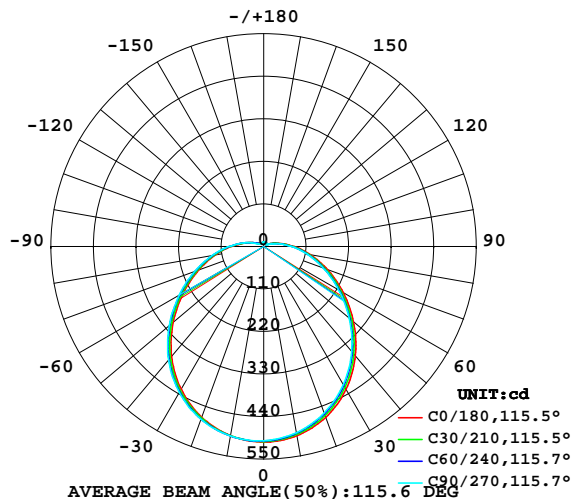


LUMINAIRE PHOTOMETRIC TEST REPORT

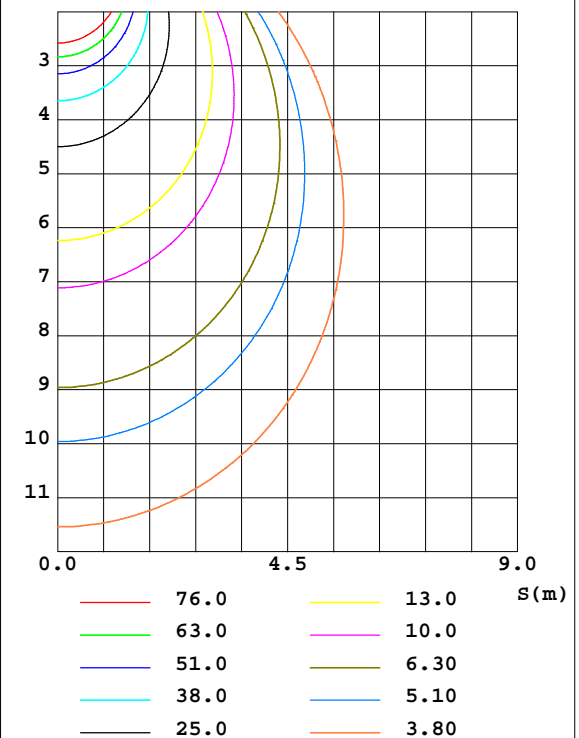
Test:U:220.1V I:0.0820A P:16.80W PF:0.9340 Lamp Flux:1775.63x1 lm		
NAME: L325 18W 000 50K	TYPE:LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 105.69 lm/W			
MODEL	L325 18W 000 50K	Imax(cd)	505.8	S/MH(C0/180)	1.25
NOMINAL POWER(W)	16.8	LOR(%)	100.0	S/MH(C90/270)	1.23
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	1775.6	η UP,DN(C0-180)	4.1,43.9
NOMINAL FLUX(lm)	1775.63	CIE CLASS	DIRECT	η UP,DN(C180-360)	4.9,47.1
LAMPS INSIDE	1	η up(%)	9.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220.1	η down(%)	91.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-01-10

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.000m [K=0.7063]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	496.8	491.9	488.8	487.4	496.8	497.2	497.4	496.5	0- 10	47.57	47.57	2.68,2.68
20	470.0	462.6	458.1	456.8	469.8	473.1	475.4	474.2	10- 20	136.2	183.8	10.4,10.4
30	426.2	417.6	412.5	411.0	426.7	432.9	436.5	435.4	20- 30	206.4	390.2	22,22
40	369.0	359.6	354.2	352.6	370.7	378.4	382.8	382.0	30- 40	249.0	639.2	36,36
50	303.2	293.8	289.0	287.1	306.5	314.5	319.2	318.6	40- 50	259.9	899.1	50.6,50.6
60	237.0	228.3	223.4	222.4	239.6	247.6	252.4	251.9	50- 60	242.1	1141	64.3,64.3
70	175.9	168.4	164.5	163.7	178.9	185.9	190.5	189.6	60- 70	204.9	1346	75.8,75.8
80	121.9	116.3	113.4	113.4	127.1	132.1	135.3	134.5	70- 80	158.4	1505	84.7,84.7
90	78.58	74.49	72.45	73.07	84.00	87.31	89.50	88.57	80- 90	110.9	1615	91,91
100	45.67	43.28	41.85	42.97	51.60	53.23	54.04	53.46	90-100	69.54	1685	94.9,94.9
110	24.08	23.14	19.25	23.01	29.07	29.57	24.83	29.19	100-110	38.16	1723	97,97
120	13.34	13.42	11.40	13.09	16.82	16.30	14.55	15.94	110-120	19.20	1742	98.1,98.1
130	8.989	9.118	8.757	9.129	11.40	10.89	10.39	10.57	120-130	10.78	1753	98.7,98.7
140	9.336	9.368	9.323	9.290	9.897	9.571	9.350	9.490	130-140	7.269	1760	99.1,99.1
150	10.22	10.17	10.13	10.08	10.41	10.21	10.09	10.13	140-150	6.142	1767	99.5,99.5
160	10.54	10.77	10.95	10.90	10.91	10.89	10.80	10.80	150-160	4.856	1771	99.8,99.8
170	11.27	11.34	11.44	11.36	11.33	11.28	11.39	11.36	160-170	3.141	1775	99.9,99.9
180	11.40	11.33	11.33	11.32	11.43	11.32	11.32	11.32	170-180	1.083	1776	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

