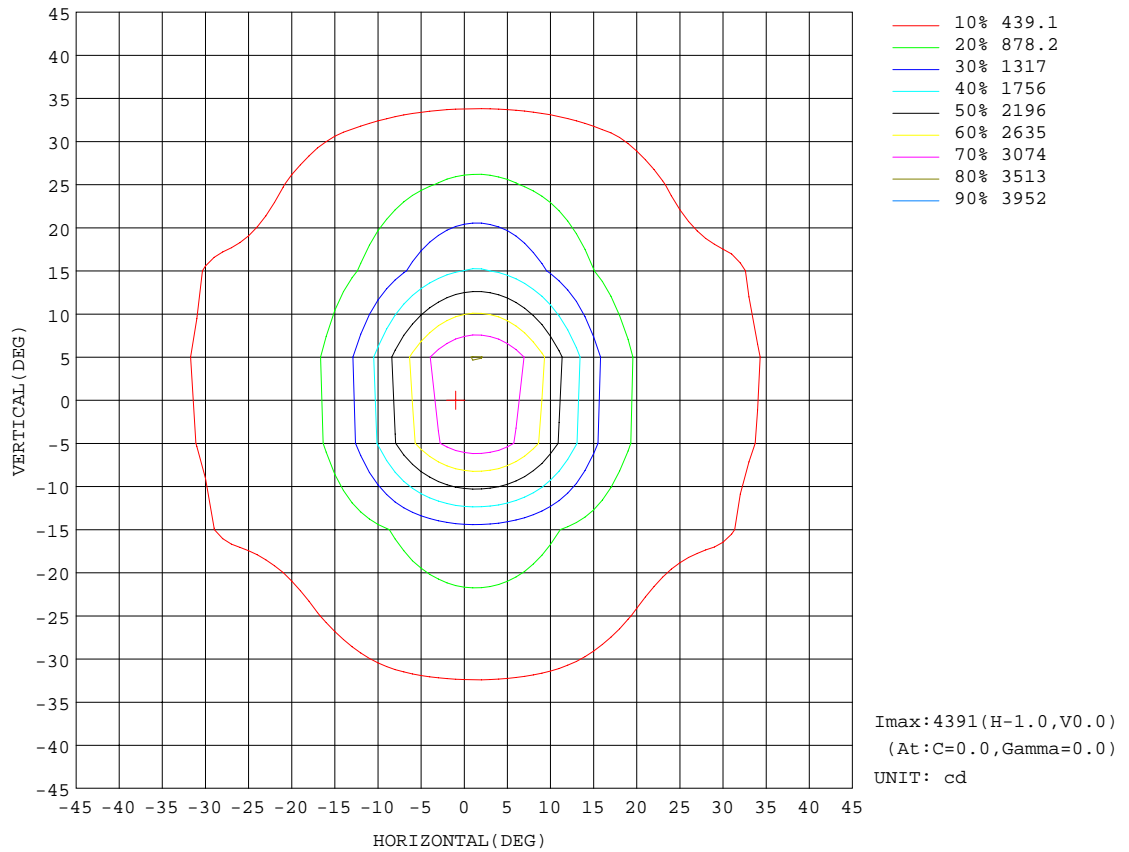
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	88	81	78	87	81	78	86	81	78	74
0.80	95	89	86	95	89	86	93	89	85	82
1.00	100	94	91	99	94	90	97	93	90	86
1.25	104	98	95	103	98	95	101	97	94	90
1.50	106	102	98	105	101	98	103	99	97	92
2.00	109	105	102	107	104	101	105	102	99	94
2.50	110	107	104	109	106	103	106	103	101	95
3.00	112	109	106	110	107	105	107	105	103	96
4.00	114	111	109	112	110	108	108	106	105	98
5.00	115	113	111	113	111	110	109	108	106	99
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-08

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

ISOCANDELA DIAGRAM

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

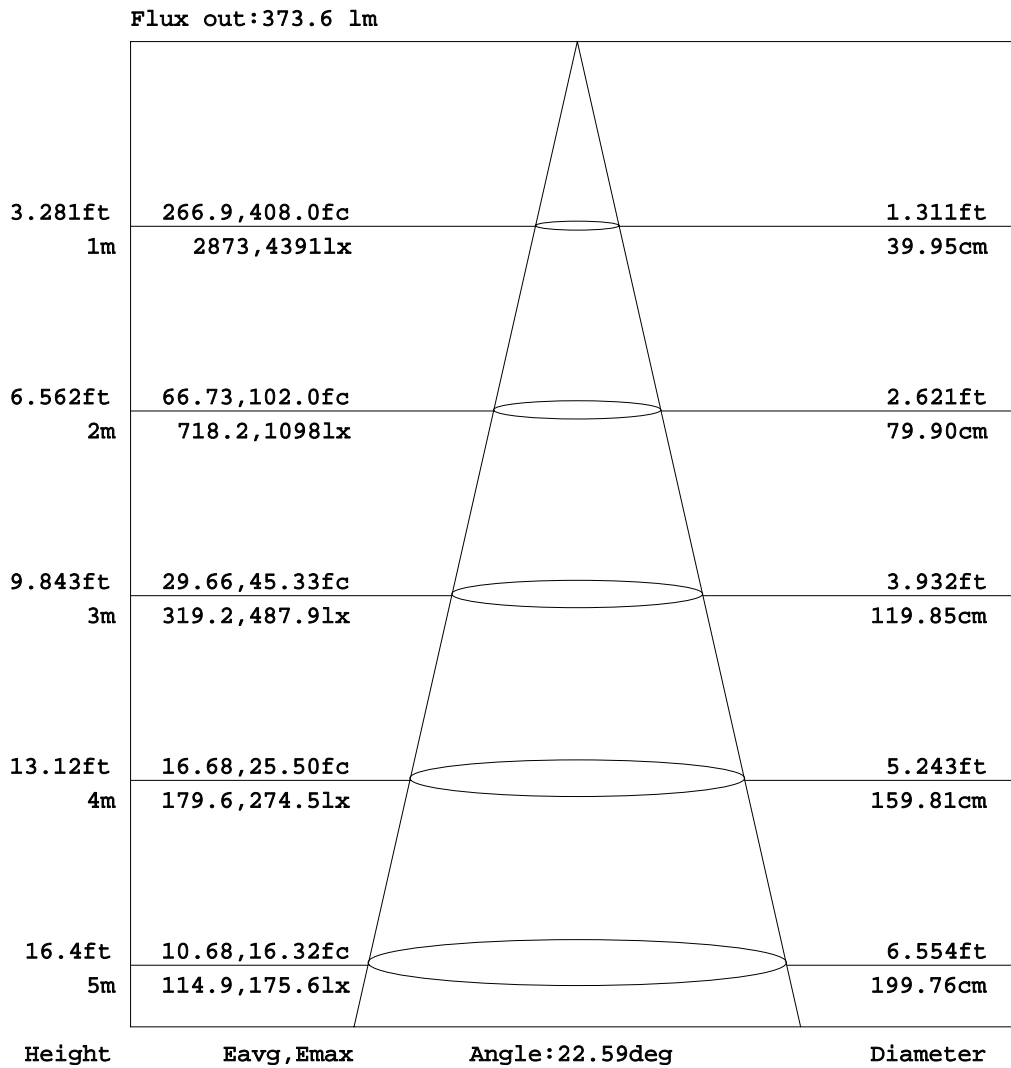


C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-11-08

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

AAI Figure

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:



