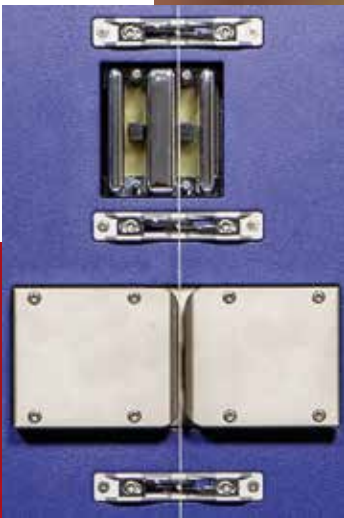


Textechno
textile testing technology

Cotton
control



COVAMAT S **COVATEST+**

Automatic and Semi-automatic
Capacitive Evenness and Hairiness Testers
for Spun Yarns, Rovings and Slivers

Evenness and Hairiness Testing

Testing of evenness and determination of imperfections are essential for staple fibre spinning mills to control the quality of the slivers, rovings, and yarns during the complete spinning process. A spectrogram analysis of the mass distribution over the sample length gives important information to optimize the carding-, drawing-, combing- and spinning process. Textechno's innovative one-slot capacitive evenness sensor design for yarns allows for the measurement of all above-mentioned parameters at high testing speeds. In combination with the yarn **Hairiness** module (including total hairiness, yarn diameter, and hair length classification) **COVAMAT S** and **COVATEST+** are perfect instruments for effective quality control and quality assurance. The instruments are designed to perform yarn evenness and hairiness tests according to all accepted standards, e.g. ASTM D1425/D1425M-14, ASTM D5647 and ISO 16549. As another outstanding feature, the testing of yarns can be carried out simultaneously to the evenness testing of slivers and rovings which are measured in a separate testing zone (**COVASLIVE** module, left side of the instrument).

The fully automatic model **COVAMAT S** is equipped with a 24-position package changer. The semi-automatic model **COVATEST+** is available as a price-sensitive alternative without package changer and threading arm if no automation is required.



COVAMAT S total view

The testers can be used for both short- and long-staple spun yarns as well as for combed/worsted spun yarns. For evenness tests on tops an additional **external sensor** is available on request.

The multi-language Windows-based software stores all test data in a database and allows for repeated evaluation and generation of test protocols.

System components

- Automatic package changer with 24 positions and automatic threading arm (**COVAMAT S**)
- Creel for slivers and rovings
- Sensor for humidity and temperature for laboratory atmosphere monitoring

Test methods

- Measurement of mass variation of yarns at constant speed and pretension
- Measurement of yarn imperfections (thin places, thick places, neps)
- Measurement of total yarn hairiness, diameter
- Hair length classification
- Measurement of mass variation of slivers and rovings (**COVASLIVE** module)

Test performance

- Testing speed for yarns: up to 800m/min
- Yarn count measuring range: 5 – 150 tex
- Testing speed for slivers / rovings: up to 100 m/min
- Sliver / roving count measuring range: up to 8 ktex

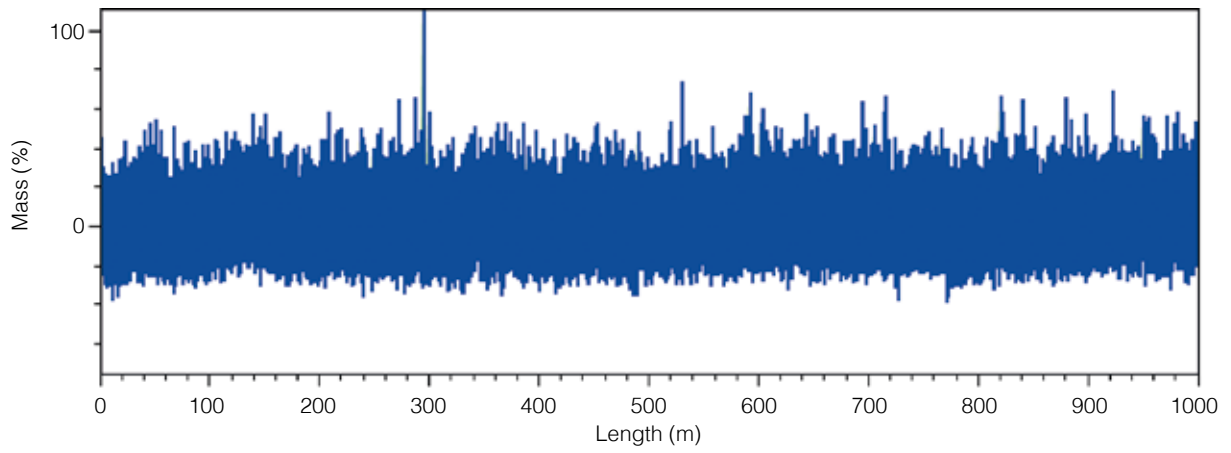


Automatic yarn insertion

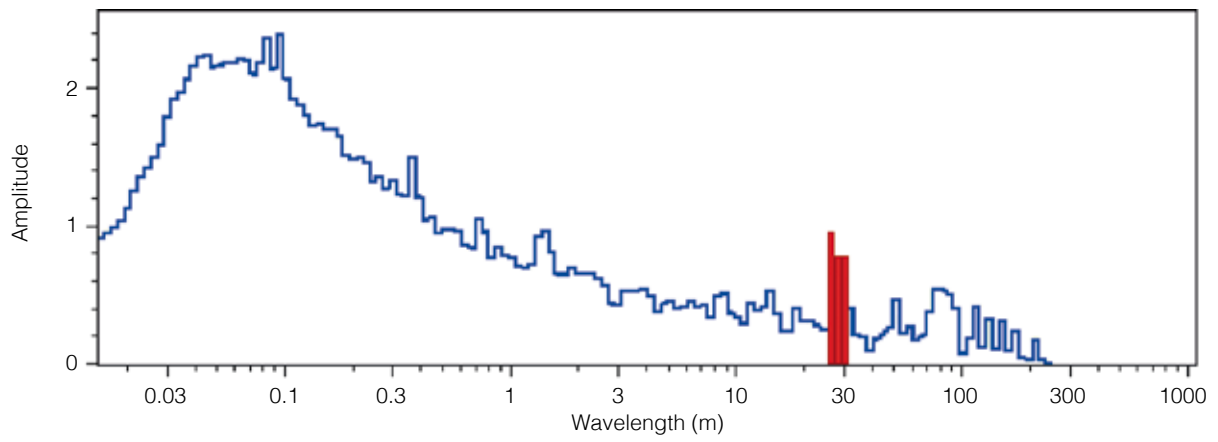


Simultaneous testing of yarn and sliver

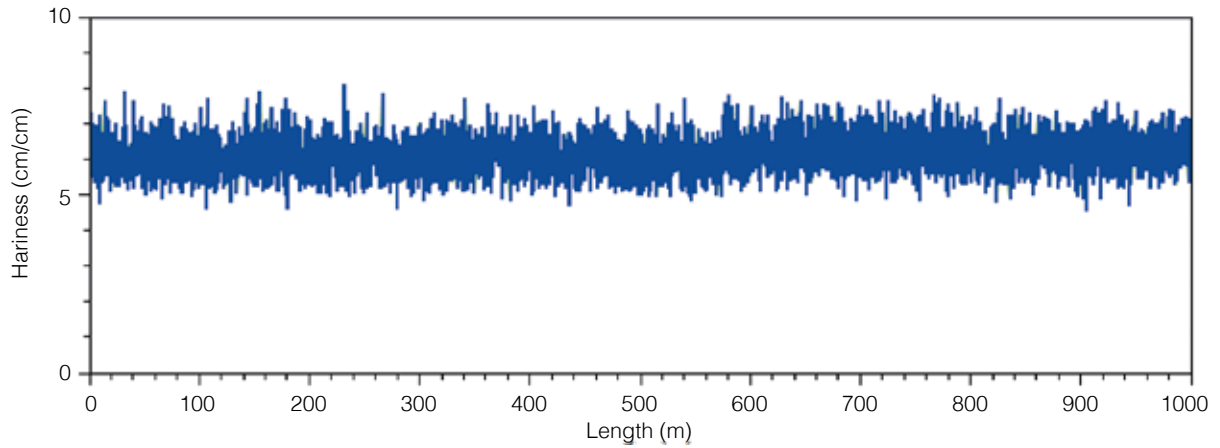
Mass variation diagram



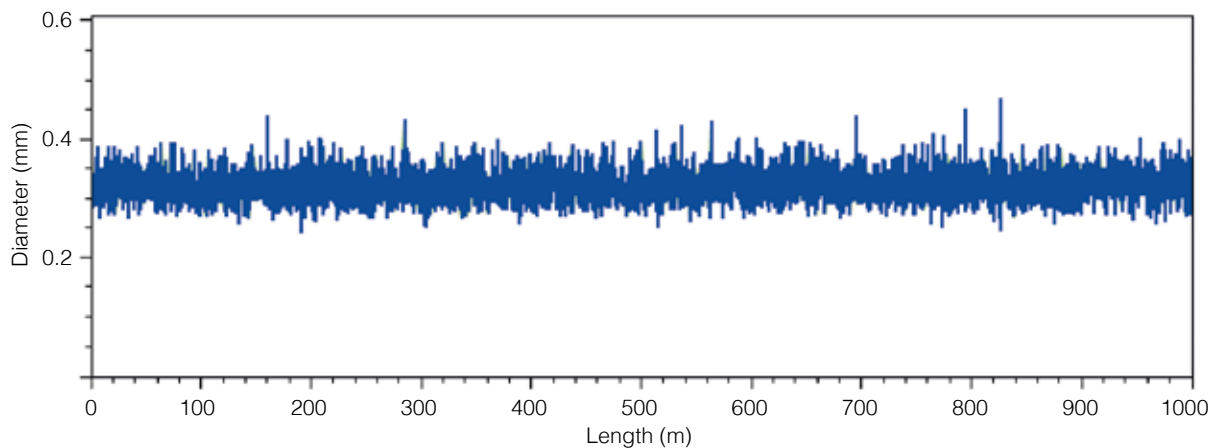
Mass variation spectrogram



Total hairiness diagram



Optical diameter diagram



**Statistical evaluation of evenness including thin places (TN),
thick places (TK) and neps (NP)**

TestNo	CV	U	CVm1	CVm2	CVm3	InertCV	HalfInertCV	TN30	TN40	TN50	TK35	TK50	TK70	TK100	NP140	NP200	NP280	NP400
	%	%	%	%	%	%	%	/km	/km	/km	/km	/km	/km	/km	/km	/km	/km	/km
			1m	2m	5m													
1	10.80	8.57	3.54	3.22	2.94	2.43	2.87	406	5	0	144	7	1	0	184	27	7	1
2	10.96	8.69	3.03	2.67	2.32	1.70	2.22	407	4	0	146	18	0	0	159	23	5	0
3	10.76	8.54	3.17	2.82	2.52	1.98	2.45	366	7	0	136	8	1	1	190	27	7	0
4	10.91	8.67	3.06	2.72	2.42	1.92	2.33	328	8	0	106	10	0	0	172	28	7	0
5	11.38	9.04	3.96	3.55	3.02	2.38	2.88	505	6	0	169	12	1	0	192	18	0	0
mean	10.96	8.70	3.35	3.00	2.64	2.08	2.55	402	6	0	140	11	1	0	179	25	5	0
s	0.25	0.20	0.40	0.38	0.32	0.31	0.31	66	2	0	23	4	1	0	14	4	3	0
cv	2.255	2.292	11.812	12.606	11.953	15.045	12.065	16.4	26.4	∞	16.2	39.6	91.3	223.6	7.7	16.9	58.3	223.6
min	10.76	8.54	3.03	2.67	2.32	1.70	2.22	328	4	0	106	7	0	0	159	18	0	0
max	11.38	9.04	3.96	3.55	3.02	2.43	2.88	505	8	0	169	18	1	1	192	28	7	1
q95	0.31	0.25	0.49	0.47	0.39	0.39	0.38	82	2	0	28	5	1	1	17	5	4	1
n	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

**Statistical evaluation of total hairiness (H, sH), optical diameter (DIA)
and hair length classification (S3u etc.)**

TestNo	H	sH	DIA	S3u	S1p2u	S3	S4p5u	S6p7u	S8p9u	S10u	S4	S5	S6	S7	S8	S9	S10
	cm/cm	cm/cm	mm	/100m	/100m	/100m	/100m	/100m	/100m	/100m	/100m	/100m	/100m	/100m	/100m	/100m	/100m
1	6.07	0.49	0.32	8841	18128	3431	3408	1180	488	333	2148	1260	749	431	296	192	116
2	6.23	0.53	0.32	9998	18483	3532	3886	1461	642	476	2414	1472	887	573	387	255	153
3	6.13	0.52	0.32	9374	17796	3413	3582	1443	547	390	2237	1345	892	551	312	234	120
4	6.09	0.50	0.32	9125	17534	3319	3551	1366	530	359	2195	1355	820	546	320	210	125
5	6.16	0.53	0.32	9693	17714	3480	3711	1487	583	432	2292	1419	895	592	353	230	142
mean	6.14	0.51	0.32	9406	17931	3435	3628	1387	558	398	2257	1370	849	539	334	224	131
s	0.06	0.02	0.00	456	376	80	180	124	58	57	102	80	64	63	36	24	16
cv	1.040	3.319	0.430	4.8	2.1	2.3	5.0	9.0	10.4	14.4	4.5	5.9	7.5	11.7	10.9	10.7	12.0
min	6.07	0.49	0.32	8841	17534	3319	3408	1180	488	333	2148	1260	749	431	296	192	116
max	6.23	0.53	0.32	9998	18483	3532	3886	1487	642	476	2414	1472	895	592	387	255	153
q95	0.08	0.02	0.00	565	467	99	223	154	72	71	127	99	79	78	45	30	19
n	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Further technical data

Main supply:	230V, 50 (60) Hz Requirement approx. 2 A	Height:	1650 mm (COVAMAT S) 1575 mm (COVATEST+)
Compressed-air supply:	min. 5 bar, 150 l/min (max. 300 l/min)	Width:	815 mm
Lacquer finish:	RAL 9006 / 5002	Depth:	730 mm
		Weight:	Depending on scope of supply

The above technical contents can be subject to changes by Texttechno.



Textechno Herbert Stein GmbH & Co. KG
D-41066 Mönchengladbach, Germany
www.textechno.com



THE TEXTECHNO GROUP

Your reliable partners for
quality improvement

Lenzing Instruments GmbH & Co. KG
A-4851 Gampern, Austria
www.lenzing-instruments.com

