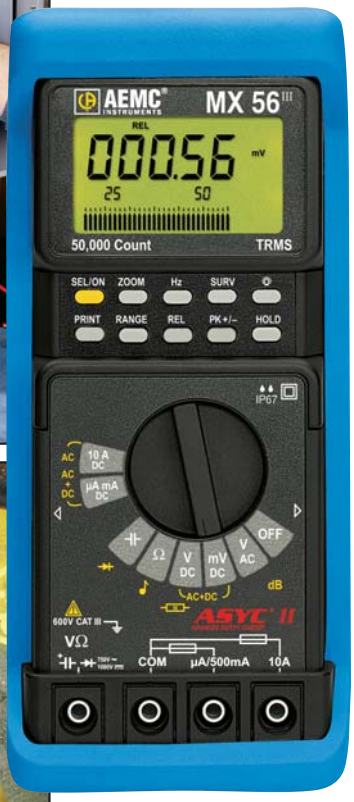
DIGITAL MULTIMETERS
MX50 Series & CA5000 Series



- 50,000-count Digital Multimeters for field and plant use (MX50 Series)
- 40,000-count Digital Multimeters are tough, reliable, economical and professional (CA5000 Series)
- 4000-count Digital Multimeters provide accurate average sensing or TRMS models for linear loads and distorted signals
- 2000-count Digital Multimeters are rugged tools, providing automatic AC/DC selection
- Intrinsically Safe Multimeter for use in dangerous or explosive atmospheres (MX 57EX)
- EN 61010, 600V Cat III and 1000V Cat. II
- Waterproof to IP67 (MX50 Series)

AEMC® INSTRUMENTS
CHAUVIN ARNOUX GROUP

50,000-COUNT DIGITAL MULTIMETER

Models MX53III, MX54III & MX56III

FEATURES

- 50,000-count, 5000-count selectable
- Accuracy to 0.025%
- 600VAC/DC volts measurements
- True RMS (AC or AC + DC)
- Selectable to 1GΩ on the 500mV range
- EN 61010, 600V Cat. III and 1000V Cat. II
- IP67 rated
- RS-232 communication available
- Includes rubber holster

APPLICATIONS

- Installation, repair or maintenance of industrial equipment
- Design verification of prototypes/ production units
- Troubleshooting failures and poor performance
- Quality analysis

The Models MX53, MX54 and MX56 are hand-held professional digital multimeters that measure up to the toughest standards. They are built into a rugged housing which provides a separate battery and fuse compartment to isolate the DMM's electronics from contamination. These meters offer a complete set of measurement ranges and are in compliance with international safety and quality standards to ensure a professional and reliable measuring tool.

These True RMS (AC or AC + DC) meters provide accurate measurements of non-sinusoidal waveforms. They all measure AC Amps, AC Volts, DC Amps, DC Volts, Resistance, Continuity, Capacitance, Frequency and have a Diode Test function. AC Voltage measurement can be displayed in Volts, in dB or in resistance power. Once the load impedance has been programmed the multimeter automatically calculates the value in dB and the power consumed (VA).

The large and easy-to read LCD features a selectable 50,000-count digital display. The display features comprehensive user interface symbols, such as low battery, Min/Max/Avg and a 34-segment analog bargraph for easy trend readings. Accuracy is 0.025%. All models are equipped with a Data Hold function that freezes the measurement for later viewing. All models are waterproof, IP67 rated as well as CE marked.

All models include a pair of test leads (red/black), 9V Alkaline battery and a user manual.

Model MX56III measuring DC voltages in a signal control panel.

SPECIFICATIONS

MODELS	MX53™	MX54™	MX56™
ELECTRICAL			
AC Current			
Measurement Range	5mA to 10A	500µA to 10A	500µA to 10A
Resolution	1µA to 10mA	10nA to 1mA	10nA to 1mA
Basic Accuracy(1)	±1% of Reading ± 3cts	±0.6% of Reading ± 30cts	±0.6% of Reading ± 30cts
AC Voltage			
Measurement Range	0.5 to 750V	0.5 to 750V	0.5 to 750V
Resolution	100µV to 1V	10µV to 100mV	10µV to 100mV
Basic Accuracy(1)	±1% of Reading ± 3cts	±0.3% of Reading ± 30cts	±0.3% of Reading ± 30cts
Input Impedance	10MΩ	10MΩ	10MΩ
DC Current			
Measurement Range	5mA to 10A	500µA to 10A	500µA to 10A
Resolution	100nA to 1mA	10nA to 1mA	10nA to 1mA
Basic Accuracy(1)	±0.2% of Reading ± 2cts	±0.05% of Reading ± 2cts	±0.05% of Reading ± 2cts
DC Voltage			
Measurement Range	0.5 to 1000V	0.5 to 1000V	0.5 to 1000V
Resolution	10µV to 100mV	10µV to 100mV	10µV to 100mV
Basic Accuracy(1)	±0.1% of Reading ± 2cts	±0.05% of Reading ± 2cts	±0.025% of Reading ± 2cts
Input Impedance	10MΩ	10MΩ	10MΩ
Resistance			
Measurement Range	500Ω to 50MΩ	500Ω to 50MΩ	500Ω to 50MΩ
Resolution	10mΩ to 1kΩ	10mΩ to 1kΩ	10mΩ to 1kΩ
Basic Accuracy(1)	±0.1% of Reading ± 3cts	±0.07% of Reading ± 2cts	±0.07% of Reading ± 2cts
Continuity			
Measurement Range	10 to 20Ω	10 to 20Ω	10 to 20Ω
Response Time	1ms	1ms	1ms
Diode Test			
Resolution	1mV	1mV	1mV
Test Current	1mA ± 20%	1mA ± 20%	1mA ± 20%
Capacitance			
Measurement Range	50nF to 50mF	50nF to 50mF	50nF to 50mF
Resolution	10pF to 10µF	10pF to 10µF	10pF to 10µF
Basic Accuracy(1)	±1% of Reading ± 2cts	±1% of Reading ± 2cts	±1% of Reading ± 2cts
Frequency			
Measurement Range	0.62Hz to 500kHz	0.62Hz to 500kHz	0.62Hz to 500kHz
Basic Accuracy(1)	0.03% of Reading	0.03% of Reading	0.03% of Reading
dB Function			
Measurement Range	–	10mVAC to 750VAC	10mVAC to 750VAC
Resolution	–	0.01dB	0.01dB
Other Features			
Pulse Count	–	Up to 99,999-counts	Up to 99,999-counts
Pulse Width	–	20µs (min)	20µs (min)
Power Line Noise Analysis	–	1 to 100kHz	1 to 100kHz
Resistive Power (Programmable reference)			
Measurement Range	–	1 to 9999Ω	1 to 9999Ω
Resolution	–	100µW	100µW
Temperature			
Range (User selectable in °F or °C)	–	-328° to 1472°F (-200° to 800°C)	–
Sensor	–	PT100/PT1000	–
Power Source	9V Alkaline battery	9V Alkaline battery	9V Alkaline battery
Battery Life	500 hours	500 hours	500 hours
MECHANICAL			
Dimensions	7.4 x 3.2 x 1.5" (189 x 82 40mm)		
Weight	0.8 lb (400g)		
DISPLAY			
Digital Display	50,000-count		
Analog Bargraph	34-segment		
ENVIRONMENTAL			
Operating Temperature	14° to 140°F (-10° to 60°C)		
Storage Temperature	-40° to 158°F (-40° to 70°C)		
SAFETY			
Safety Rating	EN 61010, 600V Cat. III and 1000V Cat. II		
Double Insulation ⧈	Yes		
CE Mark	Yes		

(1) Accuracy dependent on range

INTRINSICALLY SAFE DIGITAL MULTIMETER

Model MX 57EX

FEATURES

- ATEX 6005X, Ex II 2 G/D EEx ib IICT6 or Ex I M2 EEx ib I assigned specifications
- Logic signal measurement and ADP input
- Min/Max/Avg functions
- Bargraph with zoom (x5) and center zero
- Rugged design — IP67 185°F (85°C) rating
- Protection by 500mA intrinsic safety fuse for the current range

APPLICATIONS

- Oil refineries
- Mining
- Pharmaceutical plants

Model MX 57EX used outdoors in a mine.

The AEMC Model MX 57EX is an intrinsically safe digital multimeter designed for use in dangerous or explosive atmospheres. This meter in considered as a passive device without inductive or capacitive issues that are problematic in dangerous or explosive environments. This meter provides high functionality in a unique case designed for enhanced safety, reliability, ease-of-maintenance and protection from contaminants.

The meter is built into a rugged housing which provides a separate battery and fuse compartment to isolate the DMM's electronics from contamination. This meter offers a complete set of measurement ranges and are in compliance with international safety and quality standards to ensure a professional and reliable measuring tool.

The Model MX 57EX measures AC Amps, AC Volts, DC Amps, DC Volts, Resistance, Continuity (with beeper), Capacitance, Temperature and has a Diode Test function.

The large and easy-to read LCD features a 50,000-count digital display. The display features comprehensive user interface symbols, such as low battery, Min/Max/Avg and a 34-segment analog bargraph for easy trend readings. Accuracy is 0.025%. The meter is equipped with a Data Hold function that freezes the measurement for later viewing.

Includes a pair of test leads (red/black), 9V Alkaline battery, hard carrying case and a user manual.

THE MX 57EX HAS BEEN REPLACED BY THE MODEL MX 57EX TRMS Cat. # 2130.66

SPECIFICATIONS

Meets the EN 50014 and EN 50020 standards, Ⓔx II 2 G/D EEx ib IICT6 or Ⓔx I M2 EEx ib I assigned specifications, IP 67 185°F (85°C) (electrical equipment for use in explosive atmospheres). CE certificate: LCIE 02 ATEX 6005X. Quality certificate: LCIE 02 ATEX Q8021.

MODEL	MX 57EX TRMS					
ELECTRICAL						
AC Current						
Measurement Range	500µA	5mA	50mA	500mA		
Resolution	10nA	100nA	1µA	10µA		
Bandwidth	DC to 5kHz	DC to 5kHz	DC to 5kHz	DC to 5kHz		
Accuracy	±0.75% of Reading ± 30cts	±0.6% of Reading ± 30cts	±0.6% of Reading ± 30cts	±0.7% of Reading ± 30cts		
Overload Protection	600Vrms	600Vrms	600Vrms	600Vrms		
AC Voltage						
Measurement Range	500mV	5V	50V	500V*	1000V*	
Resolution	10µV	100µV	1mV	10mV	100mV	
Bandwidth	40Hz to 1kHz	1kHz to 4kHz	4kHz to 10kHz	10kHz to 30kHz	30kHz to 50kHz	
Accuracy	±0.3% of Reading	±1% of Reading ± 30cts	±2% of Reading ± 30cts	±2% of Reading ± 30cts	±3% of Reading ± 30cts ± 30cts	
Input Impedance	11MΩ	11MΩ	10MΩ	10MΩ	10MΩ	
Overload Protection	1100Vpk	1100Vpk	1100Vpk	1100Vpk	1100Vpk	
DC Current						
Measurement Range	500µA	5mA	50mA	500mA		
Resolution	10nA	100nA	1µA	10µA		
Accuracy	±0.2% of Reading ± 5cts	±0.2% of Reading ± 2cts	±0.05% of Reading ± 2cts	±0.2% of Reading ± 2cts		
Overload Protection	600Vrms	600Vrms	600Vrms	600Vrms		
DC Voltage						
Measurement Range	500mV	5V	50V	500V*	1000V*	
Resolution	10µV	100µV	1mV	10mV	100mV	
Accuracy	±0.025% of Reading ± 2cts	±0.025% of Reading ± 2cts	±0.025% of Reading ± 2cts	±0.025% of Reading ± 2cts	±0.2% of Reading ± 2cts	
Input Impedance	11MΩ	11MΩ	10MΩ	10MΩ	10MΩ	
Overload Protection	1100Vpk	1100Vpk	1100Vpk	1100Vpk	1100Vpk	
Resistance						
Measurement Range	500Ω	5kΩ	50kΩ	500kΩ	5MΩ	50MΩ
Resolution	10mΩ	100mΩ	1Ω	10Ω	100Ω	1kΩ
Accuracy	±0.07% of Reading ± 5cts	±0.07% of Reading ± 2cts	±0.07% of Reading ± 2cts	±0.07% of Reading ± 2cts	±0.3% of Reading ± 2cts	±1% of Reading ± 2cts
Max Open-Circuit Voltage	7V	7V	7V	7V	7V	7V
Overload Protection	600Vrms	600Vrms	600Vrms	600Vrms	600Vrms	600Vrms
Continuity						
Measurement Range	10 to 20Ω					
Response Time	1ms					
Diode						
Test Voltage	0 to 2V					
Test Current	1mA ± 20%					
Capacitance						
Range	50nF to 50mF					
Accuracy	1% of Reading ± 2cts					
Frequency						
Measurement Range	0.62Hz to 500kHz					
Accuracy	0.03% of Reading ± 2cts					
Temperature						
Range (User selectable in °F or °C)	-328° to 1472°F (-200° to 800°C)					
Sensor	PT100/PT1000					
Power Source	9V Alkaline battery					
Battery Life	100 hours					
MECHANICAL						
Dimensions	7.4 x 3.2 x 1.5" (189 x 82 x 40mm)					
Weight	0.8 lb (400g)					
DISPLAY						
Digital Display	50,000-count					
Analog Bargraph	34-segment					
ENVIRONMENTAL						
Operating Temperature	14° to 104°F (-10° to 40°C)					
Storage Temperature	-40° to 158°F (-40° to 70°C)					
SAFETY						
Safety Rating	EN 50014, EN50020					
Double Insulation ⧈	Yes					
Agency Approval	Ⓔx II 2 G/D EEx ib IICT6 or Ⓔx I M2 EEx ib I assigned specifications					
EMC	Emission and immunity as per NF EN 61326-1, 1998					
CE Mark	Yes					

**Operating voltages are limited to 60V peak value or currents to 500mA for intrinsically safe operation.*

PROFESSIONAL DIGITAL MULTIMETER

Models CA5205, CA5210, CA5220, CA5230 & CA5240

The AEMC® Instruments CA5000 Series are designed for the daily needs of professional electricians. For the safety of the user, these multimeters meet the most demanding international standards: double insulation in accordance with EN 61010-1-III-2, 600V, Cat. III.

These tough, reliable and economical Digital Multimeters (DMMs) feature a large backlit display, clear push-button functions, large rotary range selector and dedicated push buttons. The compact, handheld size along with the rugged, shockproof rubber holster makes this unit ideal for toolboxes and pockets.

Model CA5205 has a 2000-count display that is average sensing and provides 1% accuracy of Reading. Models CA5210, 5220 and 5230 have a 4000-count display are average sensing and provide 1% accuracy (Models CA5210 and CA5220), and 0.25% accuracy (Model CA5230) of Reading.

FEATURES

- Tough, reliable, economical, professional DMMs in choice of 2000-, 4000- and 40,000-count models
- Automatic AC/DC selection (Model CA5205)
- Large backlit display
- Clear pushbutton functions
- Large rotary range selector and dedicated push buttons
- Rugged, shockproof Multistand™ rubber holster for lead and probe storage
- Safety rated to EN 61010, 600V Cat. III for protection against spikes and over-voltage
- Accurate average sensing or TRMS models for your linear loads and distorted signals
- Complete line of accessories including leads and industry's largest selection of current probes

APPLICATIONS

- Installation, repair or maintenance of industrial equipment
- Electrical field testing
- Troubleshooting failures and poor performance

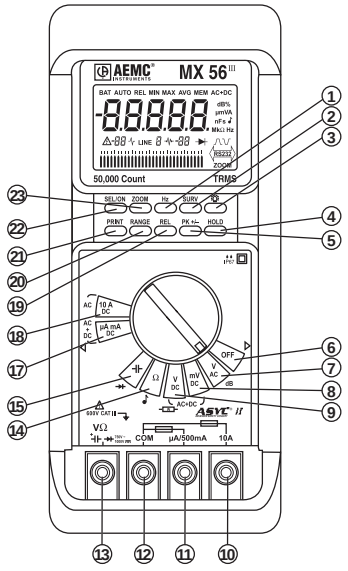
Model CA5205 measuring resistance in a relay cabinet.

SPECIFICATIONS

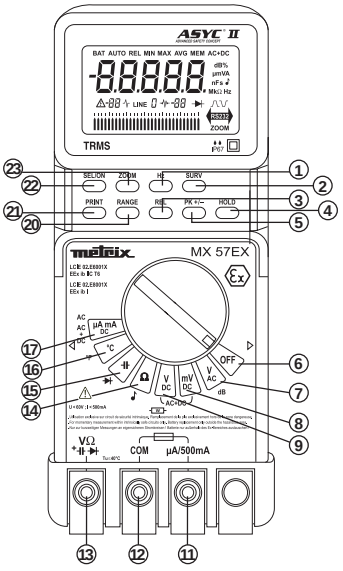
MODELS	CA5205[3]	CA5210[4]	CA5220	CA5230 TRMS	CA5240 TRMS
ELECTRICAL					
AC Current					
Measurement Range[1]	–	–	3 ranges: 40mA to 10A	3 ranges: 40mA to 10A	3 ranges: 40mA to 10A
Resolution	–	–	10µA to 10mA	10µA to 10mA	1µA to 1mA
Basic Accuracy*	–	–	±1.5% of Reading ± 2cts	±0.8% of Reading ± 4cts	±0.9% of Reading ± 5cts
AC Voltage					
Measurement Range[1]	5 ranges: 200mV to 600V	5 ranges: 400mV to 600V	5 ranges: 400mV to 600V	5 ranges: 400mV to 600V	5 ranges: 400mV to 600V
Resolution	0.1mV to 1V	0.1mV to 1V	0.1mV to 1V	0.1mV to 1V	10µV to 100mV
Basic Accuracy*	±1% of Reading ± 5cts	±1.5% of Reading ± 1ct	±1.5% of Reading ± 1ct	±1% of Reading ± 3cts	±1.5% of Reading ± 20cts
Input Impedance[2]	3MΩ	10MΩ	10MΩ	10MΩ	3MΩ
DC Current					
Measurement Range[1]	–	–	3 ranges: 40mA to 10A	3 ranges: 40mA to 10A	3 ranges: 40mA to 10A
Resolution	–	–	10µA to 10mA	10µA to 10mA	1µA to 1mA
Basic Accuracy*	–	–	±1.5% of Reading ± 2cts	±1.2% of Reading ± 5cts	±0.5% of Reading ± 10cts
DC Voltage					
Measurement Range[1]	5 ranges: 200mV to 600V	5 ranges: 400mV to 600V	5 ranges: 400mV to 600V	5 ranges: 400mV to 600V	5 ranges: 400mV to 600V
Resolution	0.1mV to 1V	0.1mV to 1V	0.1mV to 1V	0.1mV to 1V	10µV to 100mV
Basic Accuracy*	±1% of Reading ± 1ct	±1% of Reading ± 1ct	±1% of Reading ± 1ct	±0.25% of Reading ± 1ct	±0.1% of Reading ± 3cts
Input Impedance[2]	3MΩ	10MΩ	10MΩ	10MΩ	3MΩ
Resistance					
Measurement Range	6 ranges: 200Ω to 20MΩ	6 ranges: 400Ω to 40MΩ	6 ranges: 400Ω to 40MΩ	6 ranges: 400Ω to 40MΩ	6 ranges: 400Ω to 40MΩ
Resolution	0.1Ω to 10kΩ	0.1Ω to 10kΩ	0.1Ω to 10kΩ	0.1Ω to 10kΩ	0.1Ω to 10kΩ
Basic Accuracy*	±1.5% of Reading ± 5cts	±1.5% of Reading ± 3cts	±1.5% of Reading ± 3cts	±0.5% of Reading ± 3cts	±0.2% of Reading ± 3cts
Continuity					
Beeper Activation	≤700Ω	≤40Ω	≤40Ω	≤40Ω	≤40Ω
Diode Test					
Resolution		1mV	1V	1mV	1mV 1mV
Basic Accuracy*	±2% of Reading ± 15mV	±2% of Reading ± 15mV	±2% of Reading ± 15mV	±1% of Reading ± 2cts	±1% of Reading ± 10cts
Capacitance					
Measurement Range	–	5 ranges: 4nF to 40µF	5 ranges: 4nF to 40µF	5 ranges: 4nF to 40µF	5 ranges: 4nF to 40µF
Basic Accuracy*	–	±5% of Reading ± 10cts	±5% of Reading ± 10cts	±1.5% of Reading ± 4cts	±1.5% of Reading ± 5cts
Frequency					
Measurement Range	–	–	5 ranges: 10Hz to 200kHz	5 ranges: 100Hz to 400kHz	6 ranges: 100Hz to 2MHz
Basic Accuracy*	–	–	±0.1% of Reading ± 2cts	±0.1% of Reading ± 20cts	±0.1% of Reading ± 10cts
Power Source	Two 1.5V AA batteries	Two 1.5V AA batteries	Two 1.5V AA batteries	9V Alkaline battery	9V Alkaline battery
Battery Life	500 hours	600 hours	600 hours	500 hours	400 hours
MECHANICAL					
Dimensions	7 x 2.5 x 1.7" (177 x 64 x 42mm)	7 x 2.5 x 1.7" (177 x 64 x 42mm)	7 x 2.5 x 1.7" (177 x 64 x 42mm)	7 x 2.5 x 1.7" (177 x 64 x 42mm)	7 x 2.5 x 1.7" (177 x 64 x 42mm)
Weight	0.7 lb (350g)	0.7 lb (350g)	0.7 lb (350g)	0.7 lb (350g)	0.7 lb (350g)
DISPLAY					
Digital Display	2000-count	4000-count	4000-count	4000-count	40,000-count
Analog Bargraph	–	40-segment	40-segment	40-segment	40-segment
ENVIRONMENTAL					
Operating Temperature	32° to 122°F (-10° to 60°C)				
Storage Temperature	-4° to 140°F (-40° to 70°C)				
SAFETY					
Safety Rating	EN 61010, 600V Cat III				
Double Insulation ⧈	Yes				
CE Mark	Yes				

(1) Use on frequency: 0 to 60Hz
(2) For the CA5210/CA5220, on position Velec: base impedance 270kΩ
(3) Automatic recognition of DC or AC
(4) Additional function "ADP": input 0 to 400mVDC for accessories
** Accuracy dependent on range*

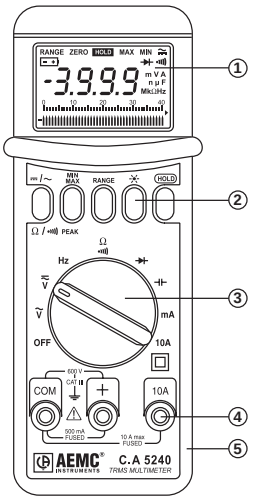
CONSTRUCTION



Model MX56III



Model MX 57EX



Model CA5240

1. Time functions selection
2. Monitoring values selection/display
3. Display backlighting
4. Display hold
5. Peak measurement
6. Power off
7. AC voltage measurement
8. 500mV voltage measurement
9. DC voltage measurement
10. Input terminal range 10A
11. Input terminal range µA, mA
12. Multimeter reference input
13. Input terminal, ranges 11, 12, 13, 14 and 15
14. Resistance measurement
15. Capacitance measurement
16. Temperature measurement (Model MX 57EX)
17. Current measurement up to 500mA
18. Current measurement up to 10A (Model MX56III)
19. Relative mode measurement (Model MX56III)
20. Range change
21. Data sending to a printer
22. Power on (selects secondary functions)
23. Bargraph scale magnification

1. LCD display
2. Control buttons
3. Rotary range selector switch
4. Safety terminals (4mm)
5. Shockproof rubber holster

Test Leads included with MX50 Series

Test Leads included with CA5000 Series

Case included with MX 57EX

ORDERING INFORMATION — CATALOG NO.

DMM Model MX53III (50,000-count, TRMS, 0.1% Accuracy, with Holster) . . . . . **Cat. #2116.69**
DMM Model MX54III (50,000-count, TRMS, 0.05% Accuracy, with Holster) . . . . . **Cat. #2116.70**
DMM Model MX56III (50,000-count, TRMS, 0.025% Accuracy, with Holster) . . . . . **Cat. #2116.72**
DMM Model MX 57 EX TRMS . . . . . **Cat. #2130.66**
DMM Model CA5205 (2000-count, Average Sensing, 1% Accuracy) . . . . . **Cat. #2116.73**
DMM Model CA5210 (4000-count, Average Sensing, 1% Accuracy) . . . . . **Cat. #2116.74**
DMM Model CA5220 (4000-count, Average Sensing, 1% Accuracy) . . . . . **Cat. #2116.75**
DMM Model CA5230 (4000-count, TRMS, 0.25% Accuracy) . . . . . **Cat. #2116.76**
DMM Model CA5240 (40,000-count, TRMS, 0.1% Accuracy) . . . . . **Cat. #2116.77**

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