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

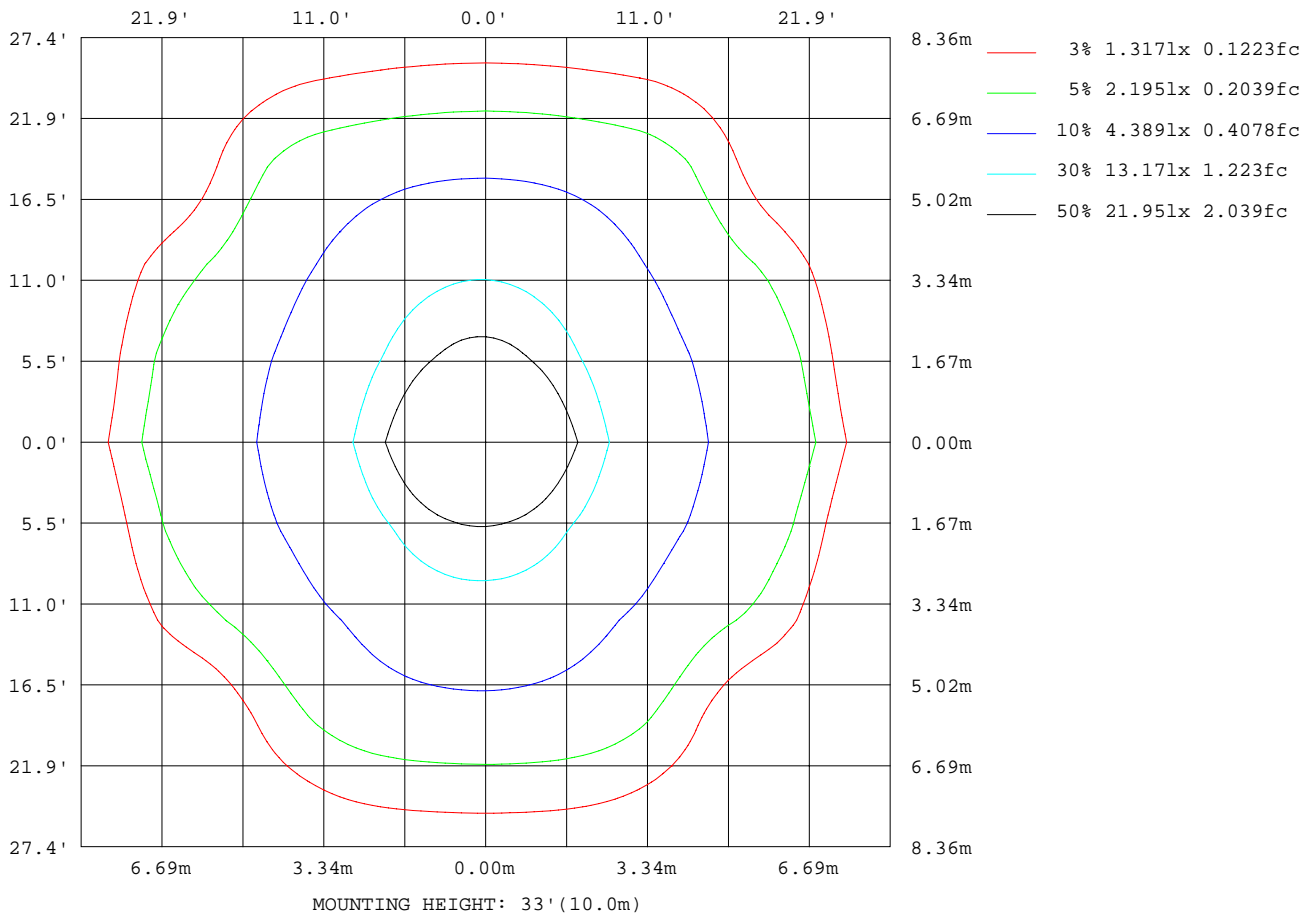
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:



ISOLUX DIAGRAM

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

**Average Luminance Table(CIBSE)**

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Parameter description for average Luminance	Symbol	Value	Unit
Luminance in Azimuth Plane	Bc	refer Table 2	cd/sq.m.
Intensity at angle Gamma in given azimuth plane	I	from data	cd/klm
Number of lamps	N	1	
Output of each lamp(initial lumens as specified)	F	1312.35	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.0021	sq.m.
Angle to the downward vertical from light centre	Gamma	from data	deg

Table 1. Calculation parameters for determination of CIBSE LG3:1996 Average Luminance

G deg	C plane(deg)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
55	14592	13768	13200	13205	12349	13209	13409	12729	12402	12267	12548	12943	13575	12775	11505	12249	11992	12777	13234
60	7195	6829	6696	7160	7472	8978	8057	6479	5507	5174	5468	6540	8160	8768	6849	6594	5874	6260	6415
65	3941	3859	3927	3762	4949	4581	3619	4051	4578	4818	4573	4117	3825	4822	4890	3706	3756	3758	3860
70	3606	3515	3228	3356	3489	3144	3220	3731	4146	4342	4210	3910	3556	3613	4008	3810	3362	3422	3556
75	3346	2902	2142	2833	2765	2406	2582	3290	3501	3610	3691	3639	3102	3050	3598	4108	2965	2931	3179
80	539	366	772	1967	1427	1068	835	560	154	0	162	630	1095	1664	2900	3943	2810	382	428
85	10	566	1198	0	0	0	0	0	0	0	0	0	0	0	0	0	5057	4758	117

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

CIBSE Category	Gamma (deg)	Average Luminance		Patch Luminance	
		maximum	specified	maximum	specified
		calculated	maximum	measured	maximum
Category 1	55 to 90	14592	200	---	500
Category 2	65 to 90	5057	200	---	500
Category 3	75 to 90	5057	200	---	500

Table 3. Tabulation of Average and Patch Luminance(cd/sq.m.) for defined CIBSE categories

No match

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

**Average Luminance Table(CIBSE)**

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Parameter description for average Luminance	Symbol	Value	Unit
Luminance in Azimuth Plane	Bc	refer Table 2	cd/sq.m.
Intensity at angle Gamma in given azimuth plane	I	from data	cd/klm
Number of lamps	N	1	
Output of each lamp(initial lumens as specified)	F	1312.35	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.0021	sq.m.
Angle to the downward vertical from light centre	Gamma	from data	deg

Table 1. Calculation parameters for determination of CIBSE LG3:2001 Average Luminance

G deg	C plane(deg)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
55	14592	13768	13200	13205	12349	13209	13409	12729	12402	12267	12548	12943	13575	12775	11505	12249	11992	12777	13234
60	7195	6829	6696	7160	7472	8978	8057	6479	5507	5174	5468	6540	8160	8768	6849	6594	5874	6260	6415
65	3941	3859	3927	3762	4949	4581	3619	4051	4578	4818	4573	4117	3825	4822	4890	3706	3756	3758	3860
70	3606	3515	3228	3356	3489	3144	3220	3731	4146	4342	4210	3910	3556	3613	4008	3810	3362	3422	3556
75	3346	2902	2142	2833	2765	2406	2582	3290	3501	3610	3691	3639	3102	3050	3598	4108	2965	2931	3179
80	539	366	772	1967	1427	1068	835	560	154	0	162	630	1095	1664	2900	3943	2810	382	428
85	10	566	1198	0	0	0	0	0	0	0	0	0	0	0	0	0	5057	4758	117

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

range (deg)	Maximum measured	Average Luminance(cd/sq.m)			
		Maximum limit for screen type & software category used			
		Type I,II screen Some neg.s'ware	Type I,II screen Only pos.s'ware	Type III screen Some neg.s'ware	Type III screen Only pos.s'ware
55 to 90	14592	1000	1500	200	500
65 to 90	5057	1000	1500	200	500

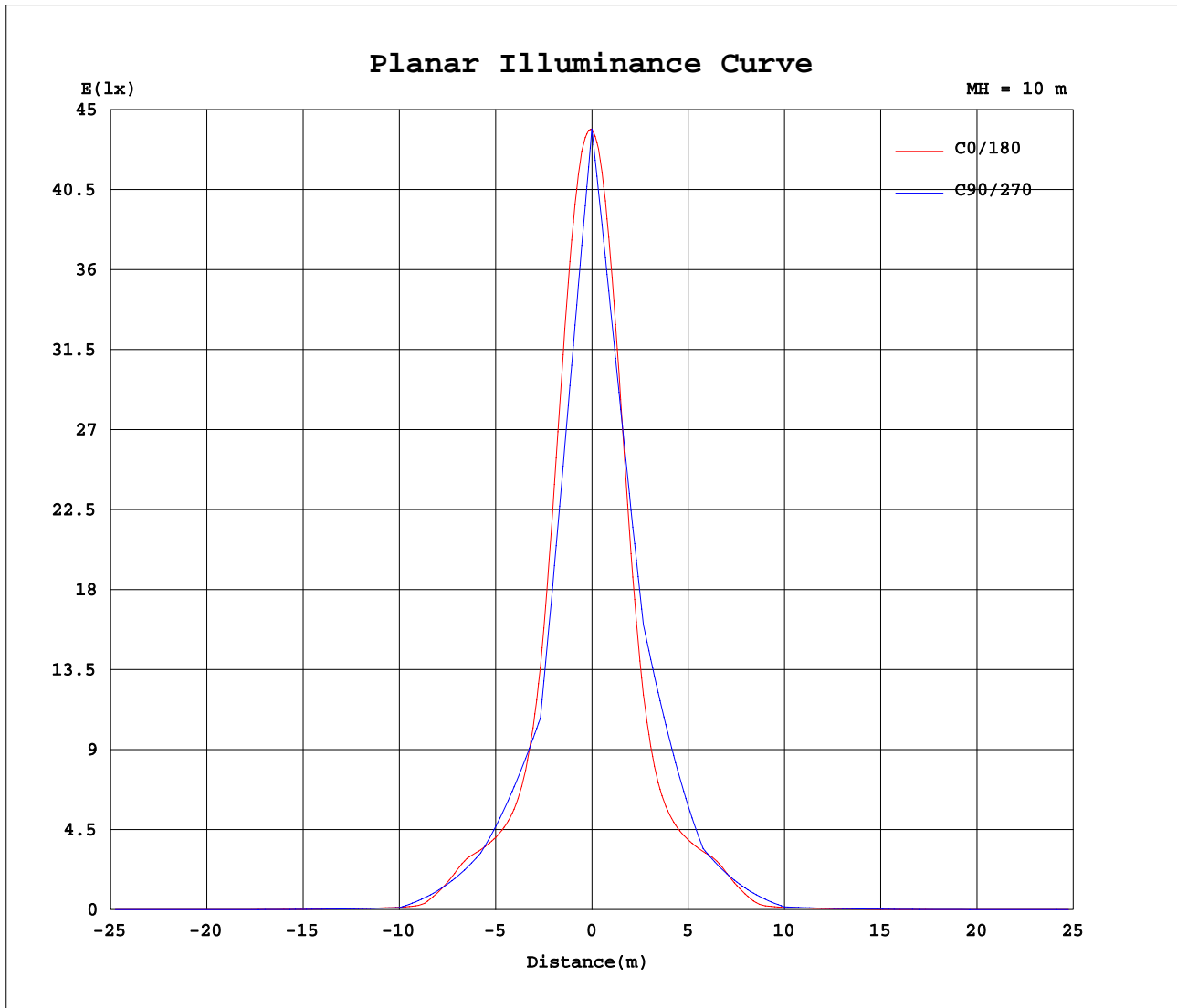
Table 3. Tabulation of average luminance(cd/sq.m.) and luminance limits

