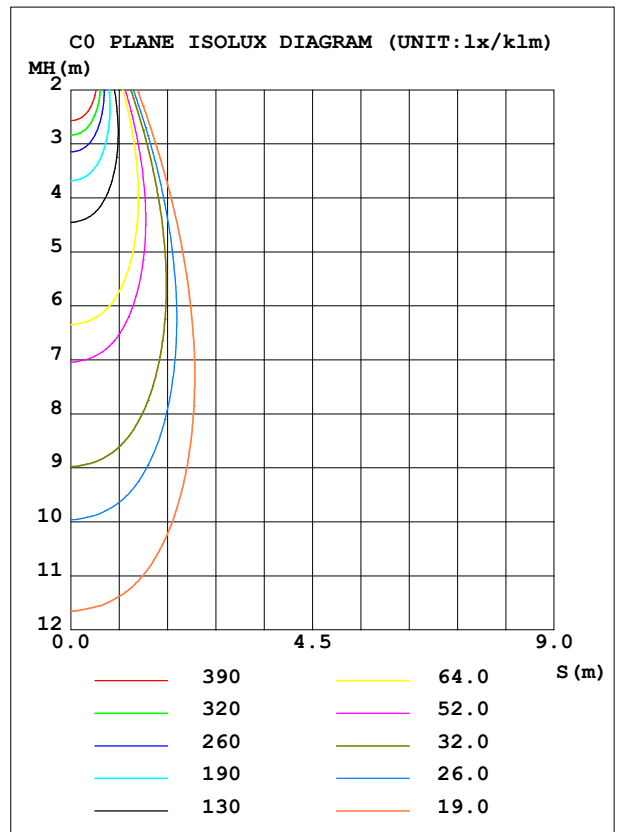
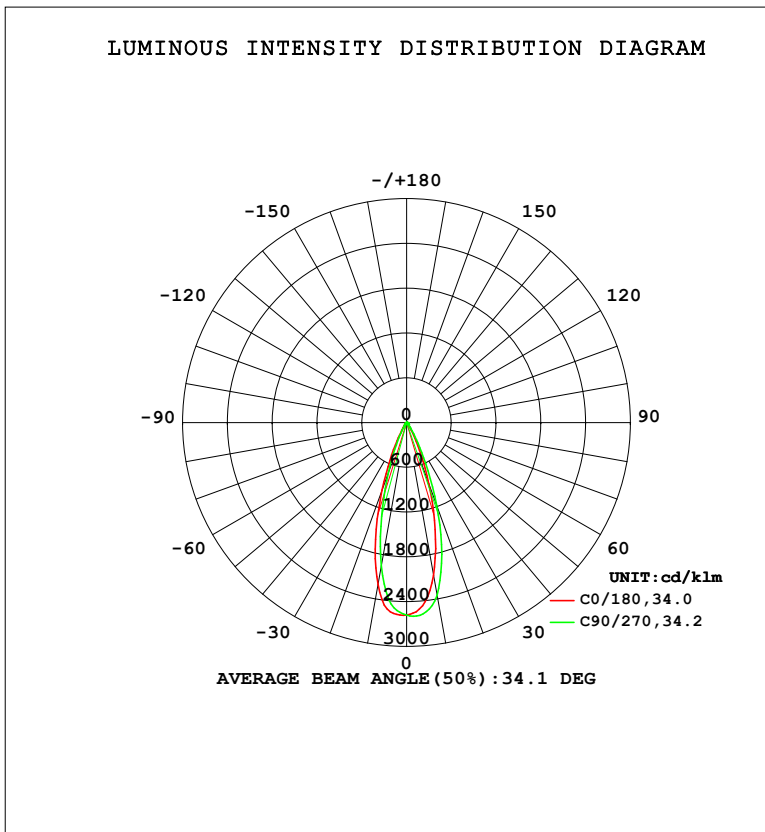


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:119.82V I:0.1145A P:13.531W PF:0.9866 Freq:59.98Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1202.63x1 lm		
NAME: ASD-TCS-1D15AC-WH	TYPE:	WEIGHT:
SPEC.: 5000K 90	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING GORP	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL		Imax (cd/klm)	2604	S/MH (C0/180)	0.56
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.50
RATED VOLTAGE (V)	120.0	TOTAL FLUX (lm/klm)	1000.0	$\eta$ UP, DN (C0-180)	0.0,56.1
NOMINAL FLUX (lm)	1202.63	CIE CLASS	DIRECT	$\eta$ UP, DN (C180-360)	0.0,43.9
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	120	$\eta$ down (%)	100.0	CIBSE SHR MAX	0.55



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 24.3 °C  
 Operators:  
 Test Date: 2023-08-04