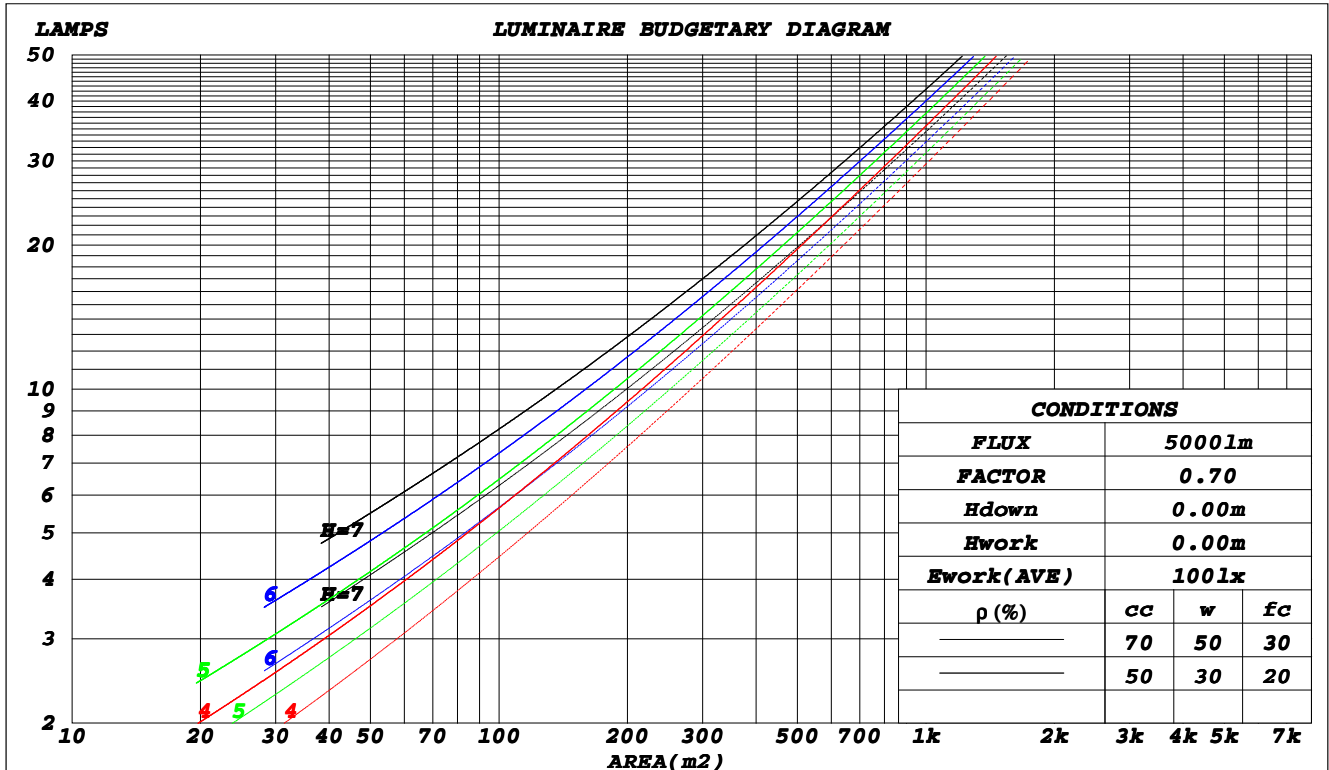
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-01-10

