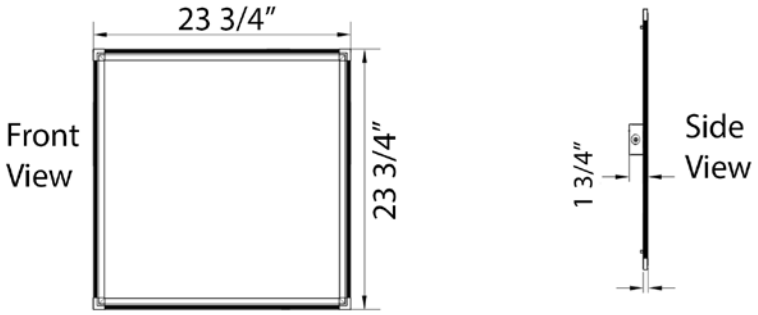
71764
2X2 LED Panel Light
DLC 4.0 Premium

0-10V Dimmable

RoHS

QPL ID #
P94ZEW2C

	Model:	**71764**
OVERALL LAMP PARAMETERS	Input Voltage	120-277 VAC 60HZ
	Input Current	0.33A Max @ 120V; 0.15A Max @ 240V
	Input Power	30W
	Power Factor	PF≥0.95
	Luminance	3,669 LM
	Luminous Efficiency	127 LM/W
	CRI	>80
	Beam Angle	112°
	Main Structure	Aluminium Frame + Polystyrene Lens
LED DRIVER	Output Voltage	12-24 VDC
	Output Current	0..54A
	THD	11% @ 120V; 15% @ 277V
	Driver Efficiency	88%
	Brand	Letron LP Series
LED	LED Manufacturer	Jufei Electronics
	LED Type	2835 SMD
	LED Quantity	238 PCS
	LED Efficacy	130 LM/W
	Color Temperature	4000K
Photocell	-	N/A
LIFESPAN & ENVIRONMENT	Lifespan	50,000+ Hrs.
	Warranty	5 Years
	IP Rating	IP21 Dry Locations
	Operating Temperature	-20℃—+50℃
	Storage Temperature.Humidity	-40℃—+80℃ , 10—90% RH
SAFETY&EMC	Safety Norms	UL1598,UL8750, EN60598, EN61347-2-13, EN62031, EN62471
	Withstand Voltage	I/P-FG: 2121VDC
	Grounding Resistance	25A 100mΩ
	Electromagnetic Compatibility	EN55015, EN61000-2-3, EN61000-3-3, EN61547
OTHERS	Dimension	Pls refer to attached dimension drawing
	Net Weight	0.6KG
	Gross Weight	0.8KG
	Q'ty / Carton纸箱	4 PCS
	Volume	0.52Cbm/carton
	Housing Color	White


23 3/4″
Front
View
23 3/4″
1 3/4″
Side
View

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Total pages 15

Test report of
IES LM-79-08
Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Applicant:
Morris Products Inc.

Address:
53 Carey rd. Queensbury, NY 12804

For Product:
2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces

Model No.:
71763, 71764, 71765

Test laboratory: Shenzhen Belling Efficiency Testing Lab., 1/F., Building 1, 1F, No.1 building, Meibaohe industrial park, Dalang street, Shenzhen, Guangdong Prov.518101, China.

Cherie . Tang

Jasonzhou

Complied by: Cherie Tang **Review by: Jason zhou**

Project Engineer **Technical Manager**

Note: This test report is perpared for the customer shown above and for the device described herein. It may not be duplicated or use in part without prior written consent from Shenzhen Belling Efficiency Testing Lab. This report must not be used by the customer to claim product certification, approval, or endorsement By NVLAP, NIST, or any agency of the Federal Government.