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity: 65.0%  
 Test Distance: 3.080m [K=1.0000]  
 Remarks:

**ZONAL FLUX DIAGRAM**

ZONAL FLUX DIAGRAM:

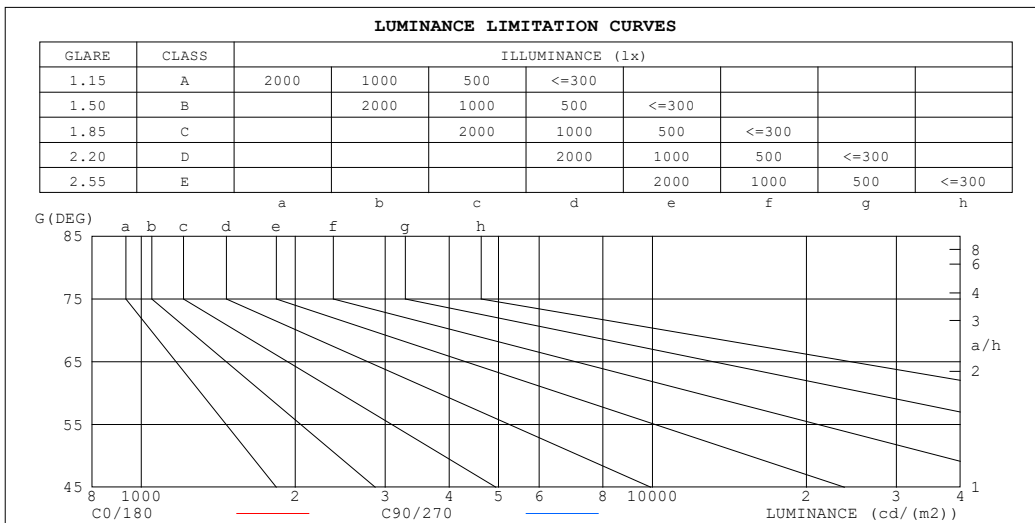
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum,lamp
10	2078	2280	2351	2390	2206	2032	1951	1920	0- 10	227.6	227.6	22.8,22.8
20	874.7	1087	1184	1173	966.6	797.1	717.9	693.2	10- 20	421.7	649.2	64.9,64.9
30	167.5	243.0	267.7	261.7	193.5	144.2	132.3	125.1	20- 30	219.2	868.4	86.8,86.8
40	45.12	55.36	55.70	56.05	47.37	40.40	41.64	41.38	30- 40	59.36	927.7	92.8,92.8
50	29.16	30.86	30.09	28.92	26.89	26.12	27.69	29.54	40- 50	27.39	955.1	95.5,95.5
60	20.69	22.36	21.96	22.11	20.49	20.10	19.76	19.97	50- 60	22.33	977.5	97.7,97.7
70	10.00	12.97	11.34	13.62	10.38	11.95	9.356	11.25	60- 70	16.18	993.6	99.4,99.4
80	0.6419	1.324	1.324	1.945	0.8874	1.154	0.6628	1.032	70- 80	5.925	999.6	100,100
90	0.0523	0.0452	0.0683	0.0455	0.0433	0.0332	0.0440	0.0347	80- 90	0.4422	1000	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd/klm									UNIT:lm/klm		

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.3 °C  
 Operators:  
 Test Date:2023-08-04

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.080m [K=1.0000]  
 Remarks:

**LUMINANCE LIMITATION CURVES**

Test:U:119.82V I:0.1145A P:13.531W PF:0.9866 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1202.63x1 lm		
NAME: ASD-TCS-1D15AC-WH	TYPE:	WEIGHT:
SPEC.: 5000K 90	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING GORP	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	45	57
80	40	83
75	184	222
70	317	359
65	401	433
60	448	475
55	479	499
50	491	507
45	517	566