No match

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-11-08

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG)\ γ (DEG)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391
5	4015	3933	3857	3787	3724	3667	3617	3574	3533	3496	3466	3439	3409	3387	3366	3349	3338	3328	3326
10	2814	2711	2627	2559	2506	2465	2434	2412	2390	2373	2357	2344	2331	2315	2302	2288	2274	2265	2260
15	1513	1452	1411	1385	1370	1367	1368	1375	1376	1373	1363	1347	1323	1296	1267	1239	1216	1201	1195
20	838	813	799	790	789	792	791	790	783	763	760	789	823	858	891	922	944	957	960
25	602	591	585	581	580	581	580	575	569	574	589	611	637	662	685	704	718	725	726
30	520	509	503	504	507	507	485	448	432	434	450	472	495	513	519	515	505	496	492
35	407	370	349	343	355	364	343	305	273	268	295	336	363	373	370	361	350	342	339
40	135	119	109	101	111	140	153	141	104	99.8	144	190	218	226	222	210	198	189	186
45	37.6	37.1	37.1	36.0	37.2	39.7	46.1	36.2	35.7	41.7	63.2	85.2	98.8	93.8	79.0	61.2	45.8	36.4	33.5
50	28.5	27.2	27.0	26.8	26.1	26.0	26.2	25.3	24.4	24.8	27.2	27.9	24.4	24.3	24.3	24.4	24.1	24.0	24.1
55	17.6	16.5	16.6	16.0	15.9	16.2	15.9	15.3	14.9	14.9	15.9	16.3	16.2	15.9	15.3	15.3	14.9	14.8	14.8
60	7.55	7.01	7.17	7.11	7.03	7.89	7.52	6.35	7.85	9.03	9.43	9.17	8.46	7.65	6.80	6.22	5.78	5.52	5.43
65	3.50	3.42	3.43	3.42	3.49	3.64	3.34	3.73	4.39	4.62	4.07	3.17	3.21	3.38	3.60	3.83	4.06	4.22	4.28
70	2.59	2.55	2.52	2.40	2.32	2.30	2.41	2.54	2.51	2.36	2.26	2.20	2.31	2.51	2.68	2.84	2.98	3.07	3.12
75	1.82	1.75	1.58	1.25	1.16	1.34	1.54	1.57	1.50	1.39	1.31	1.25	1.40	1.66	1.79	1.86	1.90	1.93	1.96
80	0.20	0.17	0.13	0.24	0.28	0.56	0.72	0.64	0.52	0.44	0.39	0.32	0.30	0.28	0.20	0.12	0.06	0.01	0.00
85	0.00	0.03	0.10	0.13	0.22	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Table--2

UNIT: cd

C(DEG)\ γ (DEG)	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185
0	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391
5	3318	3317	3319	3325	3335	3341	3354	3369	3389	3416	3446	3478	3518	3565	3619	3680	3749	3826	3763
10	2253	2251	2247	2244	2243	2242	2240	2238	2238	2240	2245	2252	2267	2293	2330	2381	2450	2537	2465
15	1196	1205	1219	1240	1259	1276	1285	1286	1281	1271	1258	1243	1237	1233	1242	1260	1291	1340	1301
20	953	934	909	878	841	805	771	740	739	751	751	745	740	736	736	742	752	772	758
25	722	711	696	675	650	622	596	575	560	557	565	565	564	563	562	565	569	578	573
30	495	503	511	513	502	481	457	435	422	422	441	477	498	496	490	488	493	504	501
35	341	348	358	365	363	348	320	283	261	265	297	333	354	345	330	330	343	372	356
40	189	197	208	217	218	209	181	138	92.1	99.8	137	149	137	112	96.1	96.7	100.0	110	102
45	36.6	46.3	61.1	77.7	91.4	95.0	82.6	59.0	40.8	35.3	35.8	45.8	39.0	36.0	35.3	35.5	35.2	35.5	35.6
50	24.2	24.5	24.8	24.5	24.8	24.6	27.4	26.4	24.2	23.7	24.1	24.8	24.6	24.6	25.4	25.5	25.4	26.3	26.0
55	14.8	15.1	15.5	15.6	16.0	16.4	16.0	15.4	14.1	13.9	14.2	14.8	14.8	14.4	14.9	15.4	15.1	15.9	15.6
60	5.48	5.74	6.23	6.87	7.76	8.57	9.18	9.21	8.58	7.19	5.72	6.92	7.05	6.17	6.46	6.57	6.37	6.74	6.70
65	4.21	4.06	3.86	3.65	3.50	3.39	3.41	4.28	4.68	4.34	3.72	3.29	3.46	3.33	3.27	3.33	3.36	3.43	3.45
70	3.10	3.02	2.93	2.81	2.69	2.55	2.47	2.60	2.74	2.88	2.89	2.74	2.55	2.41	2.41	2.46	2.53	2.55	2.59
75	1.99	2.01	2.01	1.98	1.89	1.69	1.54	1.66	1.80	1.96	2.11	2.23	2.10	1.61	1.62	1.59	1.68	1.73	1.74
80	0.01	0.06	0.13	0.23	0.33	0.40	0.45	0.61	0.81	1.06	1.26	1.44	1.43	1.02	0.87	0.14	0.14	0.16	0.16
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.93	0.86	0.87	0.00	0.02	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Table--3

UNIT: cd

C( DEG) γ (DEG)	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280
0	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391
5	3707	3659	3618	3585	3559	3541	3523	3509	3502	3499	3497	3502	3501	3501	3505	3509	3520	3521	3529
10	2412	2377	2357	2350	2355	2371	2390	2414	2443	2475	2507	2538	2567	2595	2618	2634	2648	2652	2653
15	1281	1275	1280	1299	1326	1365	1407	1451	1496	1542	1586	1628	1669	1704	1737	1760	1777	1779	1773
20	753	755	763	778	797	821	846	868	906	967	1030	1101	1174	1242	1299	1341	1362	1357	1333
25	572	573	579	586	596	608	619	641	671	705	746	789	832	873	908	934	946	945	931
30	501	504	509	514	503	486	488	504	527	552	569	576	575	566	551	537	531	539	556
35	356	369	395	403	372	339	334	360	401	438	442	423	402	387	376	371	369	372	379
40	105	120	150	175	182	162	145	173	236	273	280	269	246	228	216	209	207	210	218
45	36.3	37.4	40.4	44.6	56.5	40.9	45.4	66.8	104	132	134	116	90.4	69.5	55.9	47.7	45.2	48.3	57.0
50	26.6	27.1	27.1	27.4	28.0	27.9	27.7	31.3	38.6	36.9	29.8	29.7	29.2	29.8	31.6	32.8	33.5	33.3	32.5
55	16.6	16.5	16.8	17.6	17.6	17.7	18.1	18.9	19.7	19.9	19.8	19.9	19.6	19.6	20.6	21.3	21.8	21.7	21.3
60	7.28	7.45	7.74	8.77	8.73	8.34	10.2	11.5	11.7	11.3	10.7	10.3	9.89	9.74	9.83	9.96	10.0	10.1	10.2
65	3.54	3.60	3.81	4.08	3.90	4.65	5.52	5.70	4.90	3.88	4.26	4.89	5.62	6.26	6.81	7.21	7.38	7.32	7.07
70	2.58	2.61	2.66	2.69	2.77	2.90	2.79	2.72	2.78	2.88	3.08	3.43	3.82	4.17	4.44	4.65	4.74	4.71	4.60
75	1.72	1.78	1.66	1.81	1.84	1.69	1.54	1.47	1.83	1.94	2.02	2.09	2.13	2.14	2.12	2.10	2.09	2.11	2.17
80	0.19	0.39	0.26	0.73	0.61	0.42	0.30	0.30	0.66	0.63	0.49	0.35	0.23	0.13	0.06	0.02	0.00	0.02	0.06
85	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-08

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Juvenis AC-20W-24D-3000K-90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Table--4

