

# ELITE

**A TESTER WITH A MASSIVE RANGE OF TESTS, IT'S FAST**



The Elite test system is Clare's flagship product and features 11 powerful tests in one tester. These tests are: AC/DC flash/hipot, DC insulation resistance, Earth/Groundbond and leakage. The Elite is designed for automatic dual voltage (230V/115V, 50/60Hz) operation and is capable of testing product safety in accordance with most international safety standards and approvals agency recommendations – such as IEC, UL, CSA, VDE, EN, BEAB and BABT.

The Elite has a simple friendly user interface, centring on a single button operation with the option to allow engineers and supervisors to create their own pre-programmed test sequence for each product. Powerful Windows software is bundled with this product to enable the tester to be effectively network connected. The 9024 and the 9024V variants of the Elite incorporate a test capability where the function output test voltage can be varied from 10 to 280V.

The 9024 variant can also raise the function test output higher than the supply (up to 280V), making it ideal for product lab audit and conformance type testing. The Elite not only carries out electrical safety tests but can also act as the core within an automated test system. It does this by acting as a simple PLC controller and can control up to 8 external I/O devices, reading inputs and making analogue sensor measurements. Using the sophisticated PC software, traceable test results can be stored and SPC type analysis can be undertaken on the measured data. The Elite incorporates a fast interlock system to ensure that operators are not exposed to hazardous conditions, and the output ports can be configured to drive beacons and other warning or safety shutdown devices. The Elite is the professional solution for practically every manufacturing or conformance electrical safety testing application, facilitating high levels of automation and process control within the production and design environment.

## Key Features

- Meets national and international regulations on electrical safety testing
- All-in-one Electrical Safety Tester including load test capability
- Powerful PC software for complete automatic control
- Statistical analysis (SPC) and result traceability
- Generate test sequences locally or from PC
- Simple straightforward user interface with single button operation
- Powerful I/O allowing control of external devices
- Can act as PLC controller
- Can be network connected
- Test results can be loaded directly into MS Access/Excel
- Can be remote controlled via RS232
- Industrial 19-inch rack mounting option
- Can be used with a barcode scanner
- Can be used with the Desk Test n Tag label printer



**Web:** [www.clareinstruments.com](http://www.clareinstruments.com) **Email:** [sales@clareinstruments.com](mailto:sales@clareinstruments.com)

## Clare

Dominion Way,  
Worthing, West Sussex  
UK, BN14 8NW

**Tel:** +44 (0) 1903 233314

**Fax:** +44 (0) 1903 216089

# ELITE SPECIFICATIONS

## Earth/Ground Continuity Test

Test voltage:	12V AC nominal into an open circuit
Test current:	0 to 26A in steps of 1A
Test current accuracy:	±3%
Measurement range:	0 to 1.999Ω with a resolution of 0.001Ω
Measurement accuracy:	±2% of reading ±2 digits ±5mΩ
Test time:	0 to 255 seconds in steps of 1 second
Protection:	Thermal overload
Measurement system:	4 wire

## Insulation Resistance Test

Test voltage:	200 to 1050V DC in steps of 5V
Test voltage accuracy:	±2%
Break point current:	1mA DC minimum
Short circuit current:	1.5 mA DC nominal
Capacitance drive:	1mF at 10MΩ
Measurement range:	0 to 20MΩ in steps of 10kΩ 19MΩ to 199.99MΩ in steps of 0.1MΩ
Measurement accuracy:	±2% of reading ±2 digits
Test time:	0 to 255 seconds in steps of 1 second

## AC Flash/HIPOT Test

Test voltage:	100V to 5kV AC in steps of 25V
Test voltage accuracy:	±2% ±20V
Test current:	20mA AC maximum
Measurement range:	0 to 19.99mA with a resolution of 0.01mA
Measurement accuracy:	±2% of reading ±2 digits ±20mA/kV
Ramp time:	0.5 to 25 seconds in steps of 0.1 second
Dwell time:	0 to 255 seconds in steps of 1 second
Failure modes:	Breakdown (dv/dt > 10V/ms) Software trip (user selectable 0 - 19.99mA) Hardware trip (22mA nominal)
Discharge time:	1 second maximum
Shut down time:	<20ms maximum

## DC Flash/HIPOT Test

Test voltage:	200V to 6kV DC in steps of 25V
Test voltage accuracy:	±2% ±20V
Test current:	10mA DC maximum
Capacitance drive:	1mF
Measurement range:	0 to 9.99mA with a resolution of 0.01mA
Measurement accuracy:	±2% of reading ±2 digits
Ramp time:	0.1 to 25 seconds in steps of 0.1 second
Dwell time:	0 to 255 seconds in steps of 1 second
Failure modes:	Breakdown (dv/dt > 10V/ms) Software trip (user selectable 0 - 9.99mA) Hardware trip (11mA nominal)
Discharge time:	2 seconds maximum
Shut down time:	<20ms maximum

## Elite Users:

- Production line testing with functional run tests
- Design and conformance labs
- QA and product audit

### Elite includes:

- Elite Tester
- Elite Software CD
- Earth Bond Clip
- Output Box
- Hand-held guard switch
- Data Cable RS232 to PC
- Keyboard
- Instruction Manual
- Mains Lead
- HT Probe

## Optional Extras

### Hardware:

- Barcode scanner
- Desk Test n Tag label printer
- Calibration Check Unit V242
- DUT Lead with User Definable Socket

### Software:

- Elite Software CD

### Training:

- Elite Training

### Services:

- Annual Service and Calibration



Web: [www.clareinstruments.com](http://www.clareinstruments.com) Email: [sales@clareinstruments.com](mailto:sales@clareinstruments.com)

## Clare

Dominion Way,  
Worthing, West Sussex  
UK, BN14 8NW

Tel: +44 (0) 1903 233314

Fax: +44 (0) 1903 216089

# ELITE SPECIFICATIONS

## Phase Neutral Continuity Test

Test voltage:	9 Volts DC nominal into an open circuit
Test voltage accuracy:	±2%
Test current:	8mA DC short circuit
Measurement range:	0 to 1999Ω with a resolution of 1Ω
Measurement accuracy:	±2% of reading ±2 digits
Test time:	0 to 255 seconds in steps of 1 second
Protection:	protection against connection to mains

## Earth Leakage Test

Test voltage:	100V to 300V in 1V increments
Test voltage accuracy:	±2%
Test current:	10mA maximum
Measurement range:	0 to 9.99mA with a resolution of 0.01mA
Measurement accuracy:	±2% of reading ±2 digits
Test time:	0 to 255 seconds in steps of 1 second

## Load/Functional Testing

Test voltage:	10V to 280V in 1V increments
Test voltage accuracy:	±2% ±2V
Test current:	12.99A AC maximum, peak factor <1.5
Current measurement range:	0 to 12.99A AC with a resolution of 0.01A
Current accuracy:	±2% of reading ±2 digits ±50mA
Power measurement range:	0 to 2999W with a resolution of 1W
Power accuracy:	±2% of reading ±2 digits ±5W
Slew rate:	0 to 240 V/second in steps of 1V/second
Test time:	0 to 255 seconds in steps of 1 second
Protection:	thermal overload, over current trip

## Screen (100 mA Earth Continuity)

Test voltage:	250mV DC maximum into an open circuit
Test current:	100mA DC constant current
Test current accuracy:	±2%
Measurement range:	0 to 1.999Ω with a resolution of 0.001Ω
Accuracy:	±2% of reading ±2 digits
Test time:	0 to 255 seconds in steps of 1 second
Protection:	protection against connection to mains
Measurement system:	4 wire

## Analogue Test

Voltage input range:	0 to 12V
Measurement range:	0 to 11.99V with a resolution of 0.01V
Measurement accuracy:	±2% of reading ±2 digits
Test time:	1 to 255 seconds in steps of 1 second

## Supply

Supply voltage:	230 Volts ±15% at 50 - 60Hz
Power consumption:	50VA maximum (standby) 4.25kVA maximum during functional test



Web: [www.clareinstruments.com](http://www.clareinstruments.com) Email: [sales@clareinstruments.com](mailto:sales@clareinstruments.com)

## Clare

Dominion Way,  
Worthing, West Sussex  
UK, BN14 8NW

Tel: +44 (0) 1903 233314

Fax: +44 (0) 1903 216089

# ELITE SPECIFICATIONS

## Operating Temperature Range

+10°C to +30°C

## Storage Temperature Range

0°C to +60°

## Humidity

0 to 80% relative humidity (non condensing)

## Protection

IP43

## Case Dimensions

520(w) x 210(h) x 400(d) mm approx.

## Weight

E9021, E9022, E9023 29kg approx.

E9024 45kg approx.

## Vibration, impact and drop rating

BSEN61010

## LVD

BSEN61010

## EMC

BSEN50081-1

BSEN50082-2

## Indicators

Flash meter:	6kV full scale deflection
Status indicators:	trip red LED, interlock open red LED, interlock closed green LED, local mode green LED, remote mode green LED

## Sockets

Power supply socket:	IEC320, 21A
DUT test socket:	400V, 16A 3 phase, Neutral and Earth IP44
Keyboard:	PS2 socket for AT compatible keyboards
Serial Interface (COMM1):	9 way 'D' type male connector configured as an RS232 DTE (data terminal equipment)
Serial Interface (COMM2):	9 way 'D' male connector configured as an RS232 DCE (data communication equipment)
Control port:	16 way cage clamp connectors 230V AC @ 7A maximum rating installation category II (IEC664)
Digital port:	16 way cage clamp connectors 12V DC output maximum
External Flash:	single pole, latching socket 5kV AC maximum



**Web:** [www.clareinstruments.com](http://www.clareinstruments.com) **Email:** [sales@clareinstruments.com](mailto:sales@clareinstruments.com)

## Clare

Dominion Way,  
Worthing, West Sussex  
UK, BN14 8NW

**Tel:** +44 (0) 1903 233314

**Fax:** +44 (0) 1903 216089

# ELITE SPECIFICATIONS

To select your Elite tester please review the measurement functions below:

Measurement Functions						
TYPE OF ELITE	Flash/Hipot	Insulation	Earth/Ground Bond	P-N	Earth Leakage	Load/Run
Elite E9024	Y	Y	Y	Y	Y	Y
Elite E9024V	Y	Y	Y	Y	Y	Y
Elite E9023	Y	Y	Y	Y		
Elite E9022	Y	Y	Y	Y		
Elite E9021	Y	Y	Y	Y		



WORLD LEADERS IN SAFETY TEST AND MEASUREMENT

Seaward test and measurement companies include:

**CLARE**  
INDUSTRIAL SAFETY INSTRUMENTS

**CROPICO**  
PRECISION INSTRUMENTS

**RIGEL**  
MEDICAL

**SEAWARD**  
PORTABLE ELECTRICAL SAFETY INSTRUMENTS