



MOTOROLA TWO-WAY RADIOS

These radios are designed for heavy-duty, everyday industrial use. Environments such as construction, manufacturing and retail environments, along with many others, require this type of radio in order to function efficiently and productively.

XTN SERIES SINGLE CHANNEL

Features:

- Range up to 9.6 km/250,000 sq. ft. or up to 20 floors
- 2 watts
- 38 analog and 83 digital interference eliminator codes
- Waterproof, shockproof and drop-proof
- Designed to meet MilSpec810 and IP54 standards
- Cloning capabilities
- Manager lock
- Call tones
- Battery gauge
- Weight: 9.8 oz with NiMH battery

Included accessories:

- 1500 mAh NiMH rechargeable battery
 - 10-hour plug-in charger
 - Swivel belt holster with 3" spring clip
- * Industry Canada Licence Required

Order No. HT172

Mfg. No. XU2103



TALKABOUT® SX700R FRS/GMRS RECHARGE PACK

Features:

- Delivers a range of up to 12 miles/19,2 km
- FRS/GMRS recharge pack
- Puissance de 2 W
- 22 channels, each with 121 privacy codes for 2662 combinations
- 7 hr. NiMH estimated talk time
- iVOX hands-free communication without accessory
- NOAA weather alert feature
- QTTM (Quiet Talk) interruption feature
- Companding technology
- Backlight display
- LCD battery meter
- Battery save feature
- *VibraCall*® vibrating alarm
- Audible low battery alert
- Keypad lock
- 10 call tones
- Timer-out timer
- Priority scan
- Available in Black

Included accessories:

- 2 radios
- 2 drop-in charges
- Charging adaptors
- 2 NiMH rechargeable battery packs and 1 set of blue faceplates

Order No. IA034

Mfg. No. SX700R



XTN SERIES MULTI-CHANNEL 2-WATT

Features:

This version shares all the features of the HT172, in addition to the following:

- 5 additional channels
- Voice-activated, hands free operation (VOX) capability
- Preset channel access
- Scan

Included accessories:

- 1500 mAh NiMH rechargeable battery
 - 10-hour plug-in charger
 - Swivel belt holster with 3" spring clip
- * Industry Canada Licence Required

Order No. HT171

Mfg. No. XU2603



CLS SERIES FOUR CHANNEL 1-WATT

Features:

- Up to 8 km range, 200,000 sq. ft. or 15 floors
- 1 watt UHF transmit power
- 2 frequencies
- Up to 4-channel operation
- 121 interference eliminator with 83 digital and 38 analog codes
- LCD display with battery meter, signal strength indicator
- *VibraCall*® alert feature
- Call Alert button with 3 call tones and Off
- Double pin accessory jack
- Compatible with XTN Series audio accessories
- VOX – Voice activated with select audio accessories

Included accessories:

- Lithium ion battery, up to 12 hours battery life
 - 3-hr drop-in charger
 - Swivel holster
- * Industry Canada Licence Required

Order No. HX166

Mfg. No. CLS1413



ACCESSORIES

Order No.	Mfg. No.	Description	Compatible With Series
BATTERIES			
HX066	53871	NiMH rechargeable battery	XTN
HX186	56557	Lithium ion rechargeable battery	CLS
CHARGER			
HX067	53874	10-hour wall charger	XTN
HX068	53872	10-hour drop-in charging tray	XTN
HX069	53875	2-hour drop-in charging tray	XTN
HX070	53879	Multi-unit cloning station and charger	XTN
HX180	56553	3-hr Drop-in Charger	CLS
HX181	56531	CCS Multi-Charging Station	CLS
HX182	56564	AAA Battery Tray	CLS
AUDIO ACCESSORIES			
HM015	53862	Remote speaker/microphone	XTN/CLS
HM017	53866	Earbud w/in-line push-to-talk button	XTN/CLS
HM005	53863	Earpiece w/microphone	XTN/CLS
HM004	53865	Headset w/swivel boom microphone	XTN/CLS
CARRY CASES & HOLSTERS			
HX071	53821	Replacement swivel belt holster	XTN
HX185	MR7000-20W	Hard leather carry case with swivel belt loop	XTN
HX183	56519	Carry case with adjustable strap	CLS
HX184	56532	Replacement swivel belt holster	CLS
IA033	58373	Leather carry case w/ plastic front	XTN



Instruments

ALTAIR™ SINGLE-GAS DETECTORS

- Features sensor options for carbon monoxide, hydrogen sulfide and oxygen gas
- Offers superior dust and water protection and high resistance to RFI
- Rubberized housing and one-button operation
- The triple-alarm system featuring two bright LEDs, a piercing audible alarm, and a vibrating alarm ensures that no alarm condition goes unnoticed
- Automatically records the last 25 alarm events
- To read data or change alarm set points simply connect the unit to an MSA infrared adapter using the built-in IR communication port
- Uses patented electrochemical sensors, MSA-built Button toxic gas sensors which feature stainless steel construction and contain solid electrolyte
- The extremely small and thin sensor profile allows the detector to deliver high-performance in a very small package
- Two-year life span
- Class 1, Div 1, Groups A, B, C & D approved

SAO780



SIRIUS™ MULTI-GAS DETECTORS

- PID sensor design (patent-pending)
- Excellent PID performance including humidity resistance, stable zero readings and fast response and clear times
- Multifunctional capabilities by integrating a high-performance PID (photoionization detector) sensor into a four-gas detector
- Able to simultaneously monitor for volatile organic compounds (VOCs) with low vapour pressures while measuring for combustible, toxic and oxygen-deficient atmospheres
- UL approved



SAO783



Order No.	Mfg. No.	Instrument Type
SAO783	10058065	With Lithium-ion battery
SAO784	10058069	Includes: data logging option and software

Order No.	Mfg. No.	Description
SAO780	10070749	H ₂ S
SAO781	10070750	CO
SAO782	10070791	O ₂

TITAN™ COMBUSTIBLE GAS DETECTORS

- The Titan™ combustible gas detector is used for the detection of combustible gases and vapours in air
- 85 dB audible alarm
- Oversized display
- One-button operation allows simplicity of use

HX577



Order No.	Mfg. No.	Description
WITH ALKALINE BATTERIES		
HX577	10033144	Pentane-calibrated
HX578	10039415	Methane-calibrated
HX579	10042385	Propane-calibrated
WITH NIMH BATTERIES		
HX580	10033387	Pentane-calibrated
HX581	10039415	Methane-calibrated
HX582	10042386	Propane-calibrated
WITH VIBRATING BATTERY PACK		
HX583	10033388	Pentane-calibrated
HX584	10039416	Methane-calibrated
HX585	10042387	Propane-calibrated

ACCESSORIES		
HX586	10040783	Battery Charger and Stand
HX587	10035638	Carrying Case with Strap
HX588	804532	Order RP Cylinder, Pentane
HX589	491041	Order RP Cylinder, Methane

SOLARIS® MULTI-GAS DETECTORS

- Affordable, durable, reliable, easy-to-use portable instrument for detecting the presence of O₂, H₂S, CO and combustible gas
- Ergonomic design for maximum comfort
- Triple alarm system with 100+ decibel audible alarm
- Multiple high-intensity visual alarm and strong vibrating alarm
- Superior display features simultaneous gas concentration display
- Backlighting for easy reading and alphanumeric message bar
- Under 227 grams, compact size that makes it easy to wear
- Durable case with rubberized armour
- Provides superior protection against liquid and dust ingress, IP65 rated
- Rechargeable lithium ion battery provides 14+ hours of continuous run time
- TIM® system compatible for computer automated calibration and record-keeping
- Optional powered sampling pump with extensive contaminant filtering system
- 2-year, all-inclusive warranty
- CSA approved units

HX555



Order No.	Mfg. No.	Description
BASIC KITS		
HX555	10058051	4-Gas Instrument
HX556	10058055	3-Gas (LEL, O ₂ , CO)
HX557	10058057	3-Gas (LEL, O ₂ , H ₂ S)
STANDARD KITS (INCLUDES DATALOGGING OPTION)		
HX559	10058054	4-Gas Instrument
HX560	10058056	3-Gas (LEL, O ₂ , CO)
HX561	10058058	3-Gas (LEL, O ₂ , H ₂ S)



GALAXY™ AUTOMATED TEST SYSTEMS

- Simply place the instrument in the test stand and the system performs the test automatically; no user intervention is required
- Completely standalone; it does not require a computer or network interface for any mode of operation
- For the fully-featured version of *Galaxy™* automated test system, an optional network interface is available for either wired (Ethernet) or wireless (802.11b) networks
- Any web Navigator can be used to access the data of a network-enabled *Galaxy™* automated test system
- Calibration and bump check records, due date for instrument calibration, and the ability to email *MSA* directly for support are just a few of the capabilities of this interface
- Kits below include regulator and cylinder holder
- Other system kits available



Order No.	Mfg. No.	Instrument Type
SA0785	10061785	Solaris® Galaxy kit
SA0786	10061812	Sirius® Galaxy kit
SA0787	10061827	Orion® Galaxy kit



HX545



ORION® MULTI-GAS DETECTORS

- Low-cost, reliable, and easy-to-use portable instrument
- Detects the presence of O₂, H₂S, CO and combustible gas
- One-button calibration
- Long-life battery
- Carbon-filled nylon case
- Tough, durable construction
- Built-in pump
- TIM® system compatibility
- Large, easy-to-read display
- Durable sensors
- Link™ software compatibility



ORION® DETECTOR OPTION KITS

Order No.	Mfg. No.	Description	LEL	O ₂	CO	H ₂ S	NiMH Battery & Charger	Alkaline Battery	Calibration Cap	Internal Pump	10 ft. Line	1 ft. Probe	Orange Cordura Case	Calibration Kit	Black Economy Case	Boot
HX545	10030399	Deluxe 4-gas, Datalog	•	•	•	•	•									
HX546	10025932	Deluxe 4-gas	•	•	•	•	•									
HX547	10025935	Deluxe 3-gas H ₂ S	•	•	•	•	•									
HX548	10025938	Deluxe 3-gas CO	•	•	•	•	•									
HX124	10025931	Industrial 4-gas	•	•	•	•	•									
HX549	10030420	Industrial 4-gas, less jacket	•	•	•	•	•									
HX550	10025934	Industrial 3-gas H ₂ S	•	•	•	•	•									
HX551	10025937	Industrial 3-gas CO	•	•	•	•	•									
HX552	10030398	Economy 4-gas, NiMH	•	•	•	•	•	•								
HX110	10025930	Economy 4-gas	•	•	•	•	•	•								
HX553	10025933	Economy 3-gas H ₂ S	•	•	•	•	•	•								
HX554	10025936	Economy 3-gas CO	•	•	•	•	•	•								

Orion® detectors can be ordered in one of two convenient ways. Either select from the most popular kit combinations above, or contact us in regard to MSA's "Assemble-to-Order" process.



Instruments

FIVESTAR® ALARM MULTI-GAS DETECTORS

- The durable, high-impact case makes it long-lasting, while the advanced ergonomic design and software reduce worker load and simplify operation:
 - Three well-marked, easy-to-use keys
 - Display faces user
 - Industry leading RFI protection
 - Flexible smart sensors
 - Weatherproof-IP54-rated
- The *FiveStar*® alarm's advanced software features mean safer operation:
 - Limits on sensor zeroing
 - Limits on one-button calibration
 - User acknowledges configuration changes
 - Data recording is standard
- The *FiveStar*® alarm saves money:
 - Unbeatable warranty and service
 - Long-life combustible sensor
 - One-button calibration saves training and gas
 - 5-gas capability means one detector can do the job of two detectors
 - Battery gas gauge reduces down time
 - 20-hour NiMH battery option means one battery can do the job of two

- Gas sensors available - you can order the *FiveStar*® alarm with sensors to detect:
 - Combustible gas (0-100% LEL or 0-5% methane)
 - Oxygen (0-25%)
- and up to three of the following gases:
 - Ammonia 0-100 ppm
 - Carbon monoxide 0-2000 ppm
 - Chlorine 0-20 ppm
 - Chlorine dioxide 0-5 ppm
 - Hydrogen sulphide 0-500 ppm
 - Nitric oxide 0-100 ppm
 - Nitrogen dioxide 0-100 ppm
 - Phosphine 0-5 ppm
 - Sulfur dioxide 0-100 ppm

FiveStar® alarms can be ordered in one of two convenient ways. Either select from the most popular kit combinations below, or contact us in regard to MSA's "Assemble-to-Order" process.



HX536



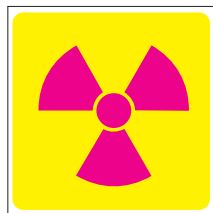
FIVESTAR® ALARM OPTION KITS

Order No.	Mfg. No.	Description	LEL	O ₂	CO	H ₂ S	NiCd Battery	AC Charger	Fast Charger	Calibration Cap	Pulsecheck Pump	10 ft. Line	1 ft. Probe	Leather Jacket	Carrying Case	Calibration Kit
HX536	10018002	Deluxe, 4-gas	•	•	•	•	•	•	•	•	•	•	•	•	•	•
HX537	10018003	Deluxe, 3-gas, CO	•	•	•	•	•	•	•	•	•	•	•	•	•	•
HX538	10018004	Deluxe, 3-gas, H ₂ S	•	•	•	•	•	•	•	•	•	•	•	•	•	•
HX539	10018005	Industrial, 4-gas	•	•	•	•	•	•	•	•	•	•	•	•	•	•
HX540	10018006	Industrial, 3-gas	•	•	•	•	•	•	•	•	•	•	•	•	•	•
HX541	10018007	Industrial, 3-gas	•	•	•	•	•	•	•	•	•	•	•	•	•	•
HX542	10018008	Economy, 4-gas	•	•	•	•	•	•	•	•	•	•	•	•	•	•
HX543	10018009	Economy, 3-gas, CO	•	•	•	•	•	•	•	•	•	•	•	•	•	•
HX544	10018030	Economy, 3-gas, H ₂ S	•	•	•	•	•	•	•	•	•	•	•	•	•	•

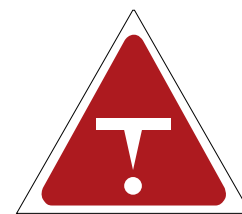
**SEE PAGES
307 TO 314
FOR WARNING
SIGNS**



Compressed Gas



Radioactive



Biohazard



KWIK-DRAW® DETECTOR TUBE PUMPS

- Kwik-Draw® pumps can be used with an assortment of detector tubes
- Used for spot-testing atmospheres for toxic substances
- One-hand operation
- Consistent delivery of a sample draw volume of 100 ml



Order No.	Mfg. No.	Description
HX590	488543	Kwik-Draw® Basic Pump with Remote Sampling Adapter and Carrying Pouch
HX591	487500	Kwik-Draw® Deluxe Pump with Remote Sampling Adapter, Carrying Pouch and End-of-Stroke Indicator

ACCESSORIES

Order No.	Mfg. No.	Description
HX592	73067	Sampling Line, 10 ft
HX593	73068	Sampling Line, 25 ft
HX594	73069	Sampling Line, 50 ft
HX595	87970	Remote Sampling Adapter, required for Sampling Lines
HX596	488780	Solvent Resistant Sampling Line, 25 ft with reel
HX597	488872	Tube Holder, required for 488780 (HX596) Sampling Line
HX598	470321	Flue Gas Kit
HX599	813929	Detector Tube Handbook



DETECTOR TUBES

- All sets are sold in packages of 10 tubes
- Detector tubes for other gases/vapours are available upon request. Contact us with the details on the substance you need to measure



Order No.	Mfg. No.	Substance Measured	Detector Tube Applicable	Measuring Range (ppm)	Threshold Limit Value 1198 ACGIH (ppm)
HX611	497649	Acetaldehyde	Formaldehyde-0.1	5-50	25 (ceiling)
HX612	804405	Ammonia	NH ₃ -2	2-500	25
HX613	800300	Ammonia	NH ₃ -20	20-1000	
HX614	804589	n-Butyl mercaptan	Ethylmercaptan-0.5	1.5-15	0.5
HX614	804589	t-Butyl mercaptan	Ethylmercaptan-0.5	0.8-5	-
HX615	497606	Carbon Dioxide	CO ₂ -100	100-3000	5000
HX616	487333	Carbon Dioxide	CO ₂ -0.1%	0.1-70 Vol.-%	
HX617	803943	Carbon Monoxide	CO-5	5-1000	25
HX618	487334	Carbon Monoxide	CO-10	10-3000	
HX619	487335	Carbon Monoxide	CO-0.3%	0.3-7.0 Vol.-%	
HX620	804133	Chlorine	ClO ₂ -0.05	1-46	0.5
HX620	804133	Chlorine Dioxide	ClO ₂ -0.05	0.05-15	0.1
HX614	804589	Ethyl mercaptan	Ethylmercaptan-0.5	0.5-80	0.5
HX621	492870	Gasoline	Gasoline-30	300	
HX622	803945	Hydrogen Cyanide	HCN-2	2-50	4.7 (ceiling)
HX623	804142	Hydrogen Fluoride	HF-1	1-50	3 (ceiling)
HX624	487339	Hydrogen Sulfide	H ₂ S-1	1-200	10
HX625	487340	Hydrogen Sulfide	H ₂ S-100	100-4000	-
HX614	804589	Isopropyl mercaptan	Ethylmercaptan-0.5	0.5-5.5	-
HX614	804589	Methyl mercaptan	Ethylmercaptan-0.5	0.5-5	0.5
HX626	804140	Ozone	Ozone-0.05	0.05-5	0.05 (ceiling)
HX614	804589	n-Propyl mercaptan	Ethylmercaptan-0.5	0.7-8.0	-
HX627	804135	Styrene	Styrene-10	10-300	20
HX628	487338	Sulfur Dioxide	SO ₂ -1	0.5-25	2
HX629	497662	Sulfur Dioxide	SO ₂ -5	5-120	



Instruments

DETECTOR TUBE INDUSTRY ACTION SETS

• All sets are sold in boxes of 12 tubes



Order No.	Mfg. No.	Set Description
HX600	655864	Agricultural
HX601	655868	Pulp and paper
HX602	710981	Indoor air quality
HX603	655869	Pharmaceutical
HX604	655865	Petroleum
HX605	655867	Mining
HX606	655866	Synthetics
HX607	655933	Chemical Vapour Deposit
HX608	655934	Etching Process
HX609	655935	Epitaxy Process
HX610	655931	Crystal Growth Process

AGRICULTURAL SET

- 4 x Phosphine
- 2 x Sulfur Dioxide
- 4 x Methyl Bromide
- 2 x Hydrogen Cyanide

Order No. HX600

PULP & PAPER SET

- 3 x Chlorine Dioxide
- 2 x Sulfur Dioxide
- 3 x Hydrogen Sulfide
- 2 x Chlorine
- 2 x Ozone

Order No. HX601

INDOOR AIR QUALITY SET

- 2 x Carbon Monoxide
- 2 x Carbon Dioxide
- 2 x Formaldehyde
- 4 x Ozone
- 2 x H₂O (Relative humidity)

Order No. HX602

PHARMACEUTICAL SET

- 3 x Acetic Acid
- 3 x Aromatic HC
- 3 x Qualitest*
- 3 x Hydrogen Cyanide

Order No. HX603

PETROLEUM SET

- 2 x Hydrogen Sulfide
- 2 x Carbon Monoxide
- 2 x Qualitest*
- 4 x Benzene
- 2 x Hexane

Order No. HX604

MINING SET

- 3 x Carbon Monoxide
- 2 x Nitrogen Dioxide
- 3 x Nitrous Fumes
- 4 x Natural Gas/Methane

Order No. HX605

SYNTHETICS MANUFACTURING SET

- 2 x Toluene
- 4 x Qualitest*
- 2 x Ethanol
- 2 x Vinyl Chloride
- 2 x Trichloroethylene

Order No. HX606

SEMICONDUCTOR SETS CHEMICAL VAPOUR DEPOSITION PROCESS

- 3 x Ammonia Tubes
- 3 x CO₂ Tubes
- 3 x Nitrous fumes Tubes
- 3 x H₂S Tubes

Order No. HX607

ETCHING PROCESS

- 4 x Ammonia Tubes
- 4 x Chlorine Tubes
- 4 x Hydrogen Chlorine Tubes

Order No. HX608

EPITAXY PROCESS

- 3 x CO Tubes
- 3 x Hydrogen Chloride Tubes
- 3 x Phosphine Tubes
- 3 x Phosgene Tubes

Order No. HX609

CRYSTAL GROWTH PROCESS

- 6 x Phosgene Tubes
- 6 x Phosphine Tubes

Order No. HX610

*Qualitest: General gas detection tube for combustible gases

See pages
124 to 129 for
MSA respirators





GRADUATED CYLINDERS

METHYL - PENTENE POLYMER

Graduated cylinders are crystal clear and shatterproof. Single scale with raised numeral graduations. Wide bases make cylinders tip-proof. Superior chemical resistance, heat-resistant to 350°F (177°C), no meniscus.



Order No.	Mfg. No.	Cap. ml	Subdiv. ml
HF625	F28690	10	0.2
HF626	F28691	25	0.5
HF627	F28692	50	1
HF629	F28694	250	2
HF630	F28695	500	5
HF631	F28696	1000	10

POLYPROPYLENE

Graduated cylinders have a single scale with raised numeral graduations for easy reading. Octagonal bases make cylinders roll-proof and stable. Non-wetting polypropylene surface creates no meniscus, making reading easier and more accurate. Polypropylene has excellent chemical resistance and is steam autoclavable at 250°F (121°C). Easily converted to mixing cylinders by using polypropylene stoppers.

Order No.	Mfg. No.	Cap. ml	Subdiv. ml
HF618	F28452	10	0.1
HF619	F28453	25	0.5
HF620	F28454	50	1
HF621	F28455	100	1
HF622	F28456	250	2
HF623	F28457	500	5
HF624	F28458	1000	10

COLOUR CODED SAFETY WASH BOTTLES

POLYETHYLENE

Resilient polyethylene bottles are easy to squeeze and return to original shape when released. Bottles feature integrally moulded screw cap and dispensing tube which are available in a choice of three colours. Colours are useful in identifying contents, labs or users. Tapered tip gives a fine stream. Heavier flow is possible by cutting back dispenser tip.



Order No.	Mfg. No.	Colour	Cap ml/oz.	Closure mm
HF753	H116130004	Red	125/4	24
HF754	H116130008	Red	250/8	24
HF755	H116130016	Red	500/16	28
HF756	H116130032	Red	1000/32	48
HF758	H116140008	Yellow	250/8	24
HF759	H116140016	Yellow	500/16	28
HF760	H116140032	Yellow	1000/32	38
HF761	H116150004	Blue	125/4	24
HF762	H116150008	Blue	250/8	24
HF763	H116150016	Blue	500/16	28
HF764	H116150032	Blue	1000/32	38

SMOKE CANDLES

STUDYING AIR FLOW

Smoke mixed with air or gases simplifies the observation of flow patterns in all types of apparatus or wind tunnels, indoor and outdoor areas, to mention a few applications. Heating and air conditioning units can be properly balanced by observing the discharge from grilles or registers and adjusting until satisfactory. Smoke candles are recommended for checking relatively small air capacity units such as exhaust fans.



DETECTING LEAKS

Highly visible smoke readily blends with air and gases, simplifying the observation of airflow patterns or quickly pinpointing leaks. It does not support combustion or leave a visible residue. Leaks visible without smoke can instantly be seen after smoke is added. The odour of escaping smoke also assists in pinpointing leaks. The tedious and time consuming soaping of piping systems and duct work for leaks can be eliminated by inducing sufficient smoke to fill an area approximately twice as large as the area being tested.

HA771 - SMOKE CANDLE

Burns for approximately thirty seconds and generates 4000 cubic feet of smoke. Size: 1 1/2" x 1 1/2"

HB406 - SMOKE CANDLE

Burns for one minute generating 8000 cubic feet of smoke. Size: 1 1/2" x 6"

HB843 - SMOKE BOMB

Generates a big 40,000 cubic feet of smoke while burning for 2 to 3 minutes. Size: 1 1/2" x 6"

HL766 - SMOKE BOMB

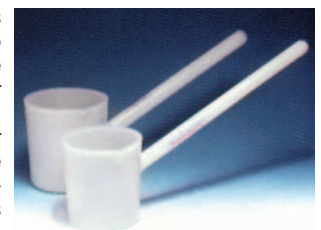
Generates 40,000 cubic feet of smoke over a period of 3 minutes. Double-wicked, furnished with clips for attaching multiple units thereby extending smoke-generating time.

Order No.	Mfg. No.	Description
HA771	1A	Smoke Candles, 1 dozen
HB406	2B	Smoke Candles, 1 dozen
HB843	3C	Smoke Bombs, 1 dozen
HL766	WC3	Double Wicked Smoke Bombs, 1 dozen

LONG HANDLED DIPPERS

POLYETHYLENE

High density polyethylene dippers for sampling from large vats or deep tanks do not corrode or contaminate solutions. 1 1/8" (29 mm) diameter handle is attached to the bowl at a 45° angle and has an end hole for hanging. 12 foot handle is available in one piece or two piece screw-together construction. Other types and sizes made to order.



Order No.	Mfg. No.	Handle Length
16 OZ. BOWL (500 CC):		
HF648	F367800016	3 ft/91 cm
HF650	F367810016	6 ft/183 cm
HF652	F367820016	12 ft/366 cm
32 OZ. BOWL (1000 CC):		
HF649	F367800032	3 ft/91 cm
HF651	F367810032	6 ft/183 cm
HF653	F367820032	12 ft/366 cm



Instruments

FIRST RESPONSE™ GENERAL PURPOSE SMOKE DETECTOR

- Battery powered, 9 V battery (included)
- Suitable for all rooms
- Dual-ionization technology
- Alarm and power test feature
- Operating LED
- Up to 30 days low battery warning
- Battery removal indicator
- Easy installation, mounting hardware included
- 10-year limited warranty (battery excluded)
- Meets applicable standards, ULC listed



Order No.	Mfg. No.	Description	Dia." x D"
SAI776	SF200	Battery Powered	4.4 x 1.5
XB876	EN22	Replacement battery, 9 V, 12/pkg	

CARBON MONOXIDE DETECTORS

- Advanced semiconductor sensing technology
- Instant test/reset feature
- Self-diagnosing circuitry
- Power and alarm light indicators
- Emergency alarm
- Loud 85 dB alarm pattern
- No batteries or replacement sensor required
- Available in 120 V AC plug-in or hardwire
- SD531 comes with standard and octagon mounting plates
- 5-year limited warranty
- ULC listed, CSA approved



CONSTANTLY MONITORS THE AIR TO MEASURE CO LEVELS!



Order No.	Mfg. No.	Description	Dimensions			
			W"	x D"	x H"	
SD530	CO800	Plug-In	3	x 1.7	x 5	
SD531	CO810	Hardwire	3	x 1.7	x 5	

PROPANE GAS DETECTOR

- Monitors, detects, and measures the concentration of propane gas
- Unit is easy to install - simply plug into any standard 120 V AC wall outlet (requires no batteries)
- Loud 85 dB alarm is set to alarm before gas levels reach 25% of lower explosive level
- Instant test feature and self-diagnosing circuitry
- Power and alarm light indicator
- 5-year comprehensive warranty
- Listed to ULC and CSA standards



Order No.	Mfg. No.	Description	Dimensions			
			D"	x W"	x H"	
SD534	LP200	Plug-In	1.4	x 6.5	x 3.5	

NATURAL GAS DETECTOR

- Measures the concentration of natural gas
- Install by simply plugging into any standard 120 V AC wall outlet (requires no batteries)
- Loud 85 dB alarm is set to alarm before gas levels reach 25% of lower explosive level
- Includes a power and alarm light indicator
- Instant test feature and self-diagnosing circuitry
- 5-year comprehensive warranty
- Listed to ULC and CSA standards



Order No.	Mfg. No.	Description	Dimensions			
			D"	x W"	x H"	
SD536	NG200	Plug-In	1.375	x 6.5	x 3.5	



CARBON MONOXIDE METER

- Highly accurate with fast