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
71763	3000K	3616.248	29.11	124.227
71764	4000K	3668.767 *1	28.93 *2	126.815 *3
71765	5000K	3721.285	28.75	129.436

*1: This value is calculated and the calculation formula is as below:
3668.767=(3721.285-3616.248)/2+3616.248

*2: This value is calculated and the calculation formula is as below:
28.93=(29.11+28.75)/2

*3: This value is calculated and the calcuation formula is as below:
126.815=3668.767/28.93

1 General

1.1 Product Information

Manufacturer	Morris Products Inc.
Manufacturer Address	53 Carey Rd. Queensbury, NY 12804
Brand Name	MORRIS
Luminaire Type	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces
Model Number	71763, 71764, 71765
Rated Inputs	AC 100-277V 50/60Hz
Rated Power	30 W
Nominal CCT	3000K / 5000K
Date of Receipt Samples	2017-02-14

1.2 Standards or methods

- ANSI C78.377-2015:Specifications for the Chromaticity of Solid State Lighting Products
- ANSI C82.77-2002: Harmonic Emission Limits-Related Power Quality Requirements for Lighting Equipment
- CIE Publication No.13.3-1995:Method of Measuring and Specifying Color Rendering of Light Sources
- IESNA LM-79-08 Approved Method: Electric & Photometric Measurement of Solid-state Lighting Products

1.3 Equipment list

Device	Manufacture	Model No.	Serial No.	Calibration due date
Goniophotometeric System	SENSING	GMS-3000	N.A	2017-09-21
AC Power Source	ALL POWER	APW-110N	992257	2017-08-27
Total Luminous Flux Standard Lamp	SENSING	110V/100W	S13100234	2017-09-15
Digital Power Meter	YOKOGAWA	WT310	C2QM02030V	2017-08-29
Integral Sphere	SENSING	SPR-600M	N.A	2017-08-27
Integral Sphere (2M)	SENSING	SD-20	N.A	2017-08-27
Digital Power Meter	YOKOGAWA	WT210	91L929742	2017-08-29
Optical Color and Electrical Measurement System	SENSING	SPR-3000	N.A	2017-08-27
Temperature/humidity/clock	VICTOR	VC230	57636	2017-09-13
Digital Anemometer	TECMAN	TD8901	026141	2017-09-13

Statement of Traceability: Shenzhen Belling Efficiency Testing Lab attests that all calibration has been performed using suitable standards traceable to national primary standards and International System of Unit (SI).

2 Test conducted and method

2.1 Ambient Condition

The ambient temperature in which measurements are being taken was maintained at 25°C ±1°C, the air flow around the sample(s) being tested did not affect the performance.

2.2 Power Supply Characteristics

The AC power supply had a sinusoidal voltage wave shape at the prescribed frequency (60 Hz) such that the RMS summation of the harmonic components does not exceed 3 percent of the fundamental during operation of the test item.

The voltage of AC power supply (RMS voltage) applied to the device under test was regulated to within±0.2 percent under load.

2.3 Seasoning and Stabilization

No seasoning was performed in accordance with IESNA LM-79-08. And before the measurement, the sample was stabilized until the light output and power variations were less than 0.5% in 30 minutes intervals (3 readings, 15 minutes apart).

2.4 Integrating Sphere System

The system includes AC power source, digital power meter, DC power supply, spectrophotometer, and integrating sphere. The integrating sphere system is calibrated by standard light source before measurement. The system and standard light source has been calibrated regularly and traceable to the National Primary Standards. 4π geometry was used during measurement. The product was operated in its intended orientation in application and was recorded in this report.

2.5 Goniophotometer System

The goniophotometer system is calibrated by standard light source before measurement. The standard light source has been calibrated regularly and traceable to the National Primary Standards.

Type C goniophotometer was used for measuring total luminous flux, luminous intensity distribution, and color spatial uniformity. The product was operated in its intended orientation in application and was recorded in this report. The method according to IESNA LM-79-08 following chapter.

3 Test Result Summary

3.1 Integrating Sphere System

3.1.1 Electrical data

Model Number	Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
71763	120.09	60	0.246	29.11	0.986
71764	120.10	60	0.243	28.75	0.986

3.1.2 Additional Test

Test Item	Model	Test Voltage (V)	Frequency (Hz)	Test Result
Power factor	71763	120	60	0.986
		277	60	0.909
	71764	120	60	0.986
		277	60	0.917
Total harmonic distortion	71763	120	60	10.9%
		277	60	15.4%
	71764	120	60	11.7%
		277	60	16.8%
Off state power (W)	71763	120	60	0
	71764	277	60	0