UNIT: cd

C( DEG) γ (DEG)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391	4391				
5	3536	3546	3560	3573	3592	3608	3625	3649	3676	3705	3741	3783	3832	3887	3948				
10	2652	2646	2636	2624	2606	2589	2575	2564	2559	2556	2563	2582	2615	2663	2729				
15	1761	1740	1712	1681	1650	1614	1576	1538	1502	1466	1442	1425	1424	1435	1463				
20	1289	1227	1161	1090	1021	956	915	893	869	849	833	818	810	811	819				
25	903	866	824	778	732	692	659	634	621	611	603	596	592	592	595				
30	574	587	589	581	566	541	515	498	495	511	522	518	515	514	515				
35	391	407	428	450	450	413	374	350	353	384	413	404	382	376	383				
40	231	249	273	288	283	250	196	165	173	188	180	154	129	120	122				
45	71.4	92.7	119	138	139	117	81.1	50.8	44.6	58.9	48.2	43.0	39.4	38.5	37.8				
50	31.1	30.7	31.2	31.7	39.8	43.8	34.3	30.0	29.8	30.2	29.4	29.1	28.9	28.4	27.9				
55	20.5	20.5	21.0	21.1	21.3	21.0	20.1	19.3	19.0	19.0	19.2	18.2	17.7	17.8	17.0				
60	10.3	10.5	10.9	11.4	12.0	12.4	12.1	10.8	8.78	9.26	9.47	8.47	7.99	7.78	7.27				
65	6.62	5.98	5.20	4.46	3.95	4.95	5.81	5.67	4.71	3.83	4.10	3.89	3.61	3.55	3.47				
70	4.38	4.05	3.61	3.18	2.89	2.73	2.63	2.66	2.82	2.69	2.62	2.63	2.60	2.59	2.58				
75	2.21	2.22	2.16	2.05	1.93	1.81	1.56	1.51	1.65	1.82	1.85	1.75	1.84	1.81	1.79				
80	0.14	0.24	0.36	0.49	0.62	0.69	0.44	0.35	0.46	0.63	0.78	0.37	0.45	0.23	0.20				
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.03	0.01	0.00				
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-08

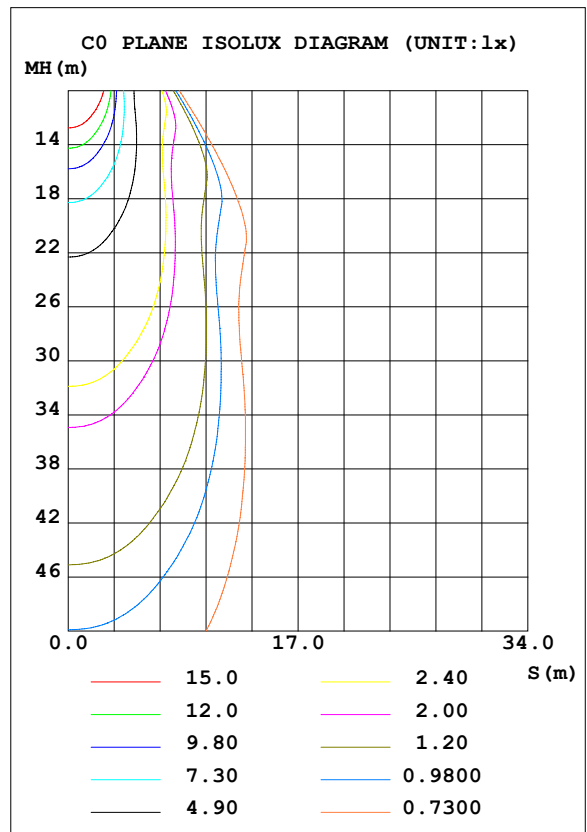
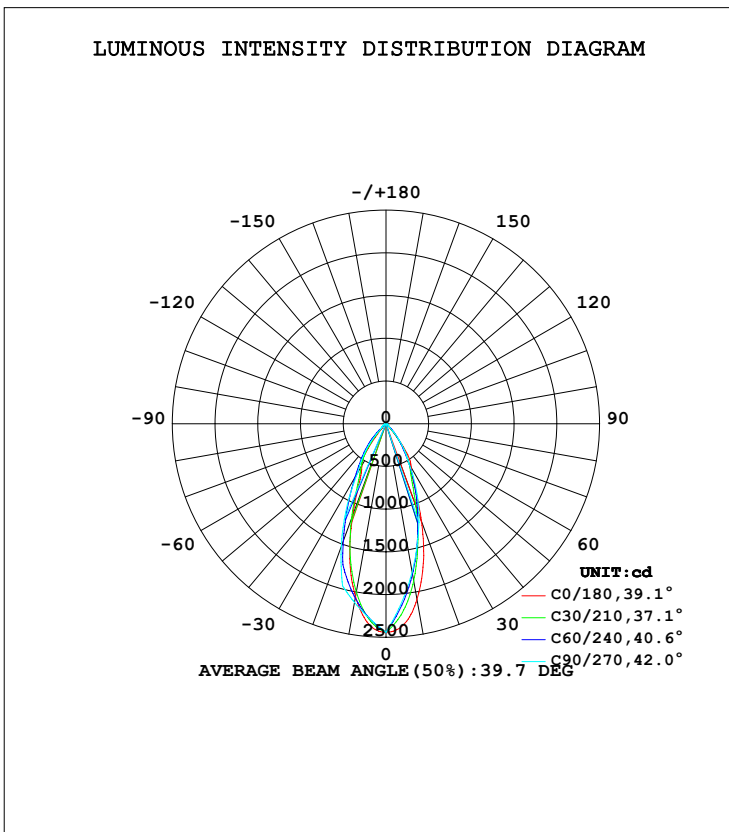
γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:



LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: Juvenis AC-20W-3000K-40D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 74.69 lm/W			
MODEL	Juvenis AC-20W-3000K-40D	I <sub>max</sub> (cd)	2441	S/MH (C0/180)	0.62
NOMINAL POWER (W)	20	LOR (%)	132.7	S/MH (C90/270)	0.74
RATED VOLTAGE (V)	216	TOTAL FLUX (lm)	1434.0	η UP, DN (C0-180)	0.0, 73.5
NOMINAL FLUX (lm)	1080.22	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 59.2
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	216.3	η down (%)	132.7	CIBSE SHR MAX	0.65



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-13

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	lum, lamp
5	2351	2284	2282	2293	2362	2167	2102	2159	0- 5	55.37	55.37	3.86,5.13
10	2056	2032	2123	2062	2089	1817	1763	1788	5- 10	149.4	204.7	14.3,19
15	1637	1711	1965	1770	1691	1416	1425	1370	10- 15	210.0	414.7	28.9,38.4
20	1141	1350	1531	1436	1214	1016	1128	951.3	15- 20	230.3	645.0	45,59.7
25	718.6	945.5	1096	1027	776.2	708.1	830.8	657.7	20- 25	212.1	857.1	59.8,79.3
30	567.4	658.0	662.0	722.5	587.3	479.1	533.9	450.9	25- 30	179.0	1036	72.3,95.9
35	417.0	465.4	469.6	507.0	445.6	275.5	372.0	255.4	30- 35	146.5	1183	82.5,109
40	134.1	276.7	277.1	318.4	165.7	88.75	210.1	78.44	35- 40	101.7	1284	89.6,119
45	51.22	125.4	84.62	155.6	54.47	56.12	48.16	53.29	40- 45	51.12	1335	93.1,124
50	42.81	53.76	67.39	64.83	43.72	41.96	41.28	40.70	45- 50	24.16	1360	94.8,126
55	35.74	38.48	50.15	38.75	36.40	34.14	34.39	33.50	50- 55	18.01	1378	96.1,128
60	29.68	32.35	32.92	32.84	30.33	28.87	27.51	28.26	55- 60	15.60	1393	97.2,129
65	24.71	26.86	28.27	27.33	25.30	23.86	22.28	23.44	60- 65	13.43	1407	98.1,130
70	20.55	21.60	23.62	22.29	21.12	18.36	17.05	17.86	65- 70	11.52	1418	98.9,131
75	14.94	15.75	18.98	17.27	16.84	11.55	11.82	10.68	70- 75	9.311	1427	99.5,132
80	5.081	8.426	0	10.21	7.960	4.414	0	3.508	75- 80	5.480	1433	99.9,133
85	0.6628	0	0	0	1.336	0	0	0	80- 85	1.011	1434	100,133
90	0.0445	0	0	0	0.0174	0	0	0	85- 90	0.0413	1434	100,133
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			