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.1V I:0.0820A P:16.80W PF:0.9340 Lamp Flux:1775.63x1 lm		
NAME: L325 18W 000 50K	TYPE:LED	
MFR.:		

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.17	1.17	1.17	1.13	1.13	1.13	1.06	1.06	1.06	.00	.00	.00	.94	.94	.94	.91
1.0	.99	.94	.89	.96	.91	.87	.90	.86	.82	.84	.81	.78	.79	.77	.74	.72
2.0	.85	.78	.71	.82	.75	.70	.77	.72	.67	.73	.68	.64	.68	.64	.61	.58
3.0	.74	.65	.58	.72	.64	.57	.68	.61	.55	.64	.58	.53	.60	.55	.51	.48
4.0	.65	.56	.49	.64	.55	.48	.60	.52	.47	.56	.50	.45	.53	.48	.43	.41
5.0	.58	.49	.42	.57	.48	.41	.53	.46	.40	.50	.44	.39	.48	.42	.38	.35
6.0	.52	.43	.36	.51	.42	.36	.48	.41	.35	.46	.39	.34	.43	.37	.33	.31
7.0	.47	.38	.32	.46	.38	.32	.44	.36	.31	.42	.35	.30	.39	.34	.29	.27
8.0	.43	.35	.29	.42	.34	.28	.40	.33	.27	.38	.32	.27	.36	.30	.26	.24
9.0	.40	.31	.26	.39	.31	.25	.37	.30	.25	.35	.29	.24	.33	.28	.23	.22
10.0	.36	.28	.23	.36	.28	.23	.34	.27	.22	.32	.26	.22	.31	.25	.21	.19



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2018-01-10

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.7063]
 Remarks:

WEC AND CCEC

Test:U:220.1V I:0.0820A P:16.80W PF:0.9340 Lamp Flux:1775.63x1 lm											
NAME: L325 18W 000 50K						TYPE:LED					
MFR.:											

ρ_{cc}	80%			70%			50%			30%			10%			0	
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρ_{fc}	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coeffcients(WEC)										
0.0																	
1.0	.366	.208	.066	.356	.203	.064	.337	.193	.062	.320	.185	.059	.304	.176	.057		
2.0	.322	.177	.054	.313	.173	.053	.296	.165	.051	.281	.158	.049	.267	.151	.048		
3.0	.289	.154	.046	.281	.150	.045	.266	.144	.044	.252	.138	.042	.239	.132	.041		
4.0	.262	.136	.040	.254	.133	.039	.241	.128	.038	.228	.123	.037	.217	.118	.036		
5.0	.239	.122	.035	.232	.119	.035	.220	.115	.034	.209	.110	.033	.198	.106	.032		
6.0	.220	.110	.032	.214	.108	.031	.203	.104	.030	.193	.100	.029	.183	.096	.029		
7.0	.203	.100	.028	.198	.099	.028	.188	.095	.027	.179	.092	.027	.170	.088	.026		
8.0	.189	.092	.026	.184	.091	.026	.175	.087	.025	.166	.084	.024	.158	.081	.024		
9.0	.176	.085	.024	.172	.084	.024	.164	.081	.023	.156	.078	.022	.148	.075	.022		
10.0	.165	.079	.022	.161	.078	.022	.154	.075	.021	.146	.073	.021	.140	.070	.020		

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC')									
0.0	.259	.259	.259	.222	.222	.222	.151	.151	.151	.087	.087	.087	.028	.028	.028	
1.0	.253	.225	.199	.217	.193	.171	.148	.133	.119	.085	.077	.069	.027	.025	.022	
2.0	.246	.202	.164	.211	.173	.142	.144	.120	.099	.083	.070	.058	.027	.023	.019	
3.0	.238	.185	.142	.204	.159	.123	.140	.111	.086	.081	.065	.051	.026	.021	.017	
4.0	.230	.172	.127	.198	.148	.110	.136	.103	.078	.079	.061	.046	.025	.020	.015	
5.0	.223	.162	.117	.191	.140	.101	.132	.098	.072	.076	.057	.042	.025	.019	.014	
6.0	.215	.153	.109	.185	.133	.095	.128	.093	.067	.074	.055	.040	.024	.018	.013	
7.0	.208	.147	.104	.179	.127	.090	.124	.089	.064	.072	.053	.038	.023	.017	.013	
8.0	.201	.141	.100	.173	.122	.087	.120	.086	.062	.070	.051	.037	.023	.017	.012	
9.0	.195	.136	.096	.168	.118	.084	.117	.083	.060	.068	.049	.036	.022	.016	.012	
10.0	.189	.132	.094	.163	.115	.082	.113	.081	.058	.066	.048	.035	.021	.016	.011	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-01-10