3.1.3 Photometric data

Model Number	Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
71763	3616.248	124.227	2887	81.0	0
71764	3721.285	129.436	4780	80.7	4

3.1.4 Chromaticity Coordinate

Model Number	Duv	x	y	u'	v'
71763	0.0008	0.4464	0.4090	0.2545	0.5247
71764	0.0071	0.3537	0.3728	0.2091	0.4959

3.2 Goniophotometer System

3.2.1 Electrical data

Model Number	Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
71763	120.09	60	0.2428	28.7250	0.9852

3.2.2 Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	S/MH (C0/180)	S/MH (C90/270)	Zonal Lumen in 0-60°(%lm)
3579.74	124.62	1.24	1.22	77.697

4 Test Data

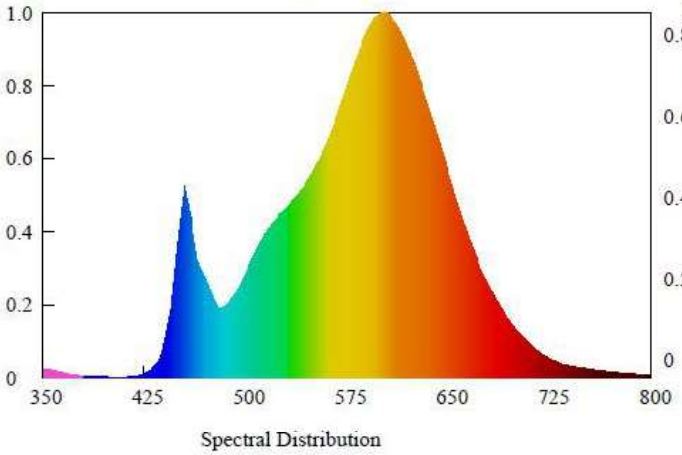
KK-PS-22WW-30-LATZ

Test Condition

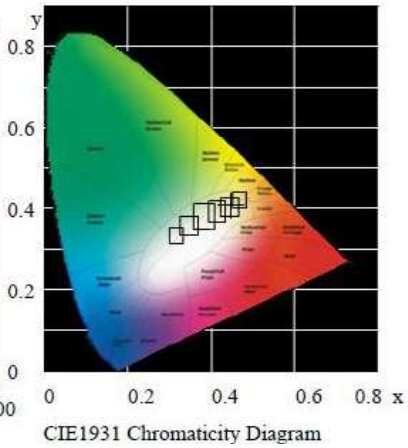
Temperature: 25°C RH: 58%

Spectrum Range: 350-800 nm Scan Step: 5 nm

Spectroradiometric Parameters



Spectral Distribution



CIE1931 Chromaticity Diagram

Chromaticity Coordinates: x=0.4464 y=0.4090 u'=0.2545 v'=0.5247

Correlated Color Temperature: 2887 K Dominant Wavelength: 582.0 nm(E)