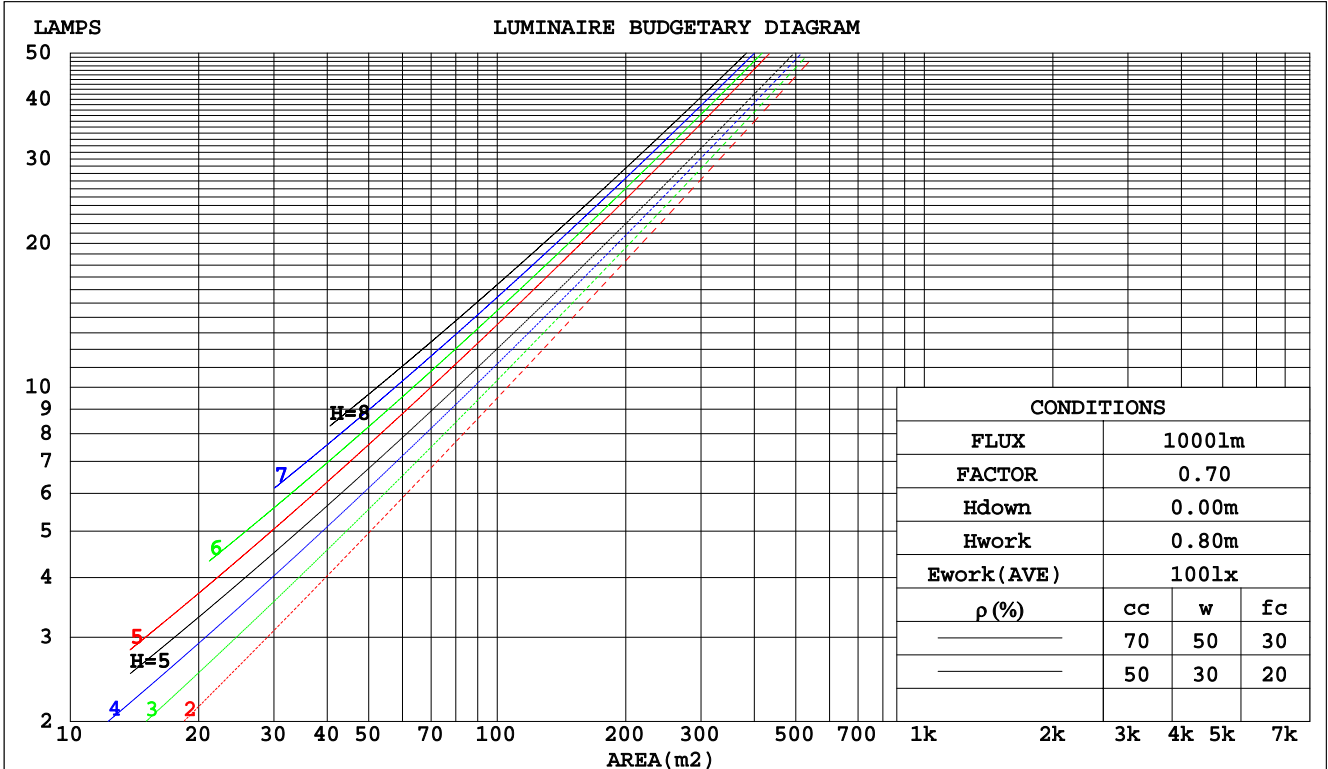
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-13

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

NAME: Juvenis AC-20W-3000K-40D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																
pfc																
RCR	RCR:Room Cavity Ratio															
	Coefficients of Utilization(CU)															
0.0	1.58	1.58	1.58	1.54	1.54	1.54	1.47	1.47	1.47	1.41	1.41	1.41	1.35	1.35	1.35	1.33
1.0	1.47	1.43	1.40	1.44	1.41	1.38	1.38	1.36	1.34	1.34	1.32	1.30	1.29	1.27	1.26	1.24
2.0	1.36	1.31	1.26	1.34	1.29	1.25	1.30	1.26	1.22	1.26	1.22	1.20	1.22	1.19	1.17	1.15
3.0	1.27	1.21	1.15	1.25	1.19	1.14	1.22	1.17	1.12	1.19	1.14	1.11	1.16	1.12	1.09	1.07
4.0	1.19	1.12	1.06	1.18	1.11	1.06	1.15	1.09	1.04	1.12	1.07	1.03	1.10	1.05	1.02	.00
5.0	1.12	1.04	.99	1.11	1.03	.98	1.08	1.02	.97	1.06	1.01	.96	1.04	.99	.95	.94
6.0	1.05	.98	.92	1.04	.97	.92	1.02	.96	.91	1.00	.95	.90	.99	.94	.90	.88
7.0	.00	.92	.86	.99	.91	.86	.97	.90	.86	.95	.89	.85	.94	.89	.85	.83
8.0	.94	.86	.81	.93	.86	.81	.92	.85	.81	.91	.85	.80	.89	.84	.80	.78
9.0	.89	.82	.77	.89	.82	.77	.88	.81	.76	.86	.80	.76	.85	.80	.76	.74
10.0	.85	.78	.73	.85	.77	.73	.83	.77	.72	.82	.76	.72	.81	.76	.72	.70



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-11-13

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

WEC AND CCEC

NAME: Juvenis AC-20W-3000K-40D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	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 Coefficients(WEC)									
0.0																
1.0	.242	.138	.044	.233	.133	.042	.216	.124	.040	.201	.116	.037	.187	.108	.035	
2.0	.231	.127	.039	.223	.123	.038	.209	.116	.036	.196	.110	.034	.184	.104	.033	
3.0	.218	.116	.035	.212	.113	.034	.200	.108	.033	.189	.103	.032	.178	.099	.031	
4.0	.206	.107	.032	.201	.105	.031	.191	.101	.030	.181	.097	.029	.172	.093	.028	
5.0	.196	.100	.029	.191	.098	.029	.182	.095	.028	.173	.091	.027	.165	.088	.027	
6.0	.186	.093	.027	.181	.092	.026	.174	.089	.026	.166	.086	.025	.159	.084	.025	
7.0	.177	.087	.025	.173	.086	.025	.166	.084	.024	.159	.082	.024	.153	.080	.023	
8.0	.168	.082	.023	.165	.081	.023	.159	.079	.023	.153	.077	.022	.147	.076	.022	
9.0	.161	.078	.022	.158	.077	.022	.152	.075	.021	.147	.074	.021	.142	.072	.021	
10.0	.154	.074	.020	.151	.073	.020	.146	.072	.020	.141	.070	.020	.137	.069	.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	.253	.253	.253	.216	.216	.216	.147	.147	.147	.085	.085	.085	.027	.027	.027	
1.0	.228	.209	.192	.195	.179	.165	.133	.123	.114	.077	.071	.066	.025	.023	.021	
2.0	.208	.176	.149	.178	.151	.129	.122	.105	.090	.070	.061	.053	.023	.020	.017	
3.0	.191	.151	.118	.164	.130	.103	.113	.090	.072	.065	.053	.042	.021	.017	.014	
4.0	.178	.131	.096	.152	.113	.083	.105	.079	.059	.061	.046	.035	.020	.015	.011	
5.0	.166	.116	.079	.142	.100	.069	.098	.070	.049	.057	.041	.029	.018	.013	.009	
6.0	.156	.103	.066	.134	.090	.058	.092	.063	.041	.054	.037	.024	.017	.012	.008	
7.0	.147	.093	.056	.126	.081	.049	.087	.057	.035	.051	.033	.021	.016	.011	.007	
8.0	.139	.085	.048	.120	.074	.042	.083	.052	.030	.048	.031	.018	.016	.010	.006	
9.0	.132	.078	.042	.114	.068	.036	.079	.048	.026	.046	.028	.015	.015	.009	.005	
10.0	.126	.072	.037	.108	.063	.032	.075	.044	.023	.044	.026	.014	.014	.009	.004	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DOBAC  
 Test Date:2017-11-13

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity:65.0%  
 Test Distance:6.960m [K=1.0000]  
 Remarks:

Uncorrected UGR Table

NAME: Juvenis AC-20W-3000K-40D					TYPE:					WEIGHT:				
DIM.:					SPEC.:					SERIAL No.:				
MFR.: DOBAC					SUR.:					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	20.5	21.4	20.7	21.6	21.7	22.0	23.0	22.3	23.1	23.3				
3H	20.9	21.8	21.1	22.0	22.2	22.3	23.2	22.6	23.4	23.6				
4H	21.1	22.0	21.4	22.2	22.4	22.6	23.4	22.8	23.6	23.8				
6H	21.2	22.0	21.5	22.2	22.5	22.6	23.3	22.9	23.6	23.8				
8H	21.2	21.9	21.5	22.2	22.4	22.5	23.3	22.8	23.5	23.8				
12H	21.1	21.9	21.5	22.1	22.4	22.5	23.2	22.8	23.5	23.7				
4H 2H	20.5	21.3	20.8	21.6	21.8	22.0	22.8	22.2	23.0	23.2				
3H	21.1	21.9	21.5	22.1	22.4	22.4	23.2	22.8	23.4	23.7				
4H	21.5	22.2	21.9	22.5	22.8	22.8	23.5	23.2	23.8	24.1				
6H	21.7	22.3	22.1	22.6	22.9	22.9	23.4	23.2	23.8	24.1				
8H	21.7	22.2	22.1	22.5	22.9	22.8	23.3	23.2	23.7	24.1				
12H	21.6	22.1	22.0	22.5	22.9	22.7	23.2	23.2	23.6	24.0				
8H 4H	21.7	22.2	22.1	22.5	22.9	22.9	23.4	23.3	23.8	24.1				
6H	21.9	22.3	22.3	22.7	23.1	22.9	23.4	23.4	23.8	24.2				
8H	21.9	22.3	22.3	22.7	23.1	22.9	23.3	23.3	23.7	24.1				
12H	21.8	22.2	22.3	22.6	23.1	22.8	23.2	23.3	23.6	24.1				
12H 4H	21.6	22.1	22.0	22.5	22.9	22.8	23.3	23.2	23.7	24.1				
6H	21.9	22.2	22.3	22.7	23.1	22.9	23.3	23.3	23.7	24.1				
8H	21.9	22.2	22.3	22.6	23.1	22.8	23.2	23.3	23.6	24.1				
Variations with the observer position at spacings:														
S = 1.0H	+ 1.5 / - 1.7					+ 1.7 / - 2.6								
1.5H	+ 3.3 / - 1.6					+ 3.5 / - 2.5								
2.0H	+ 0.2 / - 0.4					+ 0.9 / - 0.7								