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

Uncorrected UGR Table

Test:U:220.1V I:0.0820A P:16.80W PF:0.9340 Lamp Flux:1775.63x1 lm										
NAME: L325 18W 000 50K					TYPE:LED					
MFR.:										
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	21.7	23.1	22.1	23.5	23.9	21.4	22.9	21.8	23.2	23.6
3H	23.6	25.0	24.1	25.4	25.8	23.3	24.7	23.8	25.1	25.5
4H	24.6	25.9	25.1	26.3	26.8	24.3	25.6	24.8	26.0	26.5
6H	25.7	26.9	26.2	27.4	27.8	25.4	26.6	25.8	27.0	27.5
8H	26.3	27.5	26.8	27.9	28.4	25.9	27.1	26.4	27.5	28.0
12H	27.0	28.1	27.4	28.6	29.0	26.6	27.7	27.0	28.1	28.6
4H 2H	22.3	23.6	22.7	24.0	24.4	22.1	23.4	22.6	23.8	24.3
3H	24.5	25.6	25.0	26.1	26.6	24.2	25.4	24.7	25.8	26.3
4H	25.7	26.7	26.2	27.2	27.7	25.4	26.4	25.9	26.9	27.5
6H	27.0	27.9	27.5	28.4	29.0	26.6	27.6	27.2	28.1	28.6
8H	27.6	28.5	28.2	29.0	29.6	27.3	28.2	27.8	28.7	29.3
12H	28.4	29.2	29.0	29.8	30.4	28.0	28.9	28.6	29.4	30.0
8H 4H	26.1	27.0	26.7	27.5	28.1	25.9	26.8	26.4	27.3	27.9
6H	27.6	28.4	28.2	28.9	29.6	27.4	28.1	28.0	28.7	29.3
8H	28.5	29.2	29.1	29.8	30.4	28.2	28.9	28.8	29.5	30.1
12H	29.5	30.1	30.1	30.7	31.4	29.2	29.8	29.8	30.4	31.0
12H 4H	26.2	27.0	26.8	27.5	28.1	26.0	26.8	26.5	27.3	27.9
6H	27.8	28.5	28.4	29.1	29.7	27.6	28.2	28.2	28.8	29.5
8H	28.8	29.4	29.4	30.0	30.6	28.5	29.1	29.1	29.7	30.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117 Corrected 1776 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.0)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-01-10

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.1V I:0.0820A P:16.80W PF:0.9340 Lamp Flux:1775.63x1 lm		
NAME: L325 18W 000 50K	TYPE:LED	
MFR.:		

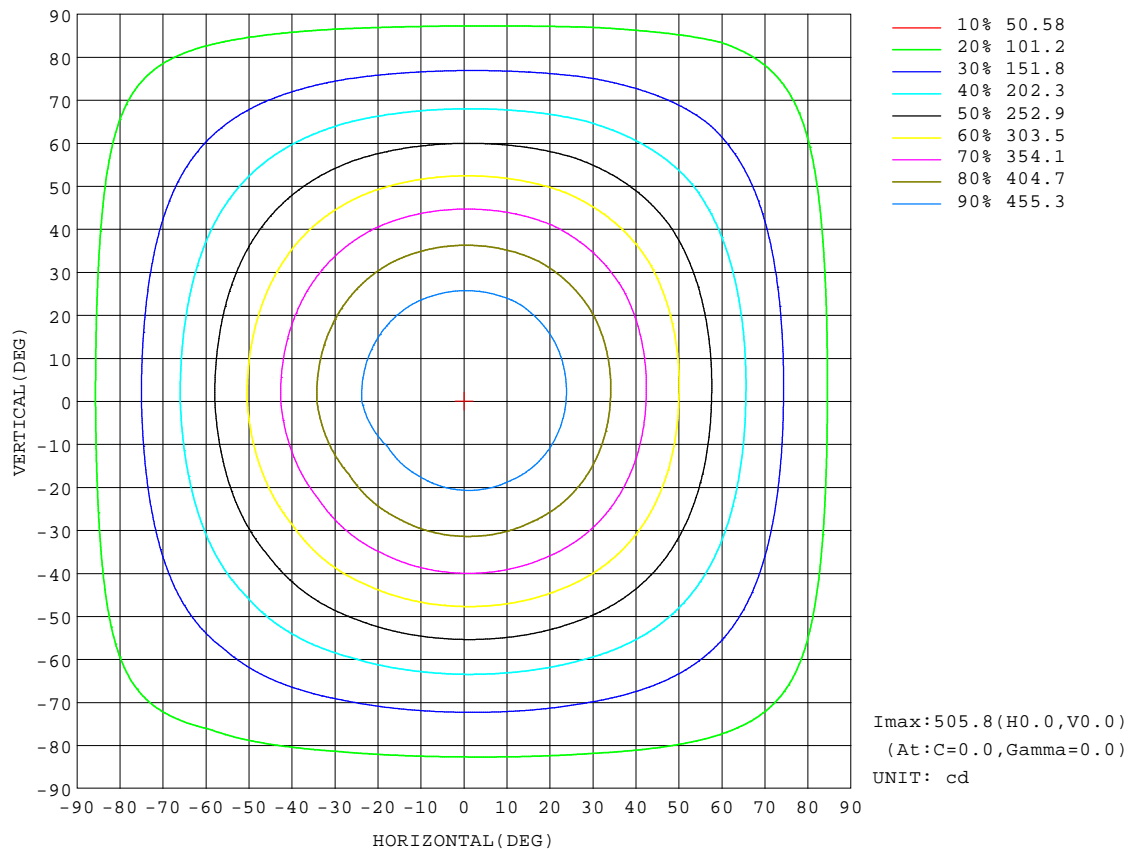
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	52	40	33	51	40	33	50	39	33	26
0.80	62	49	42	60	49	41	58	48	41	33
1.00	70	57	49	68	57	49	65	58	48	40
1.25	76	65	57	75	64	56	71	62	55	46
1.50	81	70	62	79	69	61	75	67	60	51
2.00	88	78	71	86	77	70	82	74	68	58
2.50	93	83	76	90	81	75	85	78	72	62
3.00	96	88	81	93	86	79	88	82	77	66
4.00	101	93	88	98	91	86	92	87	82	70
5.00	103	97	92	100	95	90	94	90	86	73
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-01-10

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.1V I:0.0820A P:16.80W PF:0.9340 Lamp Flux:1775.63x1 lm		
NAME: L325 18W 000 50K	TYPE:LED	
MFR.:		



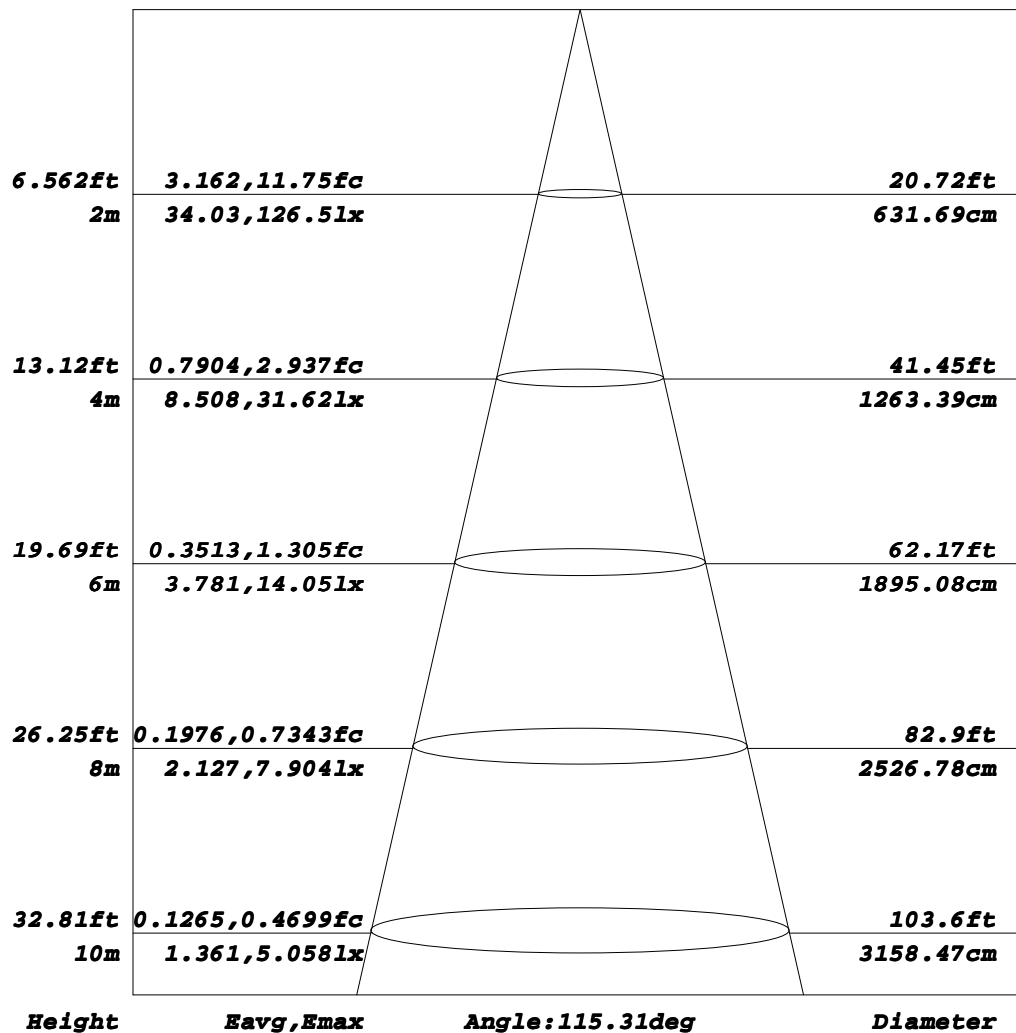
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-01-10

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

AAI Figure

Test:U:220.1V I:0.0820A P:16.80W PF:0.9340 Lamp Flux:1775.63x1 lm		
NAME: L325 18W 000 50K	TYPE:LED	
MFR.:		

Flux out:1095 lm



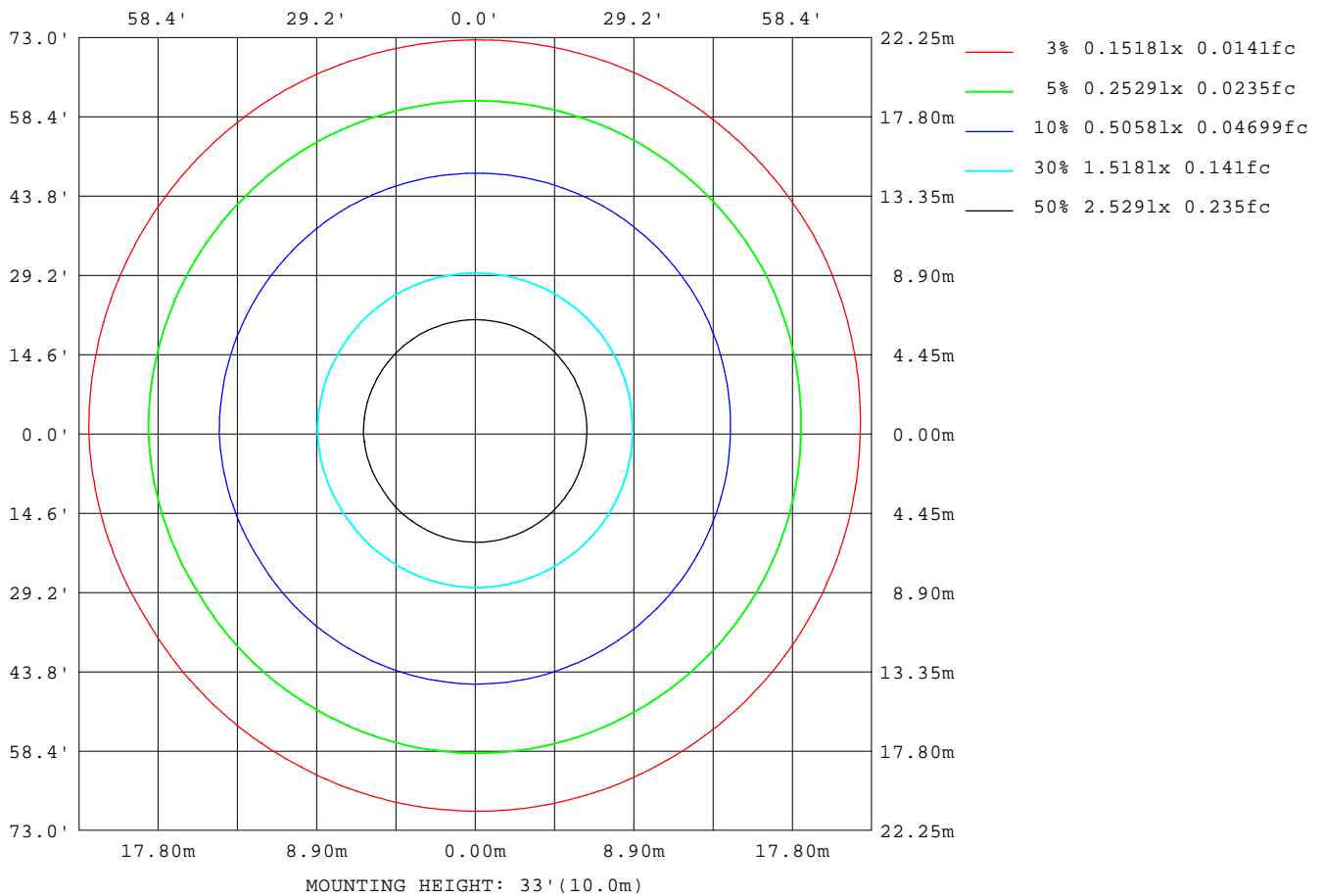
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-01-10

