(b) **Easy-to-Read Display:** obtained by using bright, large (0.43 inch-high), LED's behind a non-reflective optical filter.

(c) **Easy-to-Understand Display Measurements:** Engineering units for direct-reading values are engraved directly above function selector pushbuttons. Automatic positioning of decimal point removes need for any further interpretive reading of displayed value. Polarity signs are displayed for dc measurements. Blanking of digits for out-of-range signals prevents reading invalid displays.

(d) **Low-level Battery Monitoring:** Decimal point starts to blink when battery level drops to provide 10 or more minutes of operating power. 12-hour recharge cycle develops full charge for 6 hours of continuous operation. Blinking decimal point also indicates a very low ac line voltage when no battery is used.

1.3 SPECIFICATIONS (For 1 year, without recalibration)

1.3.1 DC VOLTS:

Nominal Range	Full Scale	Resolution
100mV	±199.99mV	10μV
1V	±1.9999V	100μV
10V	±19.999V	1mV
100V	±199.99V	10mV
1000V	±1200.0V	100mV

Input Impedance:
10MΩ, all ranges

Maximum Voltage:
±1200V, all ranges momentary, ±1000V continuous

Accuracy: (1 year, 18°C–28°C):
100mV Range ±(0.03% inp +2d)
1, 10, 100, 1000V Ranges ±(0.03% inp +1d)

Temperature Coefficient (all ranges):
±(0.003% inp + 0.001% Range)/°C

Common Mode Voltage:
500 VDC (or peak AC)

Common Mode Rejection Ratio (with 1000 ohm source impedance unbalance):

>120dB at DC

>100dB at 50Hz and at 60Hz

Normal Mode Rejection Ratio:

60dB at 50Hz and at 60Hz

1.3.2 RESISTANCE:

Range	Full Scale	Resolution	Maximum Test Current
1kΩ	1.9999kΩ	100mΩ	1.8mA
10kΩ	19.999kΩ	1Ω	330μA
100kΩ	199.99kΩ	10Ω	35μA
1000kΩ	1999.9kΩ	100Ω	3.5μA
10MΩ	19.999MΩ	1000Ω	0.35μA

Accuracy (1 year, at 23°C ±5°C):

Range	Accuracy
1, 10, 100	±(0.05% inp +1d)
1000	±(0.1% inp +1d)
10MΩ	+(0.25% inp +1d)

Temperature Coefficient

Range	Coefficient
1, 10, 100	±(0.005% inp +0.001% range)/°C
1000	±(0.01% inp +0.001% range)/°C
10MΩ	±(0.02% inp +0.005% range)/°C

Measuring Configuration:

2-wire

Maximum Open Circuit Voltage:

3.5 volts

Maximum Fault Voltage:

500V RMS AC or DC

Settling Time (in seconds):

0.7 +(0.3) (Resistance in MΩ)

1.3.3 DC CURRENT:

Range	Full Scale	Resolution
100μA*	±199.99μA	10nA
1mA*	±1.9999mA	0.1μA
10mA*	±19.999mA	1μA
100mA*	±199.99mA	10μA
1000mA*	±1999.9mA	100μA

*Maximum Current: Limited to 2A on all ranges. Fuse-protected when measuring current in circuits with open-circuit voltage of 250VDC or less.

Nominal Full Scale Voltage Across Shunts:
100mV

Accuracy (1 year, at 23°C ±5°):

Range	Accuracy
100μA, 1, 10	±(0.1% inp +1d)
100, 1000	±(0.2% inp +1d)

Temperature Coefficient

Range	Coefficient
100μA, 1, 10	±(0.01% inp +0.001% Range)/°C
100, 1000	±(0.02% inp +0.001% Range)/°C

1.3.4 AC VOLTS:

Range	Full Scale	Resolution
100mV	199.99mV	10μV
1V	1.9999V	100μV
10V	19.999V	1mV
100V	199.99V	10mV
1000 VAC*	1000.0V*	100mV

*See maximum input voltage limits below:

Input Impedance:
10MΩ in parallel with 75pf or less.
Accuracy: (1 year at 23°C ±5°C):

Frequency		RMS Option**	Average Option
All ranges	20Hz	±(1% inp +50d)	±(1% inp +10d)
	50Hz to 500 Hz	±(0.4% inp +20d)	±(0.2% inp +2d)
	2kHz to 20kHz	±(1.0% inp +20d)	±(1% inp +5d)
1,10,100, 1000 ranges	50kHz		±(1% inp +10d)

*Interpolate between frequency points.