CIE Pub.117 Corrected 1080 lm Total Lamp Luminous Flux.(8log(F/F0) = 0.3)

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-13

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

UTILIZATION FACTORS TABLE

NAME: Juvenis AC-20W-3000K-40D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

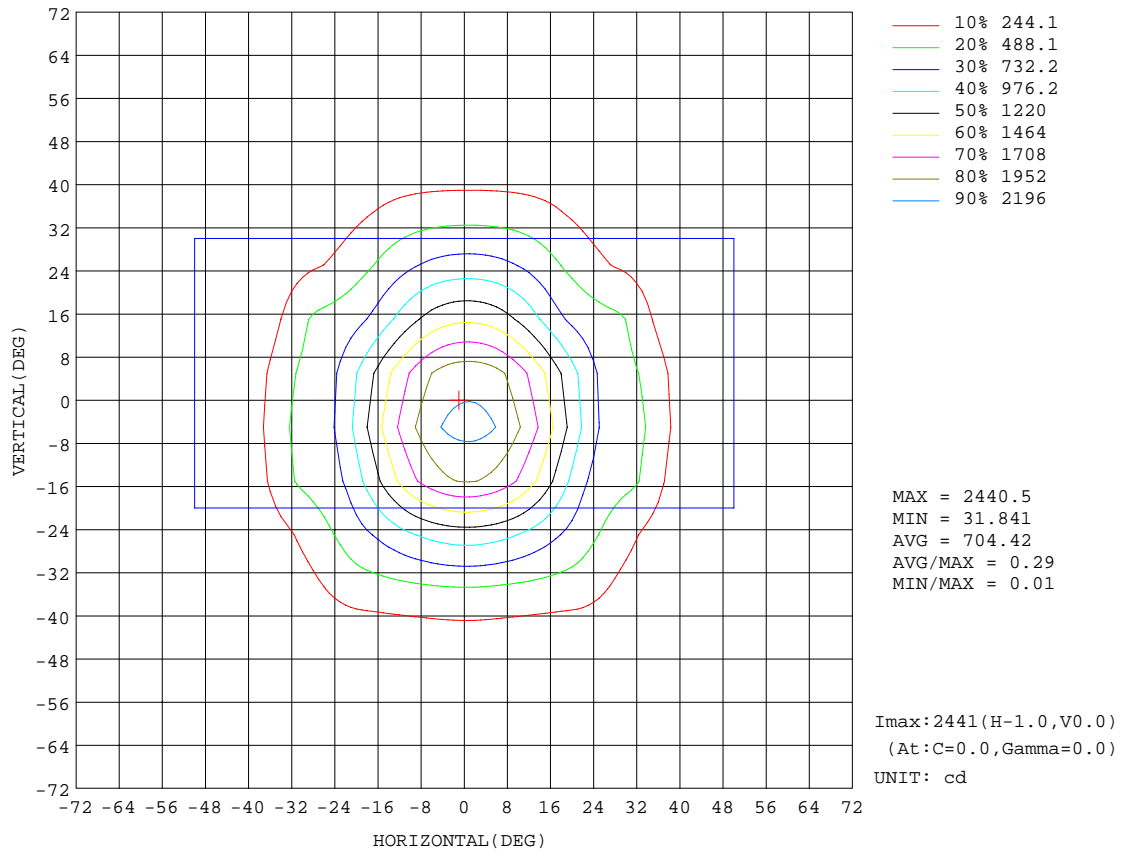
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	113	104	99	112	104	99	111	103	98	93
0.80	123	115	109	122	114	109	121	113	109	104
1.00	129	121	116	128	121	116	126	121	115	110
1.25	135	127	123	133	127	122	131	125	121	115
1.50	139	132	127	137	131	126	134	129	125	119
2.00	143	137	132	141	135	131	137	133	129	122
2.50	145	140	135	143	138	134	139	135	132	124
3.00	147	143	139	145	141	137	140	137	134	126
4.00	150	146	143	148	144	141	143	140	138	128
5.00	152	149	146	149	146	144	144	142	140	130
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHR NOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-11-13

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

NAME: Juvenis AC-20W-3000K-40D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

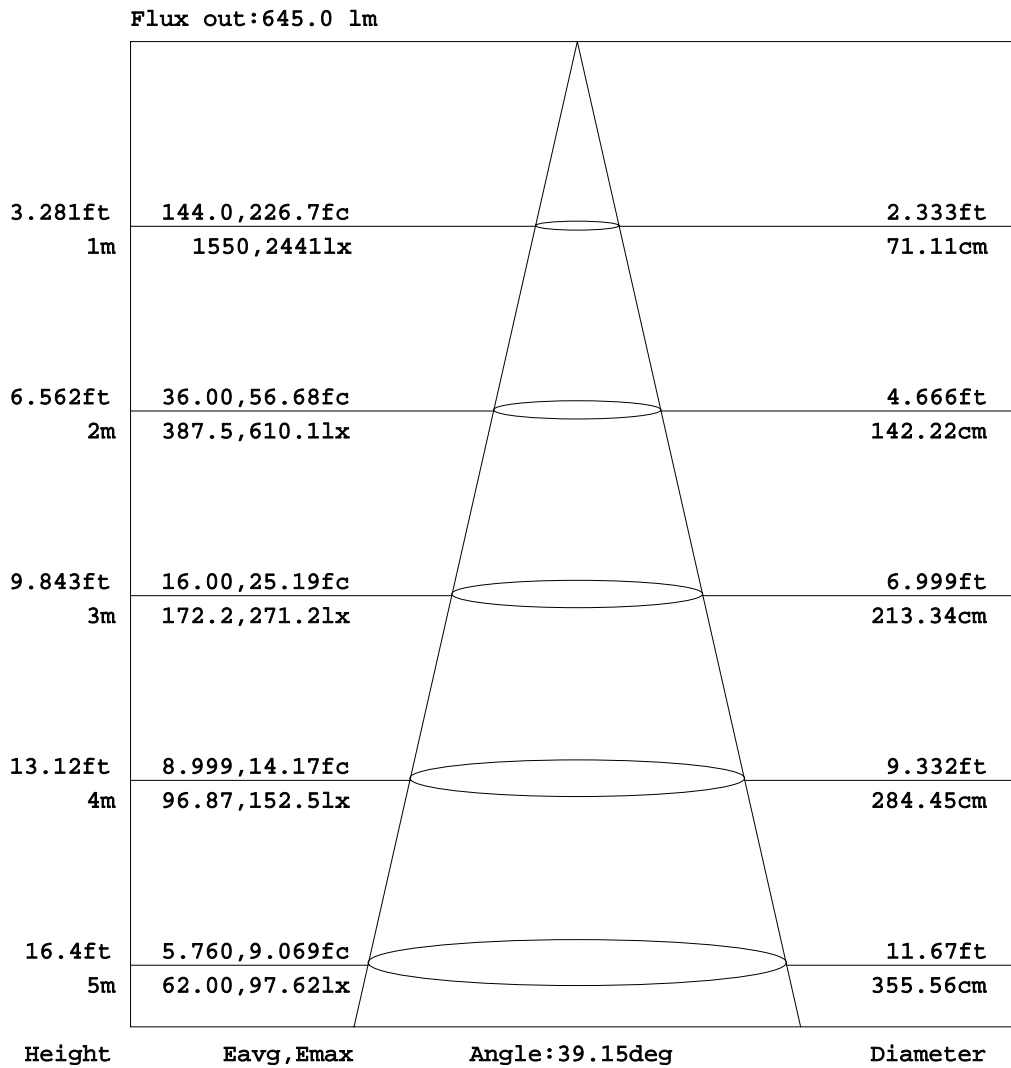


C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-11-13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

AAI Figure

NAME: Juvenis AC-20W-3000K-40D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:



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

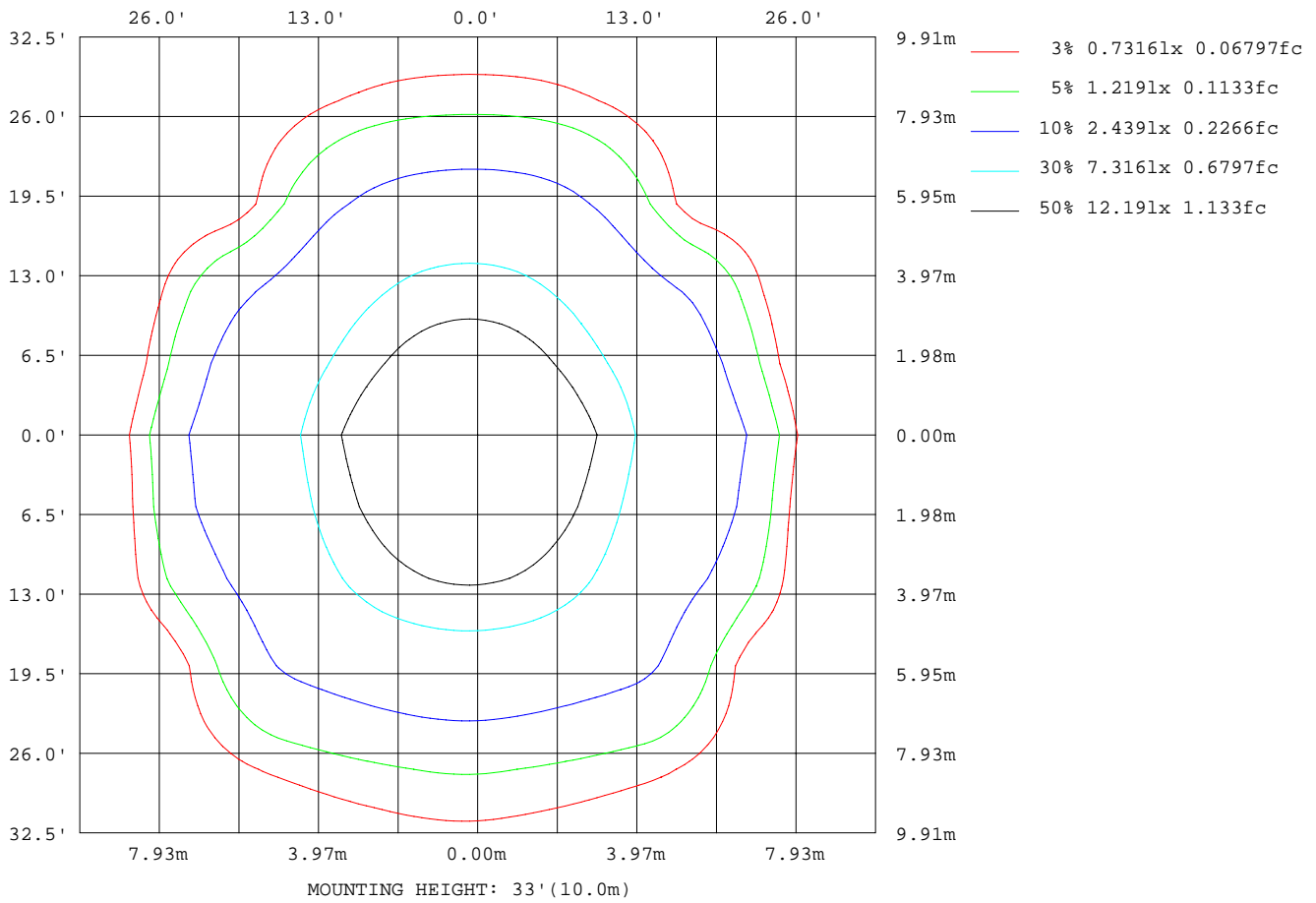
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-13

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:



ISOLUX DIAGRAM

NAME: Juvenis AC-20W-3000K-40D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-11-13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:

**Average Luminance Table(CIBSE)**

NAME: Juvenis AC-20W-3000K-40D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Parameter description for average Luminance	Symbol	Value	Unit
Luminance in Azimuth Plane	Bc	refer Table 2	cd/sq.m.
Intensity at angle Gamma in given azimuth plane	I	from data	cd/klm
Number of lamps	N	1	
Output of each lamp(initial lumens as specified)	F	1080.22	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.004	sq.m.
Angle to the downward vertical from light centre	Gamma	from data	deg

Table 1. Calculation parameters for determination of CIBSE LG3:1996 Average Luminance

G deg	C plane(deg)																			
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
55	15576	15799	16040	16401	16679	17023	17462	18023	19989	21859	20615	18743	17495	17043	16883	16572	16296	16159	15865	
60	14839	15039	15431	15641	15978	16364	16591	16651	16726	16458	16785	16918	16731	16543	16240	15935	15686	15450	15163	
65	14620	14711	15093	15377	15748	15963	16101	16452	16680	16723	16739	16626	16299	16148	16080	15793	15468	15182	14964	
70	15022	15113	15470	15738	15954	15888	16501	16940	17204	17268	17340	17288	17033	16509	16443	16378	16120	15765	15434	
75	14433	14685	14699	15775	14674	15969	17330	17920	18222	18332	18488	18597	18359	17448	16192	17152	16931	16886	16268	
80	7315	7642	9881	10950	11770	10977	6972	3201	811	0	824	3339	7520	12618	15455	14229	15664	14141	11460	
85	1901	2428	2693	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6443	5906	3831

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

CIBSE Category	Gamma (deg)	Average Luminance		Patch Luminance	
		maximum	specified	maximum	specified
		calculated	maximum	measured	maximum
Category 1	55 to 90	21859	200	---	500
Category 2	65 to 90	18597	200	---	500
Category 3	75 to 90	18597	200	---	500

Table 3. Tabulation of Average and Patch Luminance(cd/sq.m.) for defined CIBSE categories

No match

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-13

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

**Average Luminance Table(CIBSE)**

NAME: Juvenis AC-20W-3000K-40D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Parameter description for average Luminance	Symbol	Value	Unit
Luminance in Azimuth Plane	Bc	refer Table 2	cd/sq.m.
Intensity at angle Gamma in given azimuth plane	I	from data	cd/klm
Number of lamps	N	1	
Output of each lamp(initial lumens as specified)	F	1080.22	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.004	sq.m.
Angle to the downward vertical from light centre	Gamma	from data	deg

Table 1. Calculation parameters for determination of CIBSE LG3:2001 Average Luminance

G deg	C plane(deg)																			
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
55	15576	15799	16040	16401	16679	17023	17462	18023	19989	21859	20615	18743	17495	17043	16883	16572	16296	16159	15865	
60	14839	15039	15431	15641	15978	16364	16591	16651	16726	16458	16785	16918	16731	16543	16240	15935	15686	15450	15163	
65	14620	14711	15093	15377	15748	15963	16101	16452	16680	16723	16739	16626	16299	16148	16080	15793	15468	15182	14964	
70	15022	15113	15470	15738	15954	15888	16501	16940	17204	17268	17340	17288	17033	16509	16443	16378	16120	15765	15434	
75	14433	14685	14699	15775	14674	15969	17330	17920	18222	18332	18488	18597	18359	17448	16192	17152	16931	16886	16268	
80	7315	7642	9881	10950	11770	10977	6972	3201	811	0	824	3339	7520	12618	15455	14229	15664	14141	11460	
85	1901	2428	2693	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6443	5906	3831

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

range (deg)	Maximum measured	Average Luminance(cd/sq.m)			
		Maximum limit for screen type & software category used			
		Type I,II screen Some neg.s'ware	Type I,II screen Only pos.s'ware	Type III screen Some neg.s'ware	Type III screen Only pos.s'ware
55 to 90	21859	1000	1500	200	500
65 to 90	18597	1000	1500	200	500

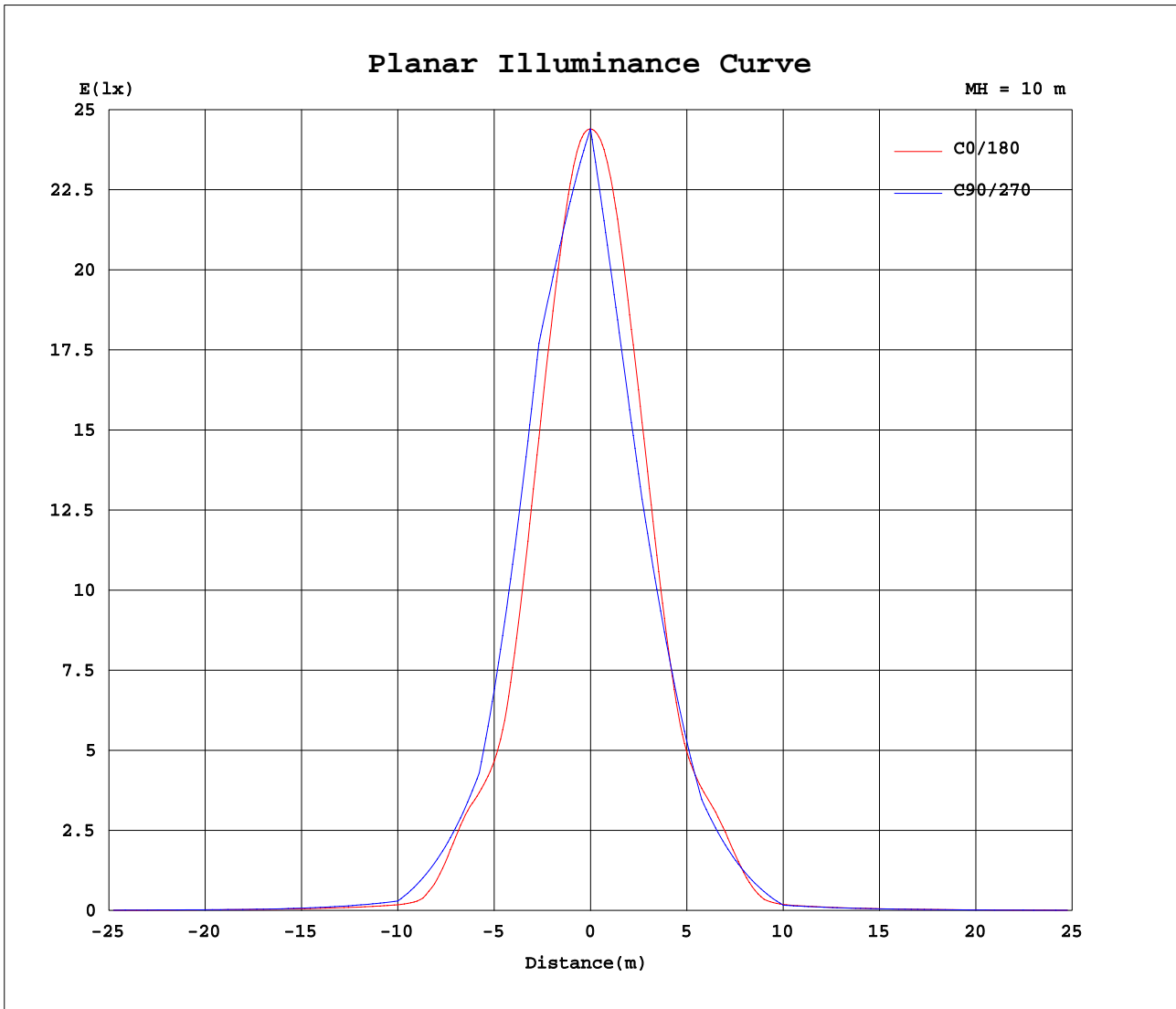
Table 3. Tabulation of average luminance(cd/sq.m.) and luminance limits

