



71750
1X4 LED Panel Light



RoHS

0-10V Dimmable



QPL ID #
PKVFHG9



Model:		71750
OVERALL LAMP PARAMETERS	Input Voltage	120-277 VAC 60HZ
	Input Current	0.33A Max @ 120V; 0.15A Max @ 240V
	Input Power	40W
	Power Factor	PF≥0.95
	Luminance	4,205 LM
	Luminous Efficiency	101 LM/W
	CRI	>80
	Beam Angle	112°
	Main Structure	Aluminium Frame + Polystyrene Lens
LED DRIVER	Output Voltage	12-24 VDC
	Output Current	0.54A
	Driver Efficiency	88%
	Driver Brand	Weipeng
LED	LED Manufacturer	Runlite
	LED Type	2835 SMD
	LED Quantity	238 PCS
	LED Efficacy	110 LM/W
	Color Temperature	3000K
Photocell	-	N/A
LIFESPAN & ENVIRONMENT	Lifespan	50,000+ Hrs.
	Warranty	5 Years
	IP Rating	IP21 Dry Locations
	Operating Temperature	-20℃---40℃
	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



Shenzhen Belling Efficiency Testing Lab



NVLAP LAB CODE 600102-0

Report No.:BL170307003-9

Date of issue 2017-03-08

Version 1.0

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:

1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces

Model No.:

71750, 71751, 71752

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

Jason Zhou

Complied by: Cherie Tang

Review by: Jason Zhou

Project Engineer

Technical Manager

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used 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)
71750	3000K	4204.486	41.58	101.118
71751	4000K	4328.005 * ¹	41.77 * ²	103.628 * ³
71752	5000K	4451.524	41.95	106.115

*1: This value is calculated and the calculation formula is as below:

$$4328.005 = (4451.524 - 4204.486) / 2 + 4204.486$$

*2: This value is calculated and the calculation formula is as below:

$$41.77 = (41.58 + 41.95) / 2$$

*3: This value is calculated and the calculation formula is as below:

$$103.628 = 4328.005 / 41.77$$



1 General

1.1 Product Information

Manufacturer	Morris Products Inc.
Manufacturer Address	53 Carey Rd. Queensbury, NY 12804
Brand Name	MORRIS
Luminaire Type	1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
Model Number	71750
Rated Inputs	AC 100-277V 50/60Hz
Rated Power	40 W
Nominal CCT	3000K / 5000K
Date of Receipt Samples	2017-01-05

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
Goniophotometric 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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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
71750	120.02	60	0.349	41.58	0.992
71751	120.11	60	0.355	41.95	0.985

3.1.2 Additional Test

Test Item	Model	Test Voltage (V)	Frequency (Hz)	Test Result
Power factor	71750	120	60	0.992
		277	60	0.918
	71751	120	60	0.985
		277	60	0.925
Total harmonic distortion	71750	120	60	11.1%
		277	60	16.4%
	71751	120	60	12.3%
		277	60	17.1%
Off state power (W)	71750	120	60	0
	71751	277	60	0

3.1.3 Photometric data

Model Number	Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
71750	4204.486	101.118	2914	83.7	12
71751	4451.524	106.115	4753	80.7	-4

3.1.4 Chromaticity Coordinate

Model Number	Duv	x	y	u'	v'
71750	-0.0014	0.4410	0.4018	0.2542	0.5211
71751	0.0072	0.3546	0.3739	0.2093	0.4965



3.2 Goniophotometer System

3.2.1 Electrical data

Model Number	Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
71750	120	60	0.3421	40.73	0.9924

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)
4098.28	100.62	1.24	1.08	76.517