Luminous Flux: 3616.248 lm Purity: 0.5680

Chromaticity Difference: 0.0008Duv Peak Wavelength: 489.4 nm

Color Ratio: Kr=46.3% Kg=46.7% Kb=7.1%

Bandwidth: 282.7nm Radiant Flux: 6.986 W

Rendering Index: Ra=81.0

R1=80	R2=92	R3=94	R4=78	R5=80	R6=90	R7=80	R8=55
R9=0	R10=82	R11=77	R12=69	R13=84	R14=97	R15=71	

Electric Parameters

Voltage: 120.09 V Current: 0.246 A

Power Factor: 0.986 Power: 29.11 W

Luminous Efficacy: 124.227 lm/W

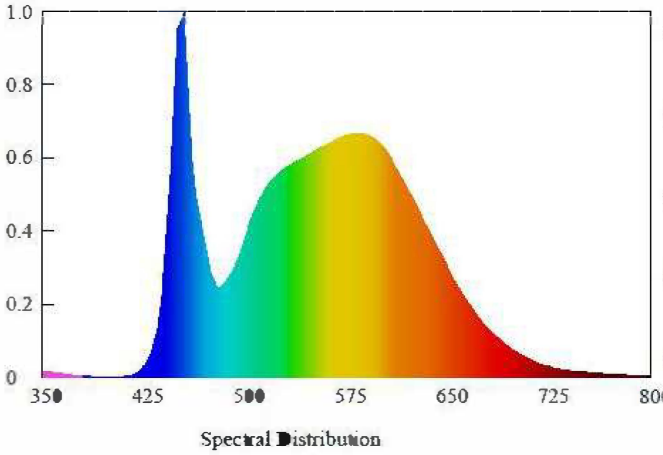
71764

Test Condition

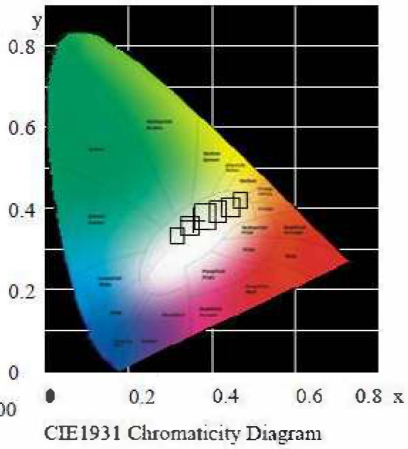
Temperature: 25°C RH: 58%

Spectrum Range: 350-800 nm Scan Step: 5 nm

Spectroradiometric Parameters



Spectral Distribution



CIE1931 Chromaticity Diagram

Chromaticity Coordinates: x=0.3537 y=0.3728 u'=0.2091 v'=0.4959

Correlated Color Temperature: 4780 K Dominant Wavelength: 569.0 nm(E)

Luminous Flux: 3721.285 lm Purity: 0.1796

Chromaticity Difference: 0.0071Duv Peak Wavelength: 448.9 nm

Color Ratio: Kr=33.9% Kg=55.2% Kb=10.9%

Bandwidth: -445.5nm Radiant Flux: 7.405 W

Rendering Index: Ra=80.7

R1=78	R2=87	R3=94	R4=78	R5=77	R6=82	R7=87	R8=63
R9=4	R10=69	R11=77	R12=50	R13=81	R14=97	R15=71	

Electric Parameters

Voltage: 120.1 V Current: 0.243 A

Power Factor: 0.986 Power: 28.75 W

Luminous Efficacy: 129.436 lm/W

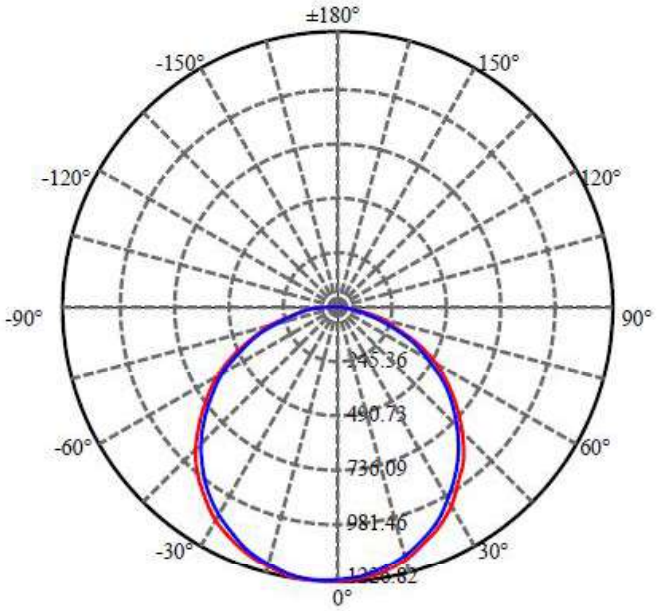
Zonal Flux Diagram

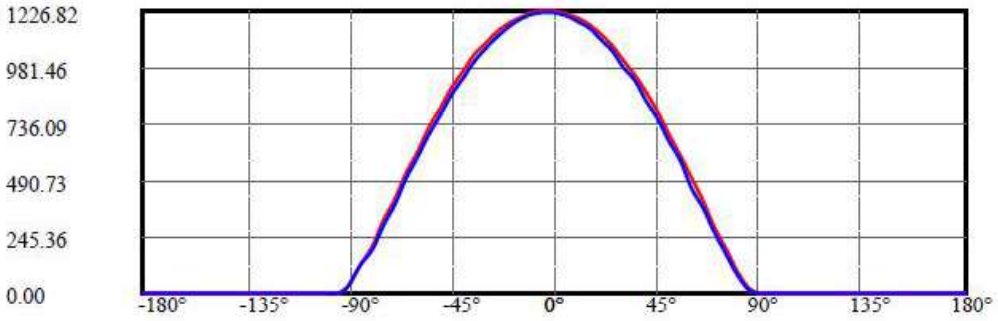
Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1220.209	0.000	0	.000%	.000%
5.0	1214.909	29.116	29.116	.813%	.813%
10.0	1199.762	86.421	115.537	2.414%	3.228%
15.0	1174.059	140.922	256.459	3.937%	7.164%
20.0	1138.522	190.802	447.261	5.330%	12.494%
25.0	1092.819	234.379	681.641	6.547%	19.042%
30.0	1037.731	270.150	951.791	7.547%	26.588%
35.0	973.603	296.918	1248.708	8.294%	34.883%
40.0	901.648	313.816	1562.524	8.766%	43.649%
45.0	821.535	320.216	1882.74	8.945%	52.594%
50.0	734.072	315.709	2198.449	8.819%	61.414%
55.0	641.382	300.642	2499.092	8.398%	69.812%
60.0	572.344	282.257	2781.348	7.885%	77.697%
65.0	441.229	248.223	3029.572	6.934%	84.631%
70.0	338.445	199.342	3228.913	5.569%	90.200%
75.0	239.415	153.000	3381.913	4.274%	94.474%
80.0	145.497	104.864	3486.777	2.929%	97.403%
85.0	70.308	60.388	3547.165	1.687%	99.090%
90.0	15.523	24.612	3571.777	.688%	99.778%
95.0	0.231	4.561	3576.338	.127%	99.905%
100.0	0.231	0.126	3576.463	.004%	99.908%
105.0	0.231	0.124	3576.587	.003%	99.912%
110.0	0.332	0.147	3576.734	.004%	99.916%
115.0	0.462	0.201	3576.935	.006%	99.922%
120.0	0.563	0.249	3577.185	.007%	99.929%
125.0	0.592	0.265	3577.45	.007%	99.936%
130.0	0.707	0.281	3577.731	.008%	99.944%
135.0	0.809	0.305	3578.036	.009%	99.952%
140.0	0.866	0.307	3578.343	.009%	99.961%
145.0	0.924	0.297	3578.641	.008%	99.969%
150.0	0.953	0.276	3578.917	.008%	99.977%
155.0	0.967	0.243	3579.16	.007%	99.984%
160.0	0.982	0.204	3579.364	.006%	99.990%
165.0	0.967	0.161	3579.525	.004%	99.994%
170.0	0.982	0.116	3579.641	.003%	99.997%
175.0	1.068	0.073	3579.714	.002%	99.999%
180.0	1.126	0.026	3579.74	.001%	100.000%

Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





C0/C180:

C90/C270:

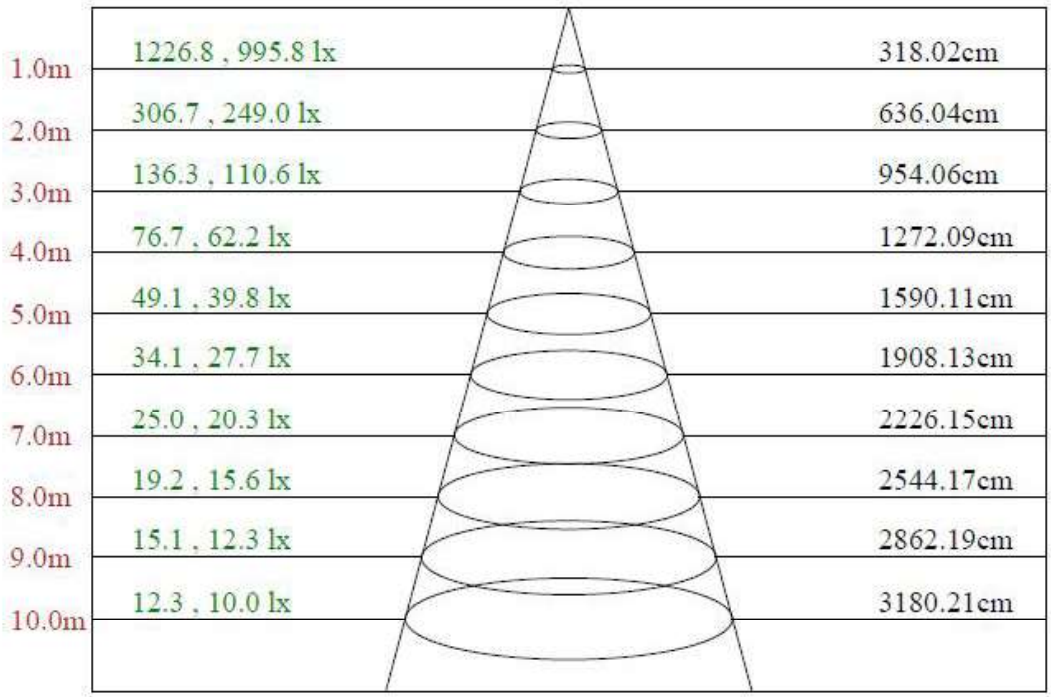
Field angle(10%Imax):C0/180Left:79.9 Right:83.7

:C90/270Left:79.9 Right:82.9

Beam Angle(50%Imax):C0/180Left:55.3 Right:59.2

:C90/270Left:54.1 Right:57.8

Lux distance Curve



Max , Ave Beam angle of C180 plane 115.16

Luminous Intensity Distribution Data

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	1224.74	1213.65	1194.94	1164.44	1126.55	1076.18	1016.81	946.11	874.02
22.5	1221.05	1209.96	1188.47	1158.90	1117.54	1065.56	1005.72	938.25	860.16
45.0	1221.51	1209.49	1186.85	1153.35	1109.22	1057.47	994.86	922.31	847.22
67.5	1220.12	1208.11	1183.85	1149.42	1105.30	1050.31	988.85	917.23	838.91
90.0	1219.20	1207.18	1183.39	1148.96	1104.14	1051.69	986.54	919.31	837.75
112.5	1218.74	1206.03	1183.85	1151.97	1108.76	1057.47	995.78	925.32	846.99
135.0	1218.74	1207.88	1188.70	1158.44	1117.77	1066.94	1007.57	939.64	863.17
157.5	1217.58	1207.18	1189.86	1161.67	1122.39	1075.95	1017.73	949.11	872.87
180.0	1224.74	1226.82	1218.04	1200.02	1173.68	1136.72	1089.59	1032.98	968.29
202.5	1221.05	1223.82	1215.27	1196.79	1167.91	1129.32	1079.88	1023.97	956.28
225.0	1221.51	1222.20	1212.96	1193.32	1163.98	1122.85	1072.03	1011.72	945.19
247.5	1220.12	1221.74	1212.50	1191.94	1159.59	1116.85	1066.94	1005.26	936.64
270.0	1219.20	1220.58	1210.19	1188.24	1157.97	1115.92	1064.17	1002.95	936.17
292.5	1218.74	1218.51	1209.49	1188.47	1157.74	1116.15	1067.41	1007.80	938.95
315.0	1218.74	1217.35	1209.26	1189.63	1161.44	1121.24	1072.95	1016.35	948.42
337.5	1217.58	1218.04	1208.57	1189.39	1162.36	1124.47	1076.88	1019.35	955.35
360.0	1224.74	1213.65	1194.94	1164.44	1126.55	1076.18	1016.81	946.11	874.02

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	788.08	696.36	597.70	502.51	392.54	287.88	190.15	99.12	20.56
22.5	774.45	682.49	587.54	969.44	382.14	281.87	183.45	94.03	17.33
45.0	762.66	670.48	574.13	461.16	374.05	272.40	178.13	88.03	16.87
67.5	753.42	662.62	569.75	460.46	367.82	269.39	172.59	85.25	16.40
90.0	753.65	662.39	569.51	460.46	368.05	266.62	170.28	86.87	15.71
112.5	764.05	672.79	575.98	456.30	375.67	273.78	179.75	89.41	17.79
135.0	777.68	685.50	590.08	519.84	384.45	280.95	185.29	95.65	18.48
157.5	790.62	698.90	600.47	501.82	395.54	290.42	189.22	98.19	21.95
180.0	893.43	808.87	716.69	619.88	514.99	408.48	309.13	204.01	121.53
202.5	880.49	798.71	707.91	609.95	510.37	405.71	300.81	200.77	122.45
225.0	868.71	784.38	697.05	600.70	499.74	396.47	299.89	198.00	121.30
247.5	859.70	779.07	688.96	592.62	492.58	392.77	290.42	195.92	123.14
270.0	860.16	776.06	688.73	592.62	492.12	390.46	290.88	193.84	121.30
292.5	865.01	780.92	691.04	594.93	497.43	394.62	292.73	198.00	121.76
315.0	872.18	788.77	698.20	604.63	502.97	399.24	298.74	199.39	124.99
337.5	880.26	796.86	708.37	610.18	509.21	404.09	299.20	201.47	123.38
360.0	788.08	696.36	597.70	502.51	392.54	287.88	190.15	99.12	20.56

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.23	0.23	0.23	0.23	0.23	0.46	0.46	0.69	0.69
22.5	0.23	0.23	0.23	0.23	0.46	0.46	0.69	0.69	0.69
45.0	0.23	0.23	0.23	0.23	0.46	0.46	0.69	0.69	0.69
67.5	0.23	0.23	0.23	0.23	0.46	0.46	0.69	0.69	0.69
90.0	0.23	0.23	0.23	0.23	0.46	0.46	0.69	0.69	0.69
112.5	0.23	0.23	0.23	0.23	0.46	0.46	0.69	0.69	0.69
135.0	0.23	0.23	0.23	0.23	0.46	0.46	0.69	0.69	0.92
157.5	0.23	0.23	0.23	0.23	0.46	0.46	0.69	0.69	0.69
180.0	29.11	0.23	0.23	0.23	0.23	0.46	0.46	0.46	0.69
202.5	30.96	0.23	0.23	0.23	0.23	0.46	0.46	0.46	0.69
225.0	32.12	0.23	0.23	0.23	0.23	0.46	0.46	0.46	0.69
247.5	30.96	0.23	0.23	0.23	0.23	0.46	0.46	0.46	0.69
270.0	31.88	0.23	0.23	0.23	0.23	0.46	0.46	0.46	0.69
292.5	30.73	0.23	0.23	0.23	0.23	0.46	0.46	0.46	0.69
315.0	31.42	0.23	0.23	0.23	0.23	0.46	0.46	0.46	0.69
337.5	29.34	0.23	0.23	0.23	0.23	0.46	0.46	0.69	0.69
360.0	0.23	0.23	0.23	0.23	0.23	0.46	0.46	0.69	0.69

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
22.5	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.16
45.0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.16
67.5	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.16	1.16
90.0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.16
112.5	0.92	0.92	0.92	0.92	1.16	1.16	0.92	1.16	1.16
135.0	0.92	0.92	0.92	1.16	1.16	1.16	1.16	1.16	1.16
157.5	0.92	0.92	0.92	1.16	1.16	0.92	0.92	1.16	1.16
180.0	0.69	0.69	0.92	0.92	0.92	0.92	0.92	0.92	0.92
202.5	0.69	0.92	0.92	0.92	0.92	1.16	1.16	0.92	0.92
225.0	0.69	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.16
247.5	0.69	0.69	0.92	0.92	0.92	0.92	0.92	0.92	0.92
270.0	0.69	0.69	0.92	0.92	0.92	0.92	0.92	0.92	1.16
292.5	0.69	0.69	0.92	0.92	0.92	0.92	0.92	0.92	0.92
315.0	0.69	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
337.5	0.69	0.92	0.92	0.92	0.92	1.16	1.16	0.92	1.16
360.0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92

C/γ(°)	180.0
0.0	0.92
22.5	1.16
45.0	1.16
67.5	1.16
90.0	1.16
112.5	1.16
135.0	1.16
157.5	1.16
180.0	0.92
202.5	1.16
225.0	1.16
247.5	1.16
270.0	1.16
292.5	1.16
315.0	1.16
337.5	1.16
360.0	0.92

Photo Document

****End of test report****