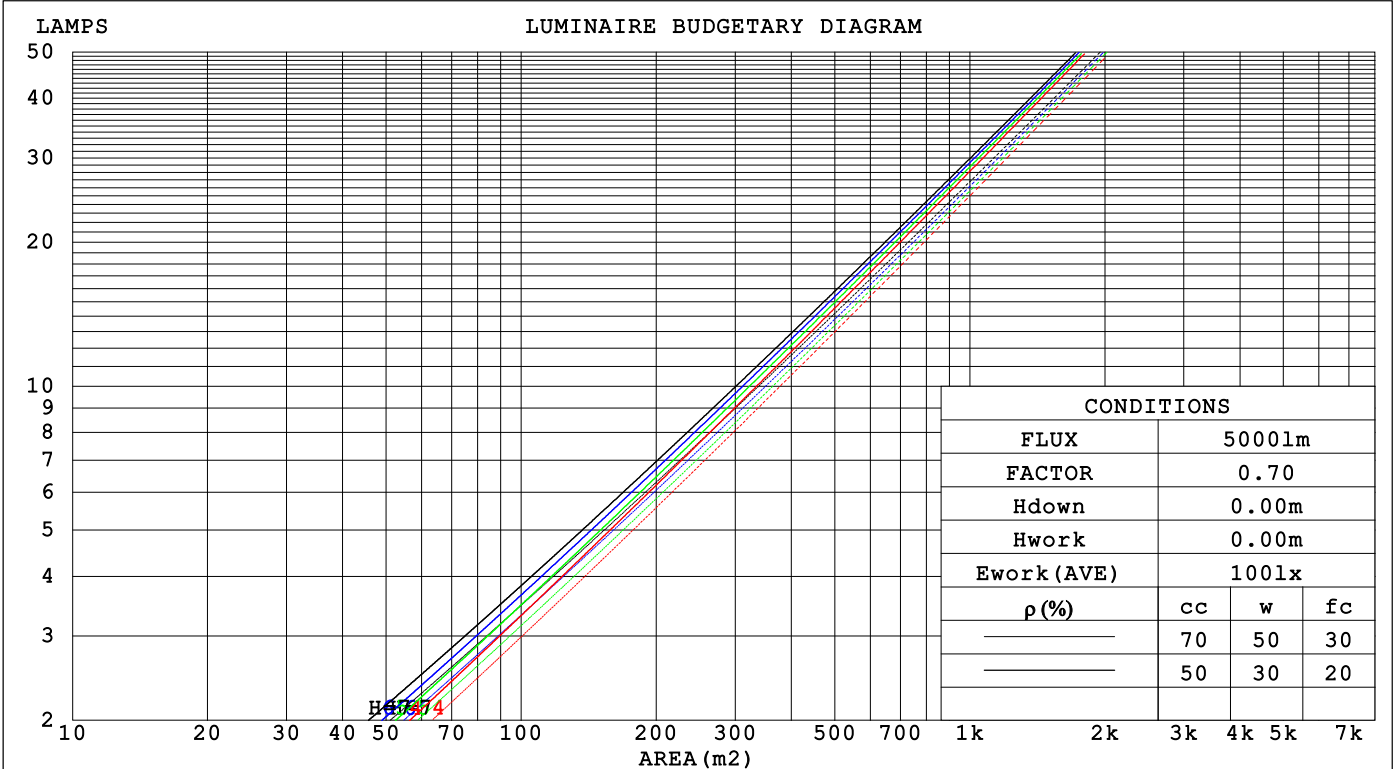
C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 24.3°C  
 Operators:  
 Test Date: 2023-08-04

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity: 65.0%  
 Test Distance: 3.080m [K=1.0000]  
 Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

Test:U:119.82V I:0.1145A P:13.531W PF:0.9866 Freq:59.98Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1202.63x1 lm		
NAME: ASD-TCS-1D15AC-WH	TYPE:	WEIGHT:
SPEC.: 5000K 90	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING GORP	SUR.:	Shielding Angle:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															
	Coefficients of Utilization(CU)															
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	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	1.01	.99	.98	.97	.97	.95
2.0	1.05	1.01	.98	1.03	1.00	.97	1.00	.98	.95	.97	.95	.93	.95	.93	.91	.90
3.0	.99	.95	.91	.98	.94	.91	.95	.92	.89	.93	.90	.88	.91	.89	.87	.85
4.0	.94	.89	.86	.93	.89	.85	.91	.87	.84	.89	.86	.83	.87	.85	.82	.81
5.0	.90	.85	.81	.89	.84	.81	.87	.83	.80	.86	.82	.79	.84	.81	.79	.77
6.0	.86	.81	.77	.85	.80	.77	.84	.79	.76	.82	.79	.76	.81	.78	.75	.74
7.0	.82	.77	.73	.81	.77	.73	.80	.76	.73	.79	.75	.73	.78	.75	.72	.71
8.0	.79	.74	.70	.78	.73	.70	.77	.73	.70	.76	.72	.70	.75	.72	.69	.68
9.0	.76	.71	.68	.75	.71	.67	.74	.70	.67	.74	.70	.67	.73	.69	.67	.66
10.0	.73	.68	.65	.73	.68	.65	.72	.68	.65	.71	.67	.65	.70	.67	.64	.63



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.3°C  
 Operators:  
 Test Date:2023-08-04

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.080m [K=1.0000]  
 Remarks:

**WEC AND CCEC**

Test:U:119.82V I:0.1145A P:13.531W PF:0.9866 Freq:59.98Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1202.63x1 lm		
NAME: ASD-TCS-1D15AC-WH	TYPE:	WEIGHT:
SPEC.: 5000K 90	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING GORP	SUR.:	Shielding Angle:

$\rho_{CC}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.161	.092	.029	.155	.088	.028	.142	.082	.026	.131	.075	.024	.120	.070	.022	
2.0	.152	.083	.026	.146	.081	.025	.136	.076	.023	.126	.071	.022	.117	.066	.021	
3.0	.142	.076	.023	.138	.074	.022	.129	.070	.021	.121	.066	.020	.113	.063	.019	
4.0	.134	.070	.020	.130	.068	.020	.122	.065	.019	.115	.062	.019	.109	.059	.018	
5.0	.126	.064	.019	.123	.063	.018	.116	.061	.018	.110	.058	.017	.105	.056	.017	
6.0	.120	.060	.017	.117	.059	.017	.111	.057	.017	.106	.055	.016	.101	.053	.016	
7.0	.113	.056	.016	.111	.055	.016	.106	.054	.015	.101	.052	.015	.097	.050	.015	
8.0	.108	.053	.015	.106	.052	.015	.101	.051	.014	.097	.049	.014	.093	.048	.014	
9.0	.103	.050	.014	.101	.049	.014	.097	.048	.014	.094	.047	.013	.090	.046	.013	
10.0	.099	.047	.013	.097	.047	.013	.093	.046	.013	.090	.045	.013	.087	.044	.013	

$\rho_{CC}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	.145	.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	.140	.113	.092	.120	.098	.080	.082	.068	.056	.048	.040	.033	.015	.013	.011	
4.0	.128	.098	.075	.110	.085	.066	.076	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.119	.086	.063	.102	.075	.054	.070	.052	.038	.041	.031	.023	.013	.010	.008	
6.0	.110	.077	.053	.095	.067	.046	.065	.047	.032	.038	.027	.019	.012	.009	.006	
7.0	.103	.069	.045	.089	.060	.039	.061	.042	.028	.036	.025	.016	.012	.008	.005	
8.0	.097	.062	.039	.083	.054	.034	.058	.038	.024	.034	.022	.014	.011	.007	.005	
9.0	.091	.057	.034	.079	.049	.029	.055	.035	.021	.032	.021	.012	.010	.007	.004	
10.0	.087	.052	.029	.075	.045	.026	.052	.032	.018	.030	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.3°C  
 Operators:  
 Test Date:2023-08-04

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.080m [K=1.0000]  
 Remarks:

**UGR(Unified Glare Rating) Table**

Test:U:119.82V I:0.1145A P:13.531W PF:0.9866 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1202.63x1 lm		
NAME: ASD-TCS-1D15AC-WH	TYPE:	WEIGHT:
SPEC.: 5000K 90	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING GORP	SUR.:	Shielding 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	3.8	4.6	4.0	4.8	4.9	4.5	5.3	4.7	5.5	5.6
3H	4.8	5.5	5.0	5.7	5.9	5.4	6.2	5.7	6.4	6.6
4H	4.9	5.6	5.2	5.8	6.0	5.6	6.3	5.9	6.5	6.7
6H	4.9	5.5	5.1	5.8	6.0	5.6	6.3	5.9	6.5	6.7
8H	4.8	5.5	5.1	5.7	6.0	5.6	6.2	5.9	6.4	6.7
12H	4.8	5.4	5.1	5.7	5.9	5.5	6.1	5.8	6.4	6.7
4H 2H	4.4	5.1	4.6	5.3	5.5	4.9	5.7	5.2	5.9	6.1
3H	5.5	6.1	5.8	6.3	6.6	6.0	6.6	6.3	6.9	7.2
4H	5.6	6.2	6.0	6.5	6.8	6.2	6.8	6.6	7.1	7.4
6H	5.6	6.1	6.0	6.4	6.7	6.2	6.7	6.6	7.1	7.4
8H	5.5	6.0	5.9	6.3	6.7	6.2	6.7	6.6	7.0	7.4
12H	5.5	5.9	5.9	6.3	6.7	6.1	6.6	6.6	6.9	7.3
8H 4H	5.7	6.1	6.1	6.5	6.9	6.3	6.7	6.6	7.1	7.4
6H	5.6	6.0	6.1	6.4	6.8	6.3	6.6	6.7	7.0	7.5
8H	5.6	5.9	6.0	6.3	6.8	6.2	6.6	6.7	7.0	7.4
12H	5.5	5.8	6.0	6.3	6.7	6.2	6.5	6.6	6.9	7.4
12H 4H	5.6	6.1	6.0	6.4	6.8	6.2	6.6	6.6	7.0	7.4
6H	5.6	5.9	6.0	6.3	6.8	6.2	6.6	6.7	7.0	7.4
8H	5.5	5.8	6.0	6.3	6.7	6.2	6.5	6.6	6.9	7.4

Variations with the observer position at spacings(CIE Pub.117):		
S = 1.0H	+ 0.4 / - 0.5	+ 0.5 / - 0.7
1.5H	+ 0.4 / - 0.5	+ 1.1 / - 0.6
2.0H	+ 0.3 / - 0.5	+ 0.3 / - 0.4

CIE Pub.117, 1203 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.6)  
 Area: 0.111111 m2

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.3°C  
 Operators:  
 Test Date:2023-08-04

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.080m [K=1.0000]  
 Remarks:

**UTILIZATION FACTORS TABLE**

Test:U:119.82V I:0.1145A P:13.531W PF:0.9866 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1202.63x1 lm		
NAME: ASD-TCS-1D15AC-WH	TYPE:	WEIGHT:
SPEC.: 5000K 90	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING GORP	SUR.:	Shielding Angle:

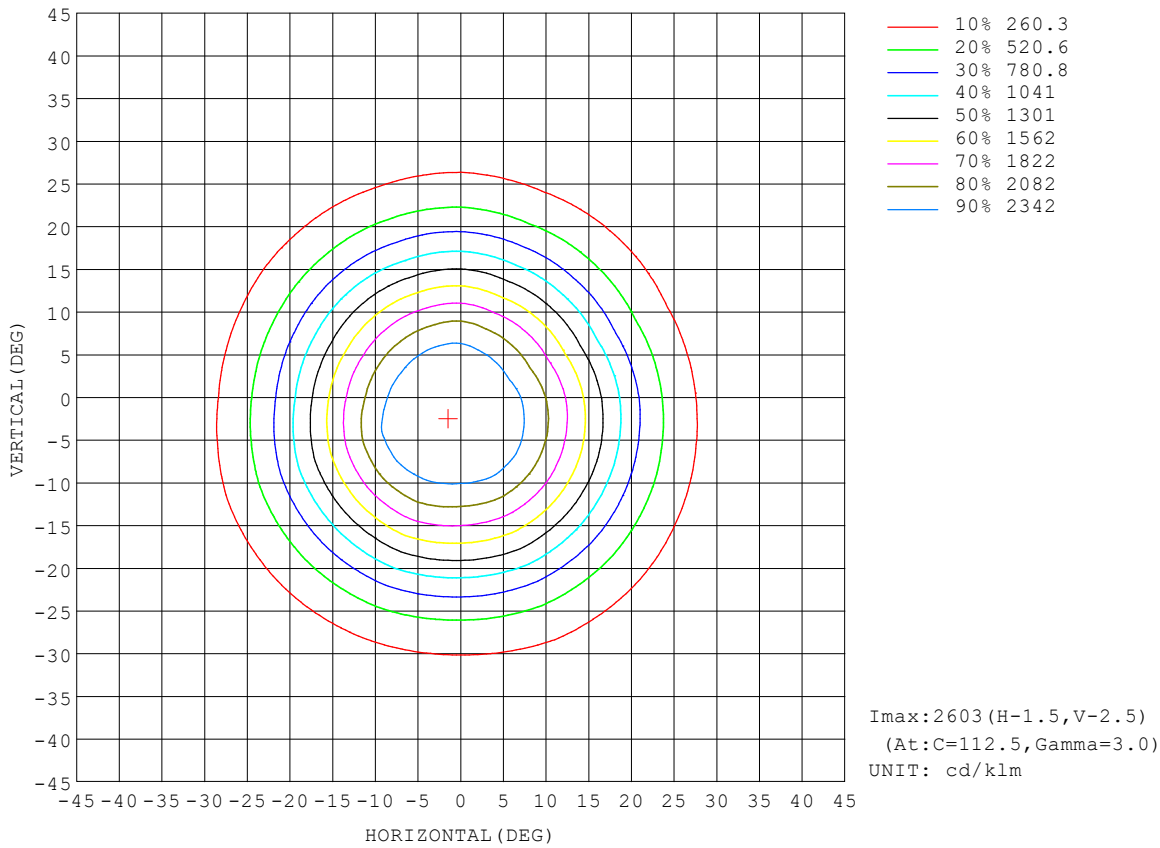
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	81	77	87	81	77	86	80	77	73
0.80	94	89	85	94	88	85	93	88	84	81
1.00	99	93	89	98	93	89	96	93	89	85
1.25	103	97	94	102	97	94	100	96	93	88
1.50	105	101	97	104	100	97	102	98	96	91
2.00	108	104	101	107	103	100	104	101	98	93
2.50	110	106	103	108	105	102	105	102	100	94
3.00	112	108	105	110	107	104	106	104	102	96
4.00	114	111	109	112	109	107	108	106	105	97
5.00	115	113	111	113	111	109	109	107	106	99
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 24.3 °C  
 Operators:  
 Test Date: 2023-08-04

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity: 65.0%  
 Test Distance: 3.080m [K=1.0000]  
 Remarks:

**ISOCANDELA DIAGRAM**

Test:U:119.82V I:0.1145A P:13.531W PF:0.9866 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1202.63x1 lm		
NAME: ASD-TCS-1D15AC-WH	TYPE:	WEIGHT:
SPEC.: 5000K 90	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING GORP	SUR.:	Shielding Angle:



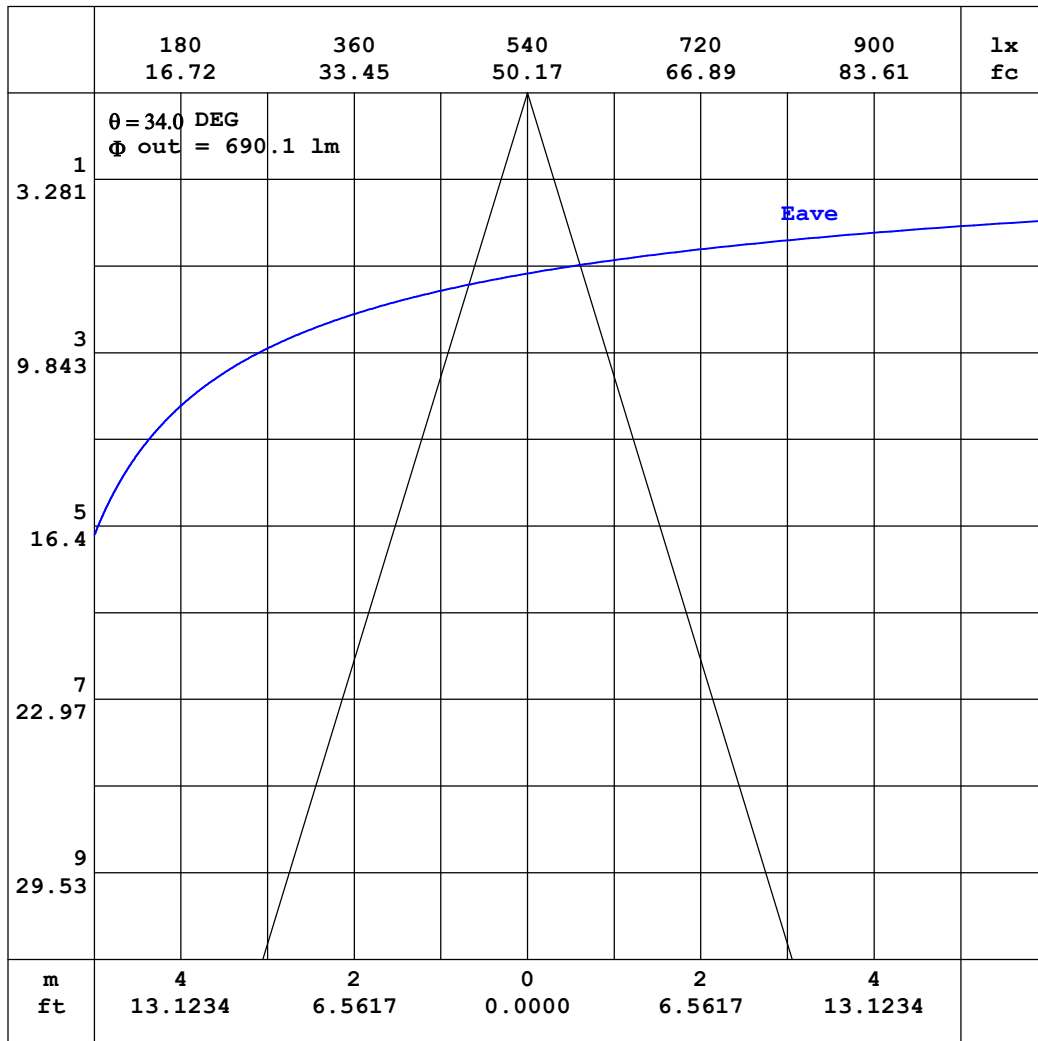
C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.3°C  
 Operators:  
 Test Date:2023-08-04

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.080m [K=1.0000]  
 Remarks:



**AAI CURVES**

Test:U:119.82V I:0.1145A P:13.531W PF:0.9866 Freq:59.98Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1202.63x1 lm		
NAME: ASD-TCS-1D15AC-WH	TYPE:	WEIGHT:
SPEC.: 5000K 90	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING GORP	SUR.:	Shielding Angle:



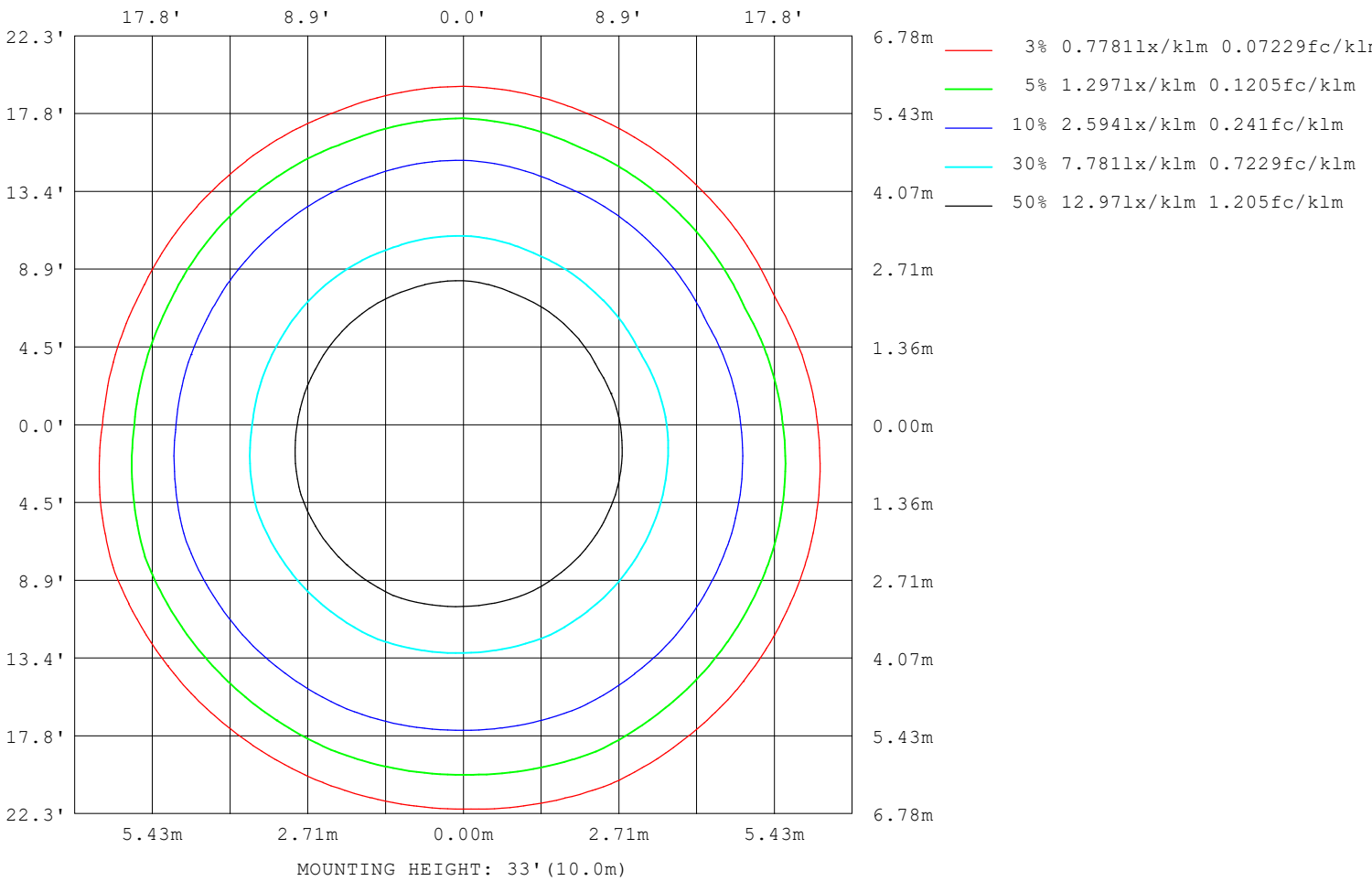
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 24.3°C  
 Operators:  
 Test Date: 2023-08-04

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity: 65.0%  
 Test Distance: 3.080m [K=1.0000]  
 Remarks:

**ISOLUX DIAGRAM**

Test:U:119.82V I:0.1145A P:13.531W PF:0.9866 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1202.63x1 lm		
NAME: ASD-TCS-1D15AC-WH	TYPE:	WEIGHT:
SPEC.: 5000K 90	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING GORP	SUR.:	Shielding Angle:



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.3°C  
 Operators:  
 Test Date:2023-08-04

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.080m [K=1.0000]  
 Remarks:

**LED Avg.L Report**

Test:U:119.82V I:0.1145A P:13.531W PF:0.9866 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1202.63x1 lm		
NAME: ASD-TCS-1D15AC-WH	TYPE:	WEIGHT:
SPEC.: 5000K 90	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING GORP	SUR.:	Shielding Angle:

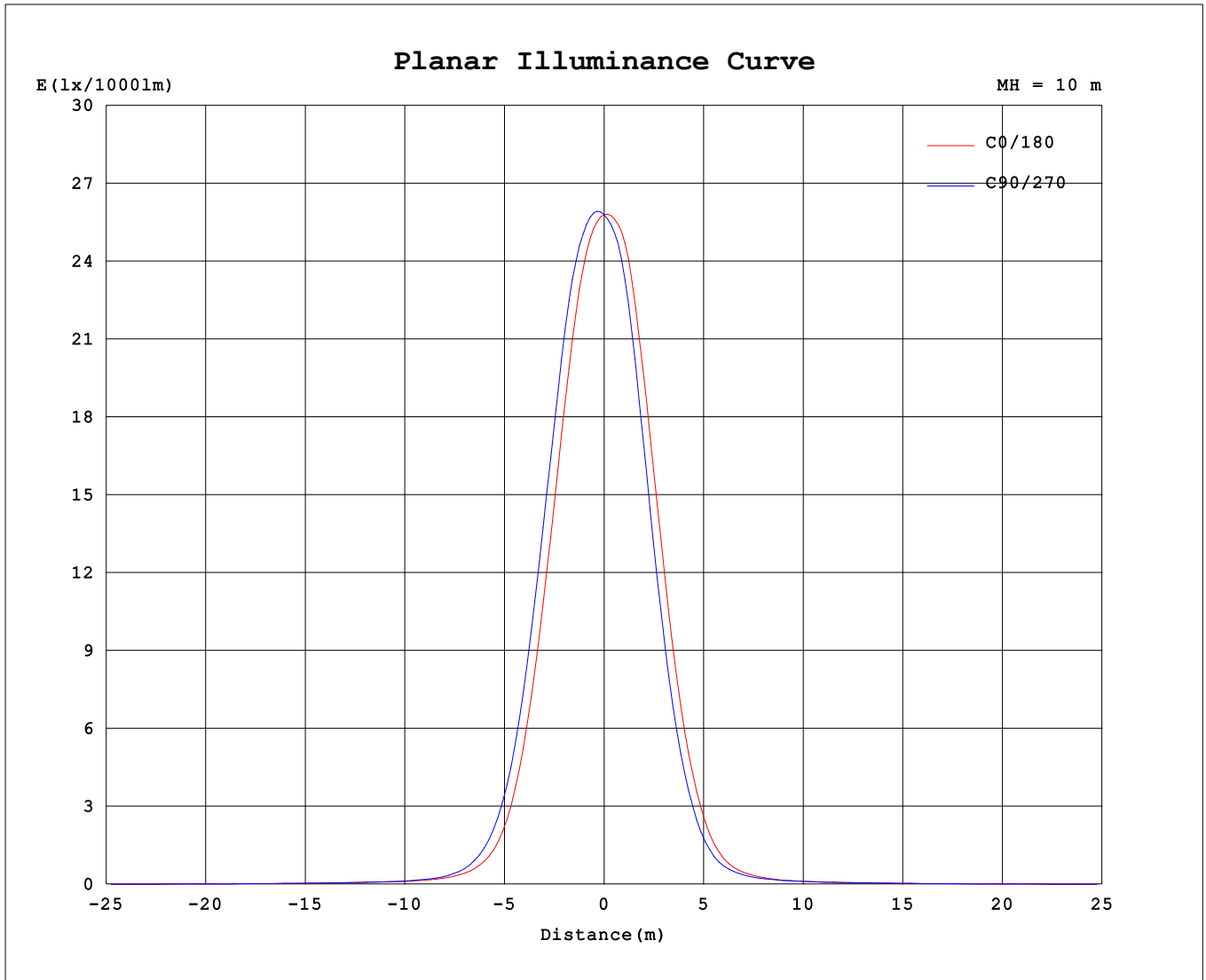
AvgL	cd/m2
L_0~180 (65) av	404
L_0~180 (75) av	193
L_0~180 (85) av	46
L_90~270 (65) av	406
L_90~270 (75) av	196
L_90~270 (85) av	58
L_45 (65) av	435
L_45 (75) av	251
L_45 (85) av	50

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.3℃  
 Operators:  
 Test Date:2023-08-04

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity:65.0%  
 Test Distance:3.080m [K=1.0000]  
 Remarks:

**Planar Illuminance Curve**



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 24.3 °C  
 Operators:  
 Test Date: 2023-08-04

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-SPEX500\_V1 SYSTEM V2.00.460  
 Humidity: 65.0%  
 Test Distance: 3.080m [K=1.0000]  
 Remarks:

