

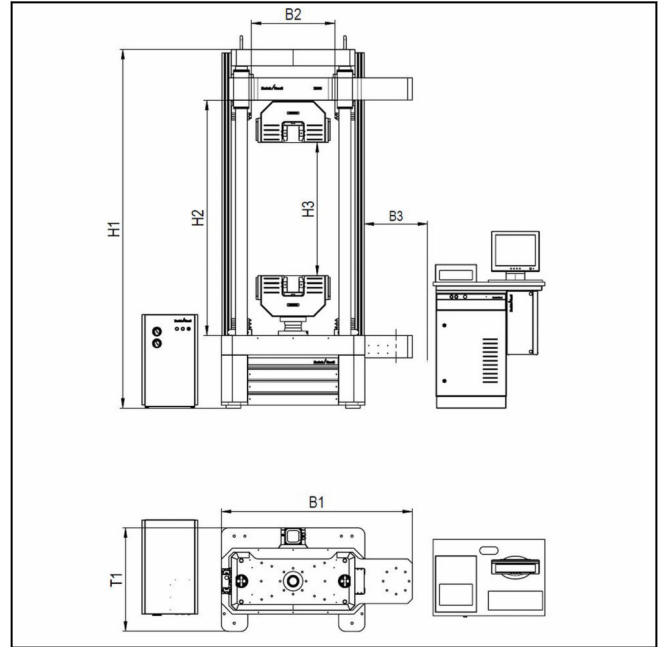
## Product Information

### Z330ES to Z1600ES materials testing machines with side test-area

CTA: 96023 79728



Z600ES with hydraulic grips



Drawing: Z600ES with hydraulic grips

### Advantages and features

#### Modern load-frame design

- The robust load-frame features four hard-chromed guide-columns and massive base and moving cross-heads, ensuring excellent guidance properties and a high level of machine stiffness.
- Maintenance-free digitally controlled AC drive technology combined with an innovative motor feedback system allows excellent constant speed characteristics to be achieved even at extremely low speeds.
- The backlash-free pre-stressed precision ball-screws with digitally controlled AC servo drive allow virtually maintenance-free operation.
- The large test area combined with low overall height enables specimens and components with a wide range of lengths to be tested.
- The testing machine is positioned directly on the ground with no foundation.

#### Operator convenience

- Convenient operating height for specimen insertion with grips installed.
- testXpert III's intelligent test environment concept reduces set-up times and increases productivity.

#### Side test-area

The additional side test-area reduces the need for reconfiguration and re-equipping, saving costs:

- eliminates working time required for alterations to test arrangement
- test-arrangement alignment is preserved
- high level of operator safety and convenience is assured
- maximizes possible applications where space is limited

#### Innovative electronics

- The new testControl II measurement and control electronics provide the ideal basis for precise, reproducible test results.
- Developed in-house by ZwickRoell, the electronics impress through maximum accuracy, high measured-value rates and flexible modularity.

#### Optimum safety standards

- The statutory safety requirements of the EC Machinery Directive are implemented in all ZwickRoell testing machines and an EC Declaration of Conformity is provided.
- Only the latest safety technology and proven industrial components are used.
- A high level of safety is guaranteed for user, test results, specimen material and testing system.

## Product Information

### Z330ES to Z1600ES materials testing machines with side test-area

Description	Value
<b>Load frame</b>	
Paint finish	RAL 7011 iron gray and RAL7038 agate gray
Ambient temperature	+10 ... +35 °C
Humidity (non-condensing)	20 ... 90 %
<b>Drive</b>	
Motor	AC servo motor with concentrated windings, Hiperface® motor feedback system
motor holding brake	yes
Control, set-value specification	digital (real-time Ethernet, EtherCAT®)
Controller/cycle time	adaptive / 1000 Hz
<b>Measurement and control electronics</b>	
Number of slots available for measurement and control module	5 synchronized module bus slots, 1 synchronized PCIe slot <sup>1)</sup>
Force measurement	Class 0.5 from 1% of Fmax / Class 1 from 0.2 % of Fmax, as per EN ISO 7500-1, ASTM E4, JIS B 7721
Calculated resolution (e.g. load cell in tensile/compression direction)	24 bit
Measured-value sampling-rate, internal	400 kHz
Measured-value transmission rate to PC	500 (optionally 2000) Hz
Zero-point correction	automatic, at start of measurement
Measurement signal runtime correction for all channels	yes
Interface to PC	Ethernet
Eco mode?	yes, power unit automatically switched off (time adjustable)
CE compliance?	yes, as per Machinery Directive 2006/42EC
<b>Electrical supply data</b>	
Mains supply frequency	50/60 Hz
Electrical supply	400 +/- 10 % V, 3Ph/PE
Power consumption	6.5 - 24.5 (see product data p.3) kVA

1) A high-quality DCSC measurement module for one load cell is included in delivery (occupies one module bus slot).

### Options<sup>1)</sup>

Description
testControl II display-equipped remote control
Measured-value transmission-rate increase from standard 500 Hz to 2000Hz
Add-on table unit for electronics cabinet, with CPU-holder
ZwickRoell extensometer attachment (see catalog)
Leveling feet
Front/rear safety device
Lead-screw guard

1) See catalog for item numbers and further details

## Product Information

### Z330ES to Z1600ES materials testing machines with side test-area

Type	Z330ES	Z400ES	Z600ES	Z1200ES	Z1600ES	
Item No.	1013500	1013487	1011804	1021341	3007531	
<b>Load frame</b>						
Test force $F_N$ in tens./comp. direction						
Main test area	330	400	600	1200	1600	kN
Side test-area	100	100	150	250	400	kN
No. of guide columns	4	4	4	4	4	
No. of drive screws	2	2	2	2	2	
Stiffness of load frame at H2 = 1000 mm	511	511	925	1972	2200	kN/m m
Load-frame dimensions						
Height - H1	3050	3050	3050	3700	3980	mm
Width - B1	1524	1524	1623	2100	2175	mm
Depth - T1	775	775	880	1063	1150	mm
Dimensions of main test-area						
Height - H2	2085	2085	2000	2340	2590	mm
Width - B2	660	660	710	830	980	mm
Dimensions of side test-area						
Height - H2	2085	2085	2000	2340	2590	mm
Width - B3	540	540	540	750	750	mm
Test stroke - H3 (with hydraulic grips)	1400	1400	1130	1080	1048	mm
Weight without attachments	2750	2400	3560	8200	10100	kg
with hydraulic grips	3200	3200	4240	9600	13250	kg
Specific floor loading (with hydraulic grips)	2.72	3.8	5.1	2.9	3.75	kg/cm <sup>2</sup>
Noise level at maximum test-speed	<70	<70	<70	<70	<70	dBA
<b>Drive</b>						
Crosshead speed	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 400	0.00005 to 350	mm/m in
Increased crosshead return speed (at reduced force)	520	520	520	550	550	mm/m in
Displacement resolution of drive	0.000123	0.000123	0.000123	0.000176	0.000176	μm
Power consumption	6.5	6.5	9	24.5	24.5	kVA