4 Test Data

KK-PS-14WW-40-LARZ

Test Condition

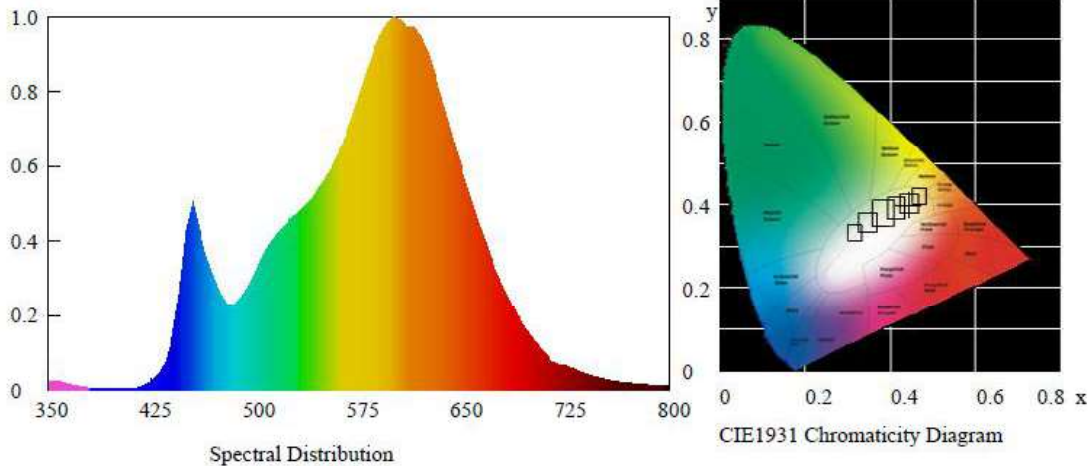
Temperature: 25°C

RH: 58%

Spectrum Range: 350-800 nm

Scan Step: 5 nm

Spectroradiometric Parameters



Chromaticity Coordinates: $x=0.4410$ $y=0.4018$ $u'=0.2542$ $v'=0.5211$

Correlated Color Temperature: 2914 K

Dominant Wavelength: 582.0 nm(E)

Luminous Flux: 4204.486 lm

Purity: 0.5327

Chromaticity Difference: -0.0014Duv

Peak Wavelength: 562.5 nm

Color Ratio: $K_r=46.3\%$ $K_g=46.1\%$ $K_b=7.6\%$

Bandwidth: 188.7nm

Radiant Flux: 9.789 W

Rendering Index: $R_a=83.7$

$R_1=83$ $R_2=94$ $R_3=93$ $R_4=81$ $R_5=84$ $R_6=94$ $R_7=81$ $R_8=59$

$R_9=12$ $R_{10}=87$ $R_{11}=82$ $R_{12}=77$ $R_{13}=87$ $R_{14}=97$ $R_{15}=75$

Electric Parameters

Voltage: 120.02 V

Current: 0.349 A

Power Factor: 0.992

Power: 41.58 W

Luminous Efficacy: 101.118 lm/W

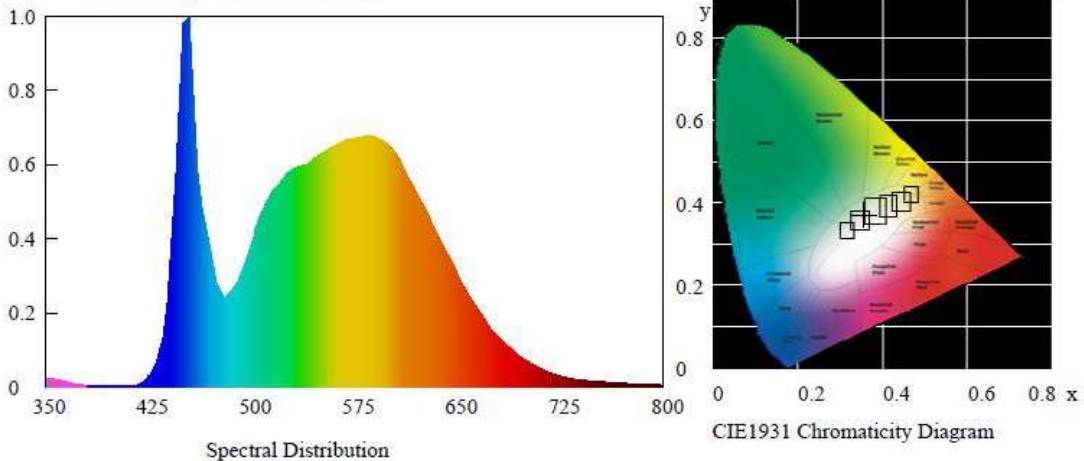
**KK-PS-14EW-40-LARZ****Test Condition**

Temperature: 25°C

RH: 58%

Spectrum Range: 350-800 nm

Scan Step: 5 nm

Spectroradiometric ParametersChromaticity Coordinates: $x=0.3546$ $y=0.3739$ $u'=0.2093$ $v'=0.4965$

Correlated Color Temperature: 4753 K

Dominant Wavelength: 569.0 nm(E)