No match

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-13

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DOBAC  
 Test Date: 2017-11-13

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
 Humidity: 65.0%  
 Test Distance: 6.960m [K=1.0000]  
 Remarks:



LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Juvenis AC-20W-3000K-40D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Table--2

UNIT: cd

C( DEG) γ (DEG)	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185
0	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441
5	2282	2283	2283	2284	2285	2286	2289	2291	2293	2297	2301	2305	2311	2319	2327	2338	2349	2362	2334
10	2124	2122	2118	2112	2104	2095	2083	2072	2062	2052	2045	2039	2036	2037	2042	2053	2068	2089	2039
15	1964	1957	1944	1924	1897	1868	1837	1804	1770	1736	1704	1678	1659	1648	1644	1650	1665	1691	1628
20	1533	1534	1533	1529	1525	1518	1505	1482	1436	1375	1318	1269	1232	1204	1188	1183	1191	1214	1159
25	1100	1103	1107	1111	1113	1106	1089	1063	1027	988	945	884	837	804	780	769	766	776	754
30	667	680	700	724	746	760	762	750	723	679	641	626	617	601	590	584	583	587	571
35	471	472	475	483	496	514	539	543	507	470	453	459	486	488	460	441	437	446	405
40	279	281	288	301	319	343	366	356	318	271	252	255	261	249	208	176	163	166	146
45	87.0	92.5	104	123	148	178	196	189	156	101	70.1	94.2	87.2	68.2	61.2	56.2	54.4	54.5	53.7
50	66.2	61.8	57.6	53.5	49.2	47.1	60.8	76.7	64.8	51.0	45.9	45.8	45.5	44.8	45.0	44.1	43.5	43.7	43.0
55	49.6	47.3	45.4	43.0	40.7	40.1	39.9	39.1	38.7	38.7	38.6	38.0	37.8	37.4	37.1	37.1	36.4	36.4	35.8
60	33.2	33.6	34.0	33.8	33.4	33.5	33.2	33.1	32.8	32.5	32.2	31.9	31.5	31.4	31.0	30.9	30.4	30.3	29.9
65	28.3	28.3	28.3	28.1	27.9	27.6	27.4	27.3	27.3	27.2	27.0	26.7	26.4	26.1	26.0	25.7	25.4	25.3	25.0
70	23.7	23.7	23.8	23.7	23.5	23.3	23.0	22.6	22.3	22.5	22.6	22.4	22.1	22.1	21.8	21.6	21.4	21.1	21.0
75	19.1	19.1	19.2	19.3	19.2	19.0	18.6	18.1	17.3	16.8	16.9	17.8	18.1	17.5	17.9	17.5	17.2	16.8	16.3
80	0.14	0.57	1.30	2.32	3.64	5.22	7.00	8.76	10.2	10.7	9.88	9.88	10.4	10.9	10.0	9.82	8.85	7.96	7.13
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	2.25	2.52	2.06	1.67	1.34
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-13

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Juvenis AC-20W-3000K-40D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Table--3

UNIT: cd

C( DEG) γ (DEG)	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280
0	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441
5	2307	2282	2258	2236	2217	2199	2182	2167	2153	2142	2131	2123	2115	2109	2105	2102	2102	2102	2104
10	1994	1955	1921	1893	1868	1848	1831	1817	1805	1796	1789	1782	1776	1771	1768	1765	1763	1761	1761
15	1575	1531	1496	1467	1445	1429	1420	1416	1416	1417	1420	1423	1426	1427	1427	1427	1425	1419	1414
20	1117	1084	1059	1039	1024	1016	1013	1016	1031	1056	1080	1098	1113	1122	1127	1129	1128	1122	1115
25	741	733	729	722	710	694	693	708	735	764	790	811	824	831	833	833	831	828	825
30	562	561	566	569	544	504	482	479	493	517	541	556	560	555	546	537	534	537	544
35	380	371	381	389	369	328	288	275	286	308	342	365	376	378	376	373	372	373	376
40	134	130	138	163	173	157	116	88.7	135	178	207	223	227	224	218	212	210	212	217
45	53.5	52.2	53.9	56.9	64.5	51.8	50.8	56.1	65.4	89.4	103	102	90.6	75.3	61.4	51.6	48.2	51.5	60.8
50	43.0	42.8	42.5	42.1	41.9	41.7	41.7	42.0	43.3	43.2	40.8	40.9	40.9	41.1	41.4	41.4	41.3	41.3	41.0
55	36.0	35.5	35.2	35.1	34.9	34.8	34.5	34.1	34.4	34.5	34.4	34.5	34.4	34.4	34.5	34.5	34.4	34.4	34.2
60	30.0	29.6	29.4	29.2	29.0	28.8	28.8	28.9	28.7	28.6	28.4	28.3	28.0	27.8	27.7	27.6	27.5	27.5	27.6
65	24.8	24.7	24.5	24.3	24.2	24.1	24.0	23.9	23.6	23.1	22.7	22.5	22.4	22.3	22.3	22.3	22.3	22.2	22.1
70	20.7	20.5	20.4	19.8	19.8	19.9	19.5	18.4	17.7	17.3	17.1	17.0	17.1	17.1	17.1	17.1	17.0	17.0	16.8
75	15.9	15.6	14.5	14.4	14.4	13.3	12.2	11.6	11.3	11.4	11.4	11.5	11.7	11.8	11.9	11.9	11.8	11.7	11.5
80	6.80	6.51	6.57	6.82	6.08	5.26	4.66	4.41	4.08	3.51	2.77	2.02	1.35	0.78	0.35	0.09	0.00	0.09	0.34
85	1.08	1.18	0.80	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DOBAC  
Test Date: 2017-11-13

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity: 65.0%  
Test Distance: 6.960m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Juvenis AC-20W-3000K-40D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: DOBAC	SUR.:	PROTECTION ANGLE:

Table--4

UNIT: cd

C( DEG) γ (DEG)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441	2441				
5	2107	2112	2119	2126	2136	2147	2159	2173	2189	2206	2225	2247	2270	2296	2323				
10	1762	1764	1766	1770	1773	1779	1788	1799	1814	1832	1856	1885	1919	1959	2005				
15	1408	1401	1392	1383	1377	1372	1370	1372	1380	1395	1415	1442	1476	1520	1573				
20	1104	1087	1065	1040	1007	972	951	945	950	961	976	997	1021	1051	1090				
25	819	806	786	756	721	683	658	646	653	671	680	683	684	690	700				
30	552	553	543	519	487	462	451	457	481	522	547	540	532	534	546				
35	377	373	358	330	292	267	255	271	313	340	346	332	327	341	371				
40	223	224	217	197	165	120	78.4	109	141	145	126	97.2	100	111	120				
45	74.4	89.1	98.3	97.7	82.0	59.6	53.3	48.9	50.1	54.6	52.0	49.5	49.8	50.2	50.3				
50	40.5	40.4	40.3	40.0	41.8	41.9	40.7	40.9	40.5	40.7	40.8	40.8	41.3	41.4	41.8				
55	34.1	34.1	34.1	33.9	33.9	33.8	33.5	33.7	33.8	33.9	34.1	34.2	34.4	34.7	34.9				
60	27.7	27.9	28.0	28.2	28.3	28.3	28.3	28.2	28.1	28.3	28.4	28.7	28.7	29.0	29.1				
65	22.2	22.2	22.2	22.6	22.9	23.3	23.4	23.5	23.5	23.5	23.7	23.9	24.1	24.1	24.3				
70	16.7	16.7	16.5	16.6	16.7	17.1	17.9	19.0	19.3	19.1	19.0	19.8	19.8	20.1	20.2				
75	11.3	11.1	10.8	10.6	10.4	10.3	10.7	11.5	12.6	13.3	13.0	13.0	14.0	14.1	14.3				
80	0.74	1.26	1.86	2.47	2.96	3.31	3.51	3.69	4.44	5.25	5.52	4.87	4.85	4.63	4.83				
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.50	0.78	0.68	0.62				
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DOBAC  
Test Date:2017-11-13

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V1.0.260  
Humidity:65.0%  
Test Distance:6.960m [K=1.0000]  
Remarks: