

HIOKI

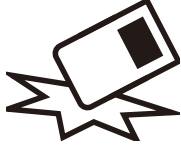
INSULATION TESTER Series



INSULATION TESTERS

Digital

DROP PROOF



Built tough to withstand a 1-meter drop onto a concrete floor

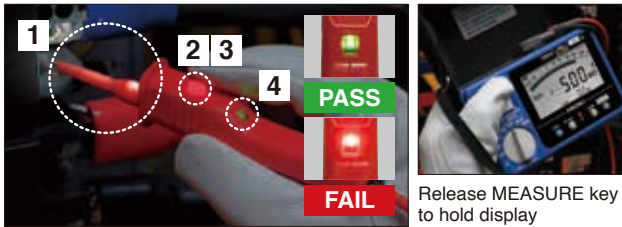


5 ranges

Rated output voltage (DC)
Effective maximum indicated value

- 50 V / 100 MΩ**
- 125 V / 250 MΩ**
- 250 V / 500 MΩ**
- 500 V / 2000 MΩ**
- 1000 V / 4000 MΩ**

Significantly improve testing speed using test lead with remote switch



- 1 LED light shines a spotlight on the target
- 2 Red light warns of live voltage detection
- 3 Measurement start switch
- 4 Identify pass/fail decisions with red or green light

TEST LEAD SET WITH REMOTE SWITCH L9788-11 (Option)
*Standard with the IR4056-21

Manage measurement data on tablets



HOLD displayed data to automatically upload to your mobile device (5m line-of-sight)

Verify data as a list or map measured values right on a photo of the location under test. Easily make test reports using saved data.
*IR4058-20 Only

Identify PASS / FAIL using light and sound



Compare measured values to pre-set reference values to generate a pass or fail decision with the Comparator function.

Easy-to-see LCD



Built-in white LED backlight, large wide angle screen and bar graph display let you easily see measured results even in the dark.

Convenient for inspections

Low resistance measurement^{*1}

Perform EV and HEV continuity checks as well as resistance measurement of protective conductors in facility electrical equipment as defined by IEC 60364.

AC/DC voltage measurement

Automatically detect AC or DC for testing. Use as a tester thanks to DC voltage measurement functionality.

PV Ω dedicated function^{*2}

Measurement is not affected even when the PV system is online.

*1 Excludes IR4053 *2 IR4053 Only

One-touch Start and Stop



Measurement voltage is applied while MEASURE key is pressed



Lift and lock the MEASURE key to apply a continuous stream of voltage

Prevent Accidental High Voltage Generation



Under [500V], [1000V], or [PVΩ] settings, the RELEASE button will blink. Press to unlock the release of high voltages as an extra safety measure.



Lineup

Measurement type	Standard	High-speed		PV	High-voltage
Model	IR4056-20 IR4056-21	IR4057-20	IR4058-20	IR4053-10	IR3455
Appearance					
Number of ranges	5	5	5	5	5
Testing voltage (DC) / Effective maximum indicated value		50 V /100 M Ω 125 V /250 M Ω 250 V /500 M Ω 500 V /2000 M Ω 1000 V /4000 M Ω			250 V /500 G Ω 500 V /1.00 T Ω 1000 V /2.00 T Ω 2500 V /5.00 T Ω 5000 V /10.0 T Ω
1st effective measuring range		0.200 to 10.00 M Ω (50 V) 0.200 to 25.0 M Ω (125 V) 0.200 to 50.0 M Ω (250 V) 0.200 to 500 M Ω (500 V) 0.200 to 1000 M Ω (1000 V)			0.00 to 500 G Ω (250 V) 0.00 to 1.00 T Ω (500 V) 0.00 to 2.00 T Ω (1000 V) 0.00 to 5.00 T Ω (2500 V) 0.00 to 10.0 T Ω (5000 V)
PV Ω measurement	N / A	N / A	N / A	✓	N / A
Leakage current	N / A	N / A	N / A	N / A	1.00 nA to 1.20 mA
DC voltage	600 V	600 V	600 V	1000 V	1.00 kV
AC voltage	600 V	600 V	600 V	600 V	750 V
Low resistance measurement	✓	✓	✓	N / A	N / A
Displaying 1-min. values	N / A	✓	✓	N / A	N / A
Comparator decision response time	✓ 0.8 second	✓ 0.3 second	✓ 0.3 second	✓ 0.8 second (PV : 4 s)	N / A
AUTO power save	✓	✓	✓	✓	N / A
AUTO range	✓	✓	✓	✓	✓
Data hold	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL
Bluetooth® communication	N / A	N / A	✓	N / A	N / A
Bar graph	N / A	✓	✓	N / A	✓
Backlight	✓	✓	✓	✓	✓
Safety standard category	CAT III 600 V	CAT III 600 V	CAT III 600 V	CAT III 600 V	CAT IV 600 V CAT III 1000 V
CE	✓	✓	✓	✓	✓
Dustproof and waterproof	IP40	IP40	IP40	IP40	IP40
Drop proof	✓	✓	✓	✓	N / A
Power supply	LR03 \times 4 alkaline	LR03 \times 4 alkaline	LR03 \times 4 alkaline	LR03 \times 4 alkaline	LR03 \times 6 alkaline
Dimensions (W \times H \times D)	159 \times 177 \times 53 mm 6.26 \times 6.97 \times 2.09 in	159 \times 177 \times 53 mm 6.26 \times 6.97 \times 2.09 in	159 \times 177 \times 53 mm 6.26 \times 6.97 \times 2.09 in	159 \times 177 \times 53 mm 6.26 \times 6.97 \times 2.09 in	260 \times 250.6 \times 119.5 mm 10.24 \times 9.87 \times 4.70 in
Mass	600 g (21.2 oz)	640 g (22.6 oz)	640 g (22.6 oz)	600 g (21.2 oz)	2.8 kg (98.8 oz)

INSULATION TESTER IR4056-20, IR4056-21

CE * IR4056-20 only
 Product warranty for 3 years
 Accuracy guaranteed for 1 year



- With
- TEST LEAD L9787
 - Neck strap
 - LR6 alkaline battery x4
 - Instruction manual

IR4056-20



- With
- TEST LEAD SET WITH REMOTE SWITCH L9788-11
 - Neck strap
 - LR6 alkaline battery x4
 - Instruction manual

IR4056-21 Not CE marked



5 ranges
 Comparator decision response time : 0.8 s
CAT III 600 V

INSULATION TESTER IR4057-20, IR4058-20

CE
 Product warranty for 3 years
 Accuracy guaranteed for 1 year



- With
- TEST LEAD L9787
 - Neck strap
 - LR6 alkaline battery x4
 - Instruction manual

IR4057-20



- With
- TEST LEAD L9787
 - Neck strap
 - LR6 alkaline battery x4
 - Instruction manual

IR4058-20



Please see www.hioki.com for list of supported regions.



5 ranges
 Comparator decision response time : 0.3 s
Digital bar graph
CAT III 600 V

INSULATION TESTER (For Photovoltaic Generation Systems) IR4053-10

CE
 Product warranty for 3 years
 Accuracy guaranteed for 1 year



- With
- TEST LEAD L9787
 - Neck strap
 - LR6 alkaline battery x4
 - Instruction manual

IR4053-10



5 ranges
 Comparator decision response time : 0.8 s
 Comparator decision response time (PV) : 4 s
CAT III 600 V

Model	IR4056, 57, 58	IR4053	Testing voltage (DC)					Basic accuracy	
			50 V	125 V	250 V	500 V	1000 V		
Measurement parameters	Insulation resistance	✓	Effective maximum indicated value (MΩ)	100	250	500	2000	4000	-
			1st effective measuring range (MΩ)	0.200 to 10.00	0.200 to 25.0	0.200 to 50.0	0.200 to 500	0.200 to 1000	±2% rdg ±2 dgt
			2nd effective measuring range (MΩ)	10.1 to 100.0	25.1 to 250	50.1 to 500	501 to 2000	1010 to 4000	±5% rdg
Measurement parameters	PV Ω measurement	N / A	Testing voltage (DC)		500 V		1000 V		-
			Effective maximum indicated value (MΩ)	2000		4000		-	
			1st effective measuring range (MΩ)	0.200 to 500		0.200 to 1000		±4% rdg	
			2nd effective measuring range (MΩ)	501 to 2000		1010 to 4000		±8% rdg	
Measurement parameters	DC Voltage	N / A	4.200 V/42.00 V/420.0 V/1000 V					±1.3% rdg ±4 dgt ¹¹	
		✓	4.200 V/42.00 V/420.0 V/600 V					±1.3% rdg ±4 dgt ¹¹	
Measurement parameters	AC Voltage	✓	420.0 V ¹² /600 V					±2.3% rdg ±8 dgt ¹¹	
		✓	10.00 Ω/100.0 Ω/1000 Ω					±3% rdg ±2 dgt	

Other	Operating temperature	IR4056, 57, 58: -25°C to 65°C, 90% rh or less (non-condensating) IR4053: 0°C to 50°C, 90% rh or less (non-condensating)
	Storage temperature	IR4056, 57, 58: -25°C to 65°C, 90% rh or less (non-condensating) IR4053: -10 °C to 50°C, 90% rh or less (non-condensating)
	Dustproof and waterproof	IP40
	Standards	EN61326 (EMC) EN61557-1/-2/-4 ³ /-10
	Power supply Continuous operating time	LR6 alkaline battery x4 20 hours
	Dimensions (W x H x D)	159 x 177 x 53 mm (6.26 x 6.97 x 2.09 inch)
	Mass	IR4056, 53: 600 g (21.2 oz) IR4057, 58: 640 g (22.6 oz)

¹¹ Ranges in excess of 600 V/1000 V are outside the accuracy guarantee

¹² Minimum indicated value: 30.0 V

¹³ Subclause 4.3 of Part 4 (interchanging of test leads) is not applicable when L9788-10 is used

Order code **IR4056-20**

Order code **IR4056-21**

Order code **IR4057-20**

Order code **IR4058-20**

Order code **IR4053-10**



HIGH VOLTAGE INSULATION TESTER IR3455

Product warranty for 3 years
Accuracy guaranteed for 1 year



5 ranges
Bar graph
CAT IV 600 V, CAT III 1000 V



Measurement parameters	Testing voltage (DC)	250 V	0.00 MΩ to 500 GΩ
	: measuring range	500 V	0.00 MΩ to 1.00 TΩ
		1 kV	0.00 MΩ to 2.00 TΩ
		2.5 kV	0.00 MΩ to 5.00 TΩ
		5 kV	0.00 MΩ to 10.0 TΩ
Insulation resistance	Measurement current	1 mA (Test voltage 250 V to 1.00 kV) 0.5 mA (Test voltage 1.10 kV to 2.50 kV) 0.25 mA (Test voltage 2.60 kV to 5.00 kV)	
	Short-circuit current	2 mA or less	
	Accuracy	±5% rdg ±5 dgt.*1	
Leakage current	10 nA/100 nA/1000 nA/10 μA/100 μA/1 mA Guaranteed accuracy range: 1.00 nA to 1.20 mA Basic accuracy: ±2.5% rdg ± 5 dgt.		
DC Voltage	±50 V to ±1.00 kV Basic accuracy: ±5% rdg ±5 dgt.		
AC Voltage	50 V to 750 V Basic accuracy: ±5% rdg ±5 dgt.		
Temperature	-10.0°C to 70.0°C Basic accuracy: ±1.0°C		
Other	Operating temperature	-10°C to 40°C, 80% rh or less (non-condensating)	
	Storage temperature	-10°C to 50°C, 90% rh or less (non-condensating)	
	Dustproof and waterproof	IP40 (EN60529) ^{*2}	
	Standards	EN61010 (safety) , EN61326 (EMC)	
	Power supply	LR6 (AA) alkaline battery x6: 5 hours BATTERY PACK 9459 ^{*3} : 9 hours AC ADAPTER 9418-15 ^{*3}	
Continuous operating time			
Dimensions (W x H x D)	260 x 250.6 x 119.5 mm (10.24 x 9.87 x 4.70 in)		
Mass	2.8 kg (98.8 oz)		

Order code **IR3455**

Accessories



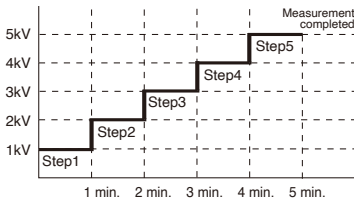
- TEST LEAD 9750 -01 (Red), -02 (Black), -03 (Blue) (3m) (x1 ea.)
- ALLIGATOR CLIP 9751 -01 (Red), -02 (Black), -03 (Blue) (x1 ea.)
- Instruction manual
- LR6 alkaline battery x6
- USB cable
- CD-R (Data Analysis Software)

9750, 9751

*1 Up to [Test voltage (setting value)/Resistance measurable at 100 nA]
*2 When the USB terminal is covered with the shutter *3 Options

Function introduction HIGH VOLTAGE INSULATION TESTER IR3455

STEP 5.0 kV step voltage test

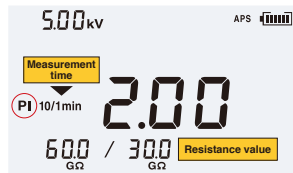


Voltage application time for each step: 30 s/1/2/5 m.

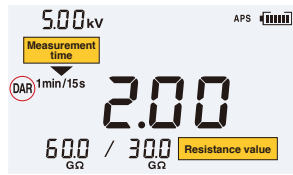
In this type of test, the voltage is gradually raised and the insulation resistance and leakage current change is measured.

Two different step settings are available:
500 V 1 kV 1.5 kV 2 kV 2.5 kV
and 1 kV 2 kV 3 kV 4 kV 5 kV.

PI: Polarization Index DAR: Dielectric Absorption Ratio



PI value display



DAR value display

The PI and DAR values which are used as an evaluation standard for insulation are automatically calculated.

Data Memory Function



The IR3455 provides a manual storage function for 100 data and a logging function for 10 data (360 times). Date and time are also stored, reducing the need for handwritten notes.

Install the included software on your computer and connect via USB to transfer the data stored in the internal memory of the IR3455 to your computer.

Function introduction INSULATION TESTER (For Photovoltaic Generation Systems) IR4053-10

Measurement not affected by generating PV



The IR4053, which was designed for PV, can accurately measure insulation resistance without being affected by the generating PV.

Accurate and safe measurement without creating shorts



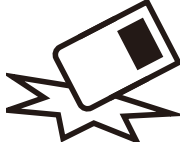
Normally, to accurately measure the insulation resistance of a generating PV, one needs to short the measured circuit. That's not necessary with the IR4053.



Built-in PV dedicated function

Analog Meters

DROP PROOF



Built tough to withstand a 1-meter drop onto a concrete floor



Single range
IR4016-20
IR4017-20
IR4018-20

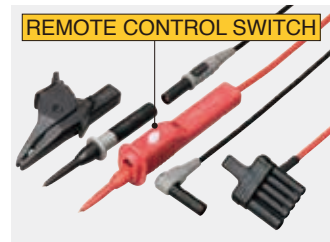
3 range
3490

See better in the dark



Bright LED

Significantly improve testing speed using test lead with remote switch



L9788-11 (Option)

- Start and stop the test at the touch of a button
- Illuminate the test location with a bright white LED
- Work safely knowing that when the RED is lit, live wires, high voltage or electrical discharge is present

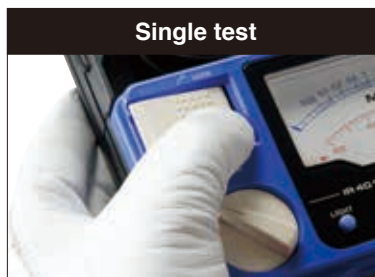
Check for Live Circuits



The LIVE CIRCUIT LED will light up in red whenever the voltage exceeds 20 V AC between the LINE and EARTH terminals, and when at least 20 V DC is still remaining during the auto discharge.

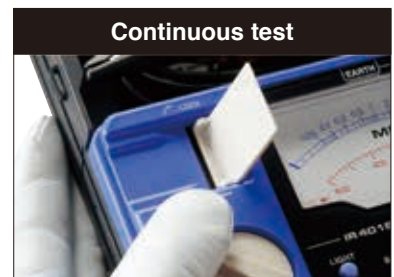
One-touch Start and Stop

Single test



Measurement voltage is applied while MEASURE key is pressed

Continuous test



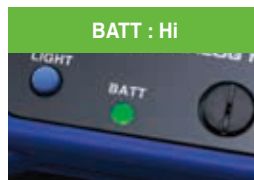
Lift and lock the MEASURE key to apply a continuous stream of voltage

Flip the Cover



Quick and easy storage without disconnecting the leads

Check the Battery Status



Lineup



Product warranty for 3 years
Accuracy guaranteed for 1 year

		1 Range		3 Ranges	
		IR4016 -20	IR4017 -20	IR4018 -20	3490
Measurement parameters		Testing voltage (DC)	500 V		
		Effective maximum indicated value	100 MΩ		
		1st effective measuring range	0.1 MΩ to 50 MΩ		
		2nd effective measuring range	0.01 MΩ to 0.1 MΩ or less 50 MΩ or more to 100 MΩ		
		Testing voltage (DC)	500 V		
		Effective maximum indicated value	1000 MΩ		
		1st effective measuring range	1 MΩ to 500 MΩ		
		2st effective measuring range	0.5 MΩ to 1 MΩ or less 500 MΩ or more to 1000 MΩ		
		Testing voltage (DC)	1000 V		
		Effective maximum indicated value	2000 MΩ		
1st effective measuring range		2 MΩ to 1000 MΩ			
2nd effective measuring range		1 MΩ to 2 MΩ or less 1000 MΩ or more to 2000 MΩ			
	Testing voltage (DC)	250 V	500 V	1000 V	
	Effective maximum indicated value	100 MΩ		4000 MΩ	
	1st effective measuring range	0.05 MΩ to 50 MΩ		2 MΩ to 1000 MΩ	
	2nd effective measuring range	0.01 MΩ to 0.05 MΩ or less 50 MΩ to 100 MΩ		0.5 MΩ to 2 MΩ 1000 MΩ to 4000 MΩ	
Accuracy (Insulation)		±5% of indicated value (1st effective measuring range) ±10% of indicated value (2nd effective measuring range)			
AC Voltage		0 to 600 V			

Other	
Operating temperature	0°C to 40°C, 90% rh or less (non-condensating)
Storage temperature	-10°C to 50°C, 90% rh or less (non-condensating)
Dustproof and waterproof	IP40
Drop proof	YES
Backlight	YES
Safety standard category	CAT III 600 V
Standards	EN61010 (Safety), EN61326 (EMC)
Power supply	LR6 alkaline battery ×4
Continuous operating time	20 hours
Dimensions (W × H × D)	IR4016, 17, 18: 162 × 182 × 57 mm (6.38 × 7.17 × 2.24 in) 3490: 162 × 167 × 52 mm (6.38 × 6.57 × 2.05 in)
Mass	IR4016, 17, 18: 820 g (28.9 oz), 3490: 840 g (29.6 oz)

Accessories



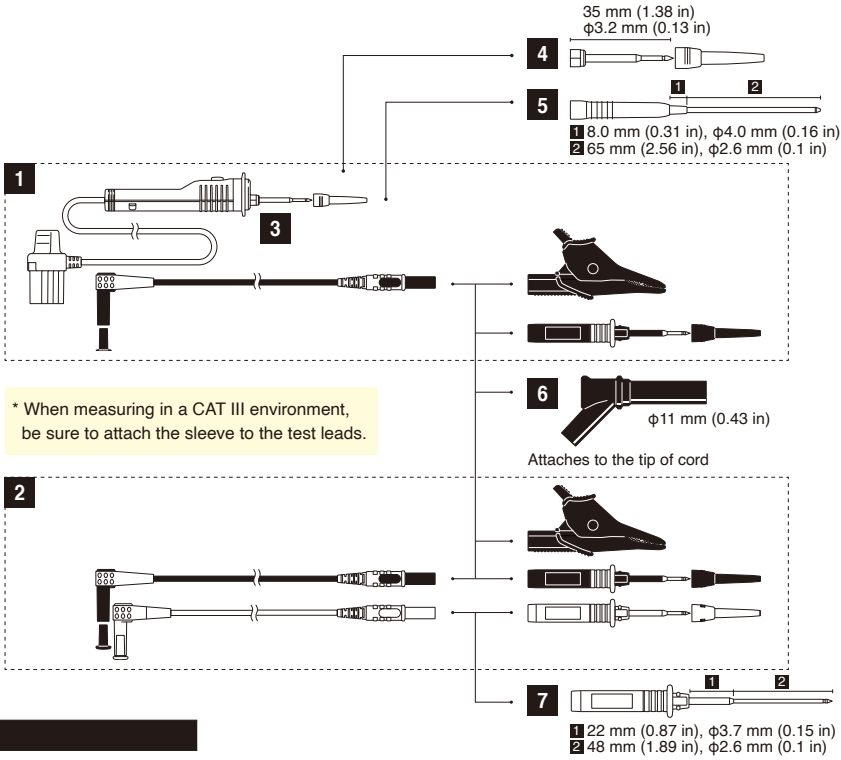
L9787

- TEST LEAD L9787 (1.2 m)
- Neck strap
- LR6 alkaline battery ×4
- Instruction manual

Order code **IR4016-20**Order code **IR4017-20**Order code **IR4018-20**Order code **3490**

Options

IR401X, IR405X, 3490	
1	TEST LEAD SET WITH REMOTE SWITCH L9788-11
2	TEST LEAD L9787
3	TEST LEAD WITH REMOTE SWITCH (RED) L9788-10
4	TIP PIN L9788-90
5	BREAKER PIN L9788-92
6	MAGNETIC ADAPTER 9804-02
7	BREAKER PIN L9787-91



IR3455		
1	TEST LEAD 9750 -01	RED, 3 m (9.84 ft)
2	TEST LEAD 9750 -02	BLACK, 3 m (9.84 ft)
3	TEST LEAD 9750 -03	BLUE, 3 m (9.84 ft)
4	TEST LEAD 9750 -11	RED, 10 m (32.81 ft)
5	TEST LEAD 9750 -12	BLACK, 10 m (32.81 ft)
6	TEST LEAD 9750 -13	BLUE, 10 m (32.81 ft)
7	ALLIGATOR CLIP 9751 -01	RED
8	ALLIGATOR CLIP 9751 -02	BLACK
9	ALLIGATOR CLIP 9751 -03	BLUE
10	TEMPERATURE SENSOR 9631-01	Molded plastic thermistor type (1 m (3.28 ft))
11	TEMPERATURE SENSOR 9631-05	Molded plastic thermistor type (5 cm (0.16 ft))
12	AC ADAPTER 9418-15	
13	BATTERY PACK 9459	



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