Luminous Flux: 4451.524 lm

Purity: 0.1852

Chromaticity Difference: 0.0072Duv

Peak Wavelength: 448.9 nm

Color Ratio: $K_r=33.9\%$ $K_g=55.2\%$ $K_b=10.9\%$

Bandwidth: -445.3nm

Radiant Flux: 7.56 W

Rendering Index: $R_a=80.7$ $R_1=78$ $R_2=87$ $R_3=94$ $R_4=78$ $R_5=77$ $R_6=81$ $R_7=87$ $R_8=63$ $R_9=-4$ $R_{10}=69$ $R_{11}=77$ $R_{12}=50$ $R_{13}=81$ $R_{14}=97$ $R_{15}=71$ **Electric Parameters**

Voltage: 120.11 V

Current: 0.355 A

Power Factor: 0.985

Power: 41.95 W

Luminous Efficacy: 106.115 lm/W

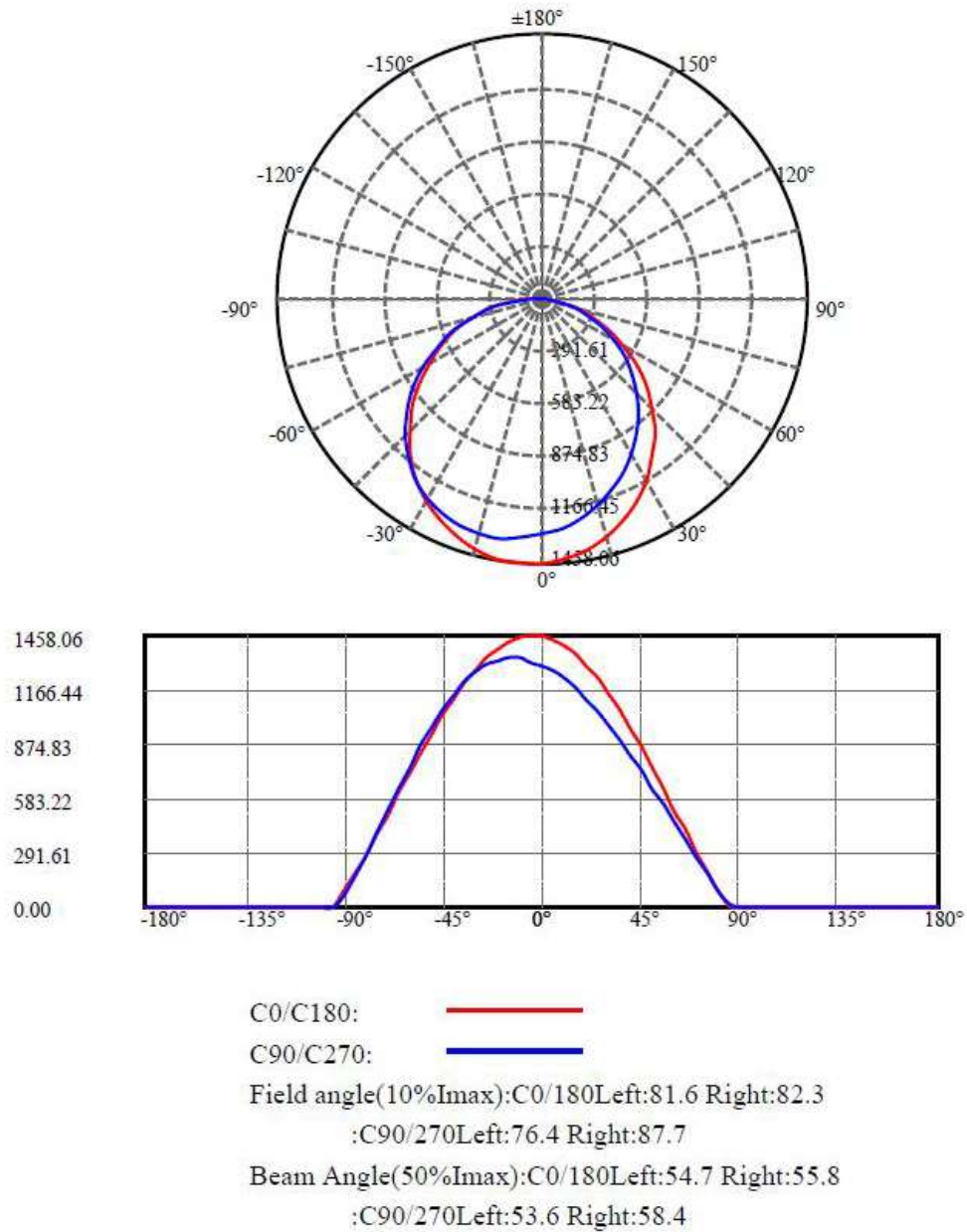
**Zonal Flux Diagram**

Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1375.239	0.000	0	.000%	.000%
5.0	1370.233	32.830	32.83	.801%	.801%
10.0	1353.903	97.530	130.36	2.380%	3.181%
15.0	1324.498	159.096	289.456	3.882%	7.063%
20.0	1283.478	215.342	504.798	5.254%	12.317%
25.0	1231.588	264.433	769.231	6.452%	18.770%
30.0	1169.102	304.749	1073.98	7.436%	26.206%
35.0	1096.329	334.880	1408.861	8.171%	34.377%
40.0	1014.953	353.858	1762.719	8.634%	43.011%
45.0	925.040	361.113	2123.832	8.811%	51.822%
50.0	828.338	356.530	2480.362	8.699%	60.522%
55.0	727.829	340.909	2821.271	8.318%	68.840%
60.0	620.775	314.615	3135.887	7.677%	76.517%
65.0	512.442	278.577	3414.464	6.797%	83.314%
70.0	402.634	234.860	3649.323	5.731%	89.045%
75.0	294.268	185.420	3834.743	4.524%	93.570%
80.0	189.045	132.596	3967.339	3.235%	96.805%
85.0	92.344	79.555	4046.894	1.941%	98.746%
90.0	31.478	36.057	4082.951	.880%	99.626%
95.0	1.004	9.586	4092.537	.234%	99.860%
100.0	0.632	0.451	4092.988	.011%	99.871%
105.0	0.664	0.345	4093.333	.008%	99.879%
110.0	0.697	0.356	4093.688	.009%	99.888%
115.0	0.859	0.392	4094.08	.010%	99.897%
120.0	0.908	0.425	4094.506	.010%	99.908%
125.0	1.053	0.449	4094.955	.011%	99.919%
130.0	1.118	0.469	4095.424	.011%	99.930%
135.0	1.199	0.467	4095.89	.011%	99.942%
140.0	1.199	0.444	4096.334	.011%	99.952%
145.0	1.264	0.409	4096.744	.010%	99.962%
150.0	1.345	0.382	4097.125	.009%	99.972%
155.0	1.409	0.347	4097.473	.008%	99.980%
160.0	1.377	0.292	4097.765	.007%	99.987%
165.0	1.345	0.225	4097.99	.005%	99.993%
170.0	1.361	0.161	4098.151	.004%	99.997%
175.0	1.409	0.099	4098.25	.002%	99.999%
180.0	1.361	0.033	4098.283	.001%	100.000%

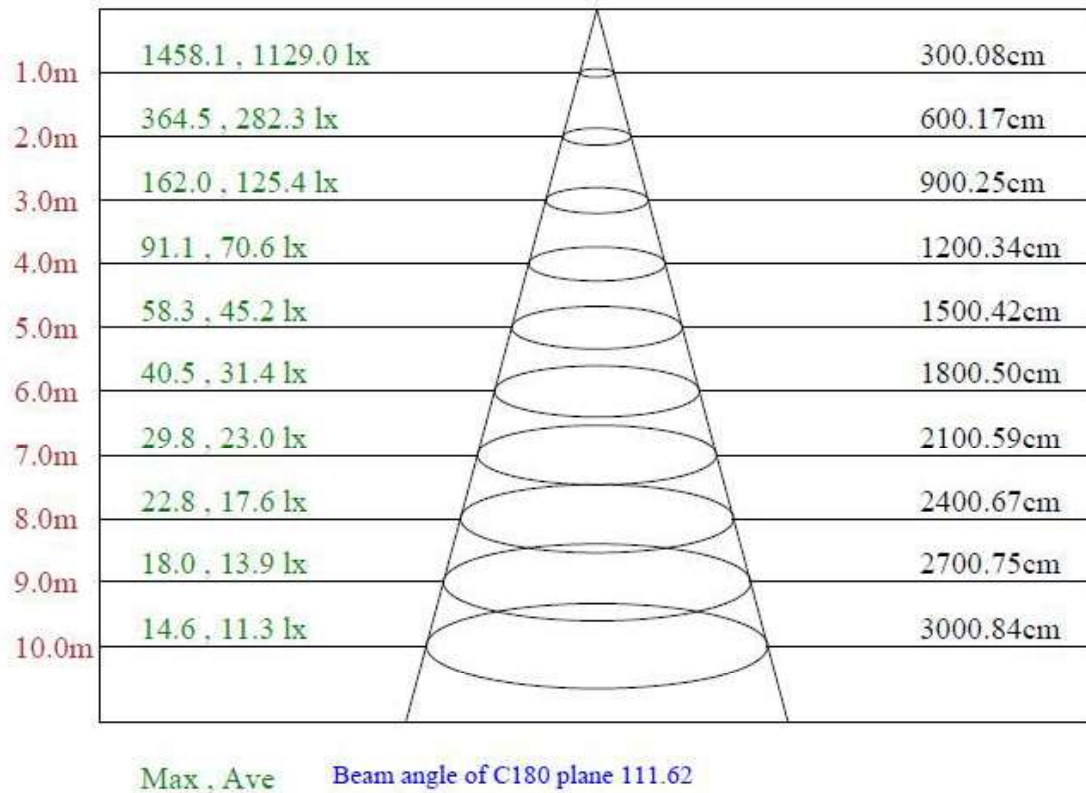
**Luminous Intensity Distribution Diagram**

Light Distribution Curve [Unit:cd]





Lux distance Curve



**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	1453.65	1434.21	1401.81	1354.89	1298.38	1227.36	1146.23	1056.80	961.93
22.5	1423.84	1396.36	1358.26	1306.94	1244.99	1172.15	1092.31	1008.59	915.01
45.0	1402.33	1372.52	1330.27	1278.42	1215.70	1147.26	1069.50	983.70	893.24
67.5	1327.16	1303.57	1265.20	1216.99	1157.63	1091.79	1016.36	936.27	853.06
90.0	1294.24	1264.17	1227.36	1176.04	1116.68	1051.87	977.22	898.94	819.36
112.5	1328.19	1298.90	1254.84	1201.70	1143.12	1073.65	1002.62	921.49	838.54
135.0	1385.74	1353.85	1313.68	1261.83	1203.25	1133.79	1056.80	974.63	885.72
157.5	1386.77	1361.89	1326.90	1277.65	1218.03	1149.60	1075.20	988.63	902.31
180.0	1453.65	1458.06	1448.47	1424.36	1387.29	1336.49	1274.80	1206.36	1120.57
202.5	1423.84	1436.28	1434.99	1418.92	1389.37	1345.30	1290.61	1221.66	1141.56
225.0	1402.33	1424.36	1430.06	1422.03	1400.77	1365.52	1316.01	1255.35	1182.26
247.5	1327.16	1360.59	1374.07	1369.15	1356.45	1332.34	1286.46	1229.17	1160.48
270.0	1294.24	1311.08	1336.49	1335.97	1322.75	1301.23	1264.43	1209.22	1141.04
292.5	1328.19	1346.08	1357.22	1366.56	1352.04	1327.16	1289.31	1234.10	1161.26
315.0	1385.74	1403.62	1407.77	1401.03	1379.52	1344.26	1296.83	1234.36	1160.22
337.5	1386.77	1398.18	1395.07	1379.52	1349.71	1305.64	1250.95	1182.00	1102.68
360.0	1453.65	1434.21	1401.81	1354.89	1298.38	1227.36	1146.23	1056.80	961.93

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	857.47	747.82	635.32	514.79	412.92	300.94	192.08	89.43	5.18
22.5	813.40	713.09	609.14	502.87	395.81	292.39	189.22	92.28	12.18
45.0	799.66	699.35	596.70	493.02	390.63	286.17	186.11	91.50	15.55
67.5	763.37	665.91	574.67	477.72	377.15	277.87	184.82	92.28	18.15
90.0	730.20	637.92	555.75	460.88	366.01	270.10	181.19	93.83	18.15
112.5	747.56	660.47	569.23	472.02	376.37	280.21	186.11	97.72	19.70
135.0	795.00	698.83	599.29	497.17	396.85	294.46	198.56	105.50	20.48
157.5	807.70	712.05	610.18	507.27	403.59	303.02	202.18	107.31	21.26
180.0	1028.55	930.56	827.40	722.68	611.74	501.05	391.15	282.02	177.04
202.5	1054.47	956.74	853.06	743.93	633.51	517.12	399.70	289.28	179.37
225.0	1093.35	996.40	894.28	780.48	661.25	537.86	423.03	297.83	181.19
247.5	1082.98	987.33	885.72	771.93	656.32	535.27	410.85	293.43	173.93
270.0	1059.91	968.15	867.84	756.12	635.58	521.53	398.67	278.65	164.60
292.5	1082.72	988.89	881.83	769.34	650.88	527.75	402.04	284.35	162.01
315.0	1070.02	971.78	867.58	753.52	633.25	515.05	392.70	271.65	158.64
337.5	1014.29	918.12	817.29	708.68	597.22	481.35	369.89	257.66	150.08
360.0	857.47	747.82	635.32	514.79	412.92	300.94	192.08	89.43	5.18

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.78	0.52	0.78	0.78	0.78	1.04	1.04	1.30	1.30
22.5	0.78	0.78	0.78	0.78	0.78	1.04	1.04	1.30	1.30
45.0	0.78	0.78	0.78	0.78	0.78	1.04	1.04	1.30	1.30
67.5	0.78	0.78	0.78	0.78	0.78	1.04	1.04	1.04	1.30
90.0	0.78	0.52	0.78	0.78	0.78	1.04	1.04	1.04	1.30
112.5	0.52	0.52	0.52	0.78	0.78	1.04	1.04	1.30	1.30
135.0	0.52	0.52	0.78	0.78	0.78	1.04	1.04	1.30	1.30
157.5	0.78	0.78	0.78	0.78	0.78	1.04	1.04	1.30	1.30
180.0	80.61	1.56	0.52	0.78	0.78	0.78	0.78	1.04	1.04
202.5	75.95	2.07	0.52	0.52	0.78	0.78	0.78	1.04	1.04
225.0	73.88	3.37	0.52	0.52	0.52	0.78	0.78	1.04	1.04
247.5	62.99	1.30	0.52	0.52	0.52	0.78	0.78	0.78	1.04
270.0	55.21	0.52	0.52	0.52	0.52	0.52	0.78	0.78	0.78
292.5	51.06	0.52	0.52	0.52	0.52	0.52	0.78	0.78	0.78
315.0	50.03	0.78	0.52	0.52	0.52	0.52	0.78	0.78	0.78
337.5	48.21	0.78	0.52	0.52	0.78	0.78	0.78	0.78	1.04
360.0	0.78	0.52	0.78	0.78	0.78	1.04	1.04	1.30	1.30



C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	1.30	1.30	1.56	1.56	1.56	1.56	1.30	1.56	1.56
22.5	1.30	1.30	1.56	1.56	1.56	1.56	1.56	1.56	1.56
45.0	1.30	1.30	1.30	1.56	1.56	1.30	1.30	1.30	1.56
67.5	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
90.0	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.56
112.5	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
135.0	1.30	1.30	1.30	1.56	1.56	1.30	1.30	1.30	1.30
157.5	1.30	1.30	1.30	1.56	1.56	1.56	1.30	1.30	1.56
180.0	1.30	1.30	1.30	1.30	1.56	1.56	1.56	1.56	1.56
202.5	1.30	1.30	1.30	1.30	1.56	1.56	1.56	1.56	1.56
225.0	1.04	1.04	1.30	1.30	1.30	1.30	1.30	1.30	1.30
247.5	1.04	1.04	1.04	1.30	1.30	1.30	1.30	1.30	1.30
270.0	1.04	1.04	1.04	1.04	1.30	1.30	1.30	1.30	1.30
292.5	1.04	1.04	1.04	1.04	1.30	1.30	1.30	1.30	1.30
315.0	1.04	1.04	1.04	1.30	1.30	1.30	1.30	1.30	1.30
337.5	1.04	1.04	1.30	1.30	1.30	1.30	1.30	1.30	1.30
360.0	1.30	1.30	1.56	1.56	1.56	1.56	1.30	1.56	1.56

C/ γ (°)	180.0
0.0	1.56
22.5	1.56
45.0	1.30
67.5	1.30
90.0	1.30
112.5	1.30
135.0	1.30
157.5	1.30
180.0	1.56
202.5	1.56
225.0	1.30
247.5	1.30
270.0	1.30
292.5	1.30
315.0	1.30
337.5	1.30
360.0	1.56



Photo Document



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