

Alliance RT Material Test Systems

Specifications



Load unit specifications

All Models

Depth	710 mm (28 in)
Width	810 mm (32 in)
Height: standard optional	1750 mm (69 in) 2250 mm (89 in)
Weight	Varies by model, see back of this data sheet
Footprint	0.580 sq m (900 sq in)
Lateral test space	425 mm (16.7 in)
Crosshead travel: standard optional	1105 mm (43.5 in) 1605 mm (63.2 in)
Power requirement, V AC +/- 10%	110 or 208/240 for all models except the Alliance RT/100, which requires 208/240 (all single phase power)
Hz	50-60
KVA	See back of this data sheet
Speed accuracy	Better than 0.1% of set speed within frame speed range (see back of this data sheet)
Position measurement	High-resolution encoder output from drive system. Accuracy determined by mechanical grade of ball screw. All Alliance RT systems use class 50 ball screws, except the Alliance RT/1, which uses a class 100 ball screw.
Maximum force at full speed	100% over full speed range
T-slots in extrusions	Yes
Speed control	Continuously variable
Load measurement accuracy	Meets or exceeds ASTM E4, BS 1610, DIN 51221, ISO 7500/1, EN 10002-2, and AFNOR A03-50
Strain measurement accuracy	Meets or exceeds ASTM E83, BS3846, ISO 8513, and EN 10002-4





Environmental Requirements

Operating temperature	10 to 38°C (50 to 100°F)
Max. operating humidity	70% noncondensing
Storage temperature	-20 to 60°C (-2 to 140°F)
Maximum storage humidity	100% R.H. noncondensing—System should be brought to operating conditions for 24 hours prior to plugging it into an electrical outlet.

Model	Capacity	Maximum Speed	Return Speed	Minimum Speed
Alliance RT/1	1 kN (225 lbf)	10 m/min (400 in/min)	10 m/min (400 in/min)	0.1 mm/min (0.004 in/min)
Alliance RT/5	5 kN (1,125 lbf)	25 m/min (100 in/min)	25 m/min (100 in/min)	0.025 mm/min (0.001 in/min)
Alliance RT/10	10 kN (2,250 lbf)	1 m/min (40 in/min)	1 m/min (40 in/min)	0.001 mm/min (0.00004 in/min)
Alliance RT/30	30 kN (6,750 lbf)	1 m/min (40 in/min)	1 m/min (40 in/min)	0.001 mm/min (0.00004 in/min)
Alliance RT/50	50 kN (11,250 lbf)	1 m/min (40 in/min)	1 m/min (40 in/min)	0.001 mm/min (0.00004 in/min)
Alliance RT/100	100 kN (22,500 lbf)	0.5 m/min (20 in/min)	0.5 m/min (20 in/min)	0.001 mm/min (0.00004 in/min)

Model	Frame Stiffness	Weight	Position Resolution	Power Required (KVA)
Alliance RT/1	74 kN/mm (421,000 lbf/in)	326 kg (720 lb)	1.26 μ m (49.6 μ in)	0.5
Alliance RT/5	80 kN/mm (454,000 lbf/in)	326 kg (720 lb)	0.19 μ m (7.5 μ in)	0.6
Alliance RT/10	80 kN/mm (454,000 lbf/in)	326 kg (720 lb)	0.06 μ m (2.4 μ in)	0.8
Alliance RT/30	175 kN/mm (1,000,000 lbf/in)	353 kg (780 lb)	0.06 μ m (2.4 μ in)	1.0
Alliance RT/50	175 kN/mm (1,000,000 lbf/in)	353 kg (780 lb)	0.06 μ m (2.4 μ in)	1.2
Alliance RT/100	300 kN/mm (1,700,000 lbf/in)	370 kg (815 lb)	0.05 μ m (2.0 μ in)	1.8

Controller Specifications

Optional controller sensor channels (Contact MTS with your specific requirements)	DC low level: 2 AC low level: 1 Digital (quadrature): 3 Digital input (TTL): 4
Optional external sensor channels	High level: up to 32
Optional controller output channels	Digital: 4 (28 V DC max) Analog: 2

Standards

EMC	EN 50082-2 (1995) Electromagnetic Compatibility, Generic Immunity standard, Part 2: Industrial environment EN 55011 (1991) Limits and Methods of Measurement of Radio Interference Characteristics of Industrial, Scientific and Medical (ISM) Equipment
Safety	EN 61010-1 (1993) Safety requirements for electrical equipment for measurement, control, and laboratory use
CE compliant	Yes

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