Temperature Coefficient (all ranges):

Frequency	RMS Option**	Average Option
20Hz to 500Hz	±(0.02% inp +0.02% Range)/°C	±(0.01% inp +0.002% Range)/°C
2kHz to 20kHz	±(0.1% inp +0.02% Range)/°C	±(0.1% inp +0.02%C Range)/°C
50kHz		±(0.1% inp +0.05% Range)/°C

*Interpolate between frequency points.
**Crest Factor: 5 up to nominal range, decreasing to 2.5 at full scale.

Maximum Input Voltage (Sinewave):
20Hz to 10kHz: 1000V RMS
Above 10kHz: Decreasing to 200V RMS at 50kHz

Settling Time:
2.5 seconds max. to ±0.1% of final reading for full-scale step input change.

1.3.5 AC CURRENT

Range	Full Scale	Resolution
100μA*	199.99μA	10nA
1mA*	1.9999mA	100nA
10mA*	19.999mA	1μA
100mA*	199.99mA	10μA
1000mA*	1999.9mA	100μA

*Maximum Current: Limited to 2A on all ranges. Fuse-protected when measuring current in circuits with open-circuit voltage of 250VDC or less.

Nominal Full Scale Voltage Across Shunts:
100mV RMS

Accuracy: (1 year, at 23° ±5°C) (all Ranges):

Frequency*	RMS Option**	Average Option
20Hz	±(1.5% inp +50d)	±(1% inp +10d)
50Hz to 1kHz	±(0.75% inp +20d)	±(0.3% inp + 4d)
5kHz to 20kHz	±(1.5% inp +20d)	±(1.5% inp +10d)

*Interpolate between stated frequencies.

Temperature Coefficients (All Ranges)

Frequency*	RMS Option**	Average Option
20Hz to 1kHz	±(0.03% inp +0.02% Range)/°C	±(0.03% inp +0.01% Range)/°C
5kHz to 20kHz	±(0.1% inp +0.02% Range)/°C	±(0.1% inp +0.01% Range)/°C

*Interpolate between stated frequencies.
**Crest Factor: 5 at nominal range, decreasing to 2.5 at full scale.

1.3.6 ALL MEASURING MODES:

Reading Rate:
2.5 readings/seconds

Polarity:
Automatic plus (+) or minus (−) displayed for all DC measurements.

Overload:
Indicated by blanking of all digits; decimal point and polarity (if appropriate) remain lighted.

Display:
0.43″ LED's

Battery Operation:

The optional battery module contains six (6) NiCd batteries, capable of providing up to six (6) hours of fully reliable operation between charges. Recharging of batteries requires approximately 12 to 16 hours.

Low Battery Indicator:

Decimal point blinks 2.5 times/sec. indicating approximately 10 minutes of in-spec operation remaining before recharging.

Power Consumption:

a. With optional battery pack charging — less than 3 watts.
b. Without battery installed — less than 2.5 watts.

Temperature Range:

Operating: −10°C to +55°C. (0°C to +40°C with optional NiCd battery pack installed)

Storage: −40°C to +80°C (−25°C to +50°C with optional NiCd battery pack installed)

Humidity: 0 to 80% RH max.: 0°C to +40°C
0 to 70% RH max.: 40°C to +55°C

Physical:

The Model 2480 measures 8½″ wide by 2⅞″ high by 8⅞″ deep (21.6 × 7.3 × 22.5 cm). It weighs only 2.5 pounds net (1.1kg.) and 3.0 pounds (1.4kg) with battery. A combination carrying handle and tilt stand is provided.

Line (mains) Voltage (47-400Hz):

Model 2480/2480R: 105–125 VAC
Model 2480E/2480RE: 210–250 VAC
Model 2480J/2480RJ: 90–110 VAC

1.4 ACCESSORIES (OPTIONS)

The following optional accessories are available to extend the Model 2480/2480R DMM performance; they may be obtained from Data Precision distributors.

Description	Data Precision Model No.
*Test Leads	T5
Rack Mount (L, R, or Dual)	RMD1
High Voltage Probe (to 40KV)	V41A
AC Current Probe (to 150 Amp.)	IP151
Deluxe Test Leads Kit	T7
Battery Pack	C48
*Line Cord	L45
AC Current Probe (Clamp-on, 10 to 1000 Amp)	IP1001
RF Probe	RF471
Retractile Hook for RF471	RFH1
Isolation Probe	RP100
Temperature Probe	TP151
Carrying Case	CC50

*Included as standard items at no additional charge.