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

ISOLUX DIAGRAM

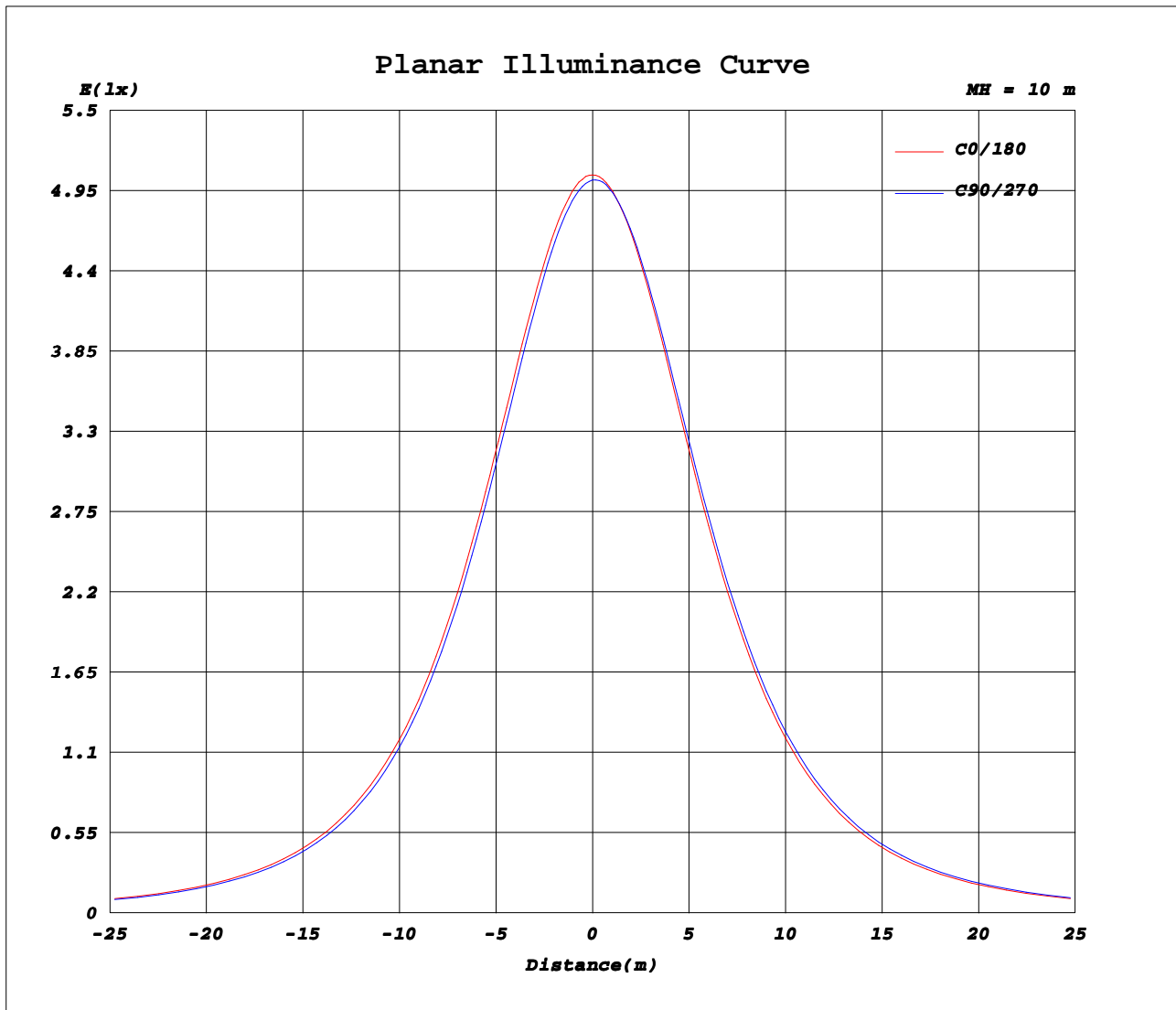
Test:U:220.1V I:0.0820A P:16.80W PF:0.9340 Lamp Flux:1775.63x1 lm		
NAME: L325 18W 000 50K	TYPE:LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-01-10

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-01-10

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.1V I:0.0820A P:16.80W PF:0.9340 Lamp Flux:1775.63x1 lm																	
NAME: L325 18W 000 50K									TYPE:LED								
MFR.:																	

Table--1

UNIT: cd

<div> <div>C(DEG)</div> <div>γ (DEG)</div> </div>	0	30	60	90	120	150	180	210	240	270	300	330						
0	506	505	503	502	501	501	506	505	503	502	501	501						
5	504	501	499	498	496	497	503	503	503	502	502	501						
10	497	494	490	489	487	488	497	497	498	497	497	496						
15	485	481	478	475	474	474	485	486	488	489	489	486						
20	470	465	460	458	456	457	470	472	475	475	476	473						
25	450	444	439	437	435	436	450	453	457	458	458	455						
30	426	421	415	413	410	412	427	431	435	437	437	434						
35	399	393	387	385	382	384	400	405	410	411	413	408						
40	369	363	357	354	351	354	371	376	381	383	384	380						
45	337	330	324	322	319	322	339	344	350	352	354	348						
50	303	297	291	289	285	289	306	311	318	319	321	316						
55	270	263	258	256	253	256	272	278	284	286	287	283						
60	237	231	226	223	221	224	240	244	251	252	254	249						
65	206	200	195	193	191	193	208	213	219	221	222	218						
70	176	171	166	165	162	165	179	183	188	190	192	188						
75	148	144	139	138	136	139	152	156	160	162	163	159						
80	122	118	114	113	112	115	127	130	134	135	136	133						
85	99.2	95.6	92.7	91.7	91.0	93.0	104	107	110	111	112	109						
90	78.6	75.7	73.3	72.4	72.1	74.0	84.0	86.0	88.7	89.5	90.0	87.1						
95	60.6	58.5	56.3	55.7	55.6	57.7	66.4	67.8	69.9	70.5	70.7	68.3						
100	45.7	44.2	42.4	41.8	42.0	43.9	51.6	52.2	54.3	54.0	54.7	52.2						
105	33.2	32.5	31.1	26.8	30.7	32.7	39.0	39.3	40.7	40.0	40.8	39.0						
110	24.1	23.8	22.5	19.2	22.1	23.9	29.1	29.2	30.0	24.8	29.7	28.7						
115	17.5	17.8	16.5	14.1	16.2	17.8	21.7	21.6	21.8	18.8	21.3	21.2						
120	13.3	14.0	12.8	11.4	12.5	13.7	16.8	16.3	16.3	14.6	15.8	16.1						
125	11.2	11.5	10.4	9.91	10.4	11.2	13.7	13.4	13.1	12.0	12.6	13.6						
130	8.99	9.35	8.88	8.76	8.85	9.40	11.4	10.9	10.9	10.4	10.5	10.6						
135	8.98	8.86	9.11	8.85	8.80	8.98	9.97	9.83	9.40	9.16	9.20	9.76						
140	9.34	9.31	9.42	9.32	9.29	9.29	9.90	9.71	9.44	9.35	9.38	9.60						
145	9.62	9.79	9.75	9.76	9.73	9.66	10.1	9.94	9.78	9.72	9.72	9.85						
150	10.2	10.2	10.1	10.1	10.1	10.0	10.4	10.3	10.2	10.1	10.1	10.2						
155	10.4	10.5	10.5	10.5	10.5	10.4	10.8	10.6	10.5	10.4	10.4	10.5						
160	10.5	10.7	10.8	10.9	10.9	10.9	10.9	10.9	10.8	10.8	10.8	10.8						
165	10.9	11.0	11.1	11.3	11.3	11.1	11.1	11.2	11.2	11.1	11.1	11.1						
170	11.3	11.3	11.4	11.4	11.5	11.3	11.3	11.2	11.4	11.4	11.4	11.3						
175	11.4	11.4	11.3	11.4	11.4	11.4	11.4	11.2	11.2	11.3	11.3	11.2						
180	11.4	11.4	11.3	11.3	11.3	11.3	11.4	11.3	11.3	11.3	11.3	11.3						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-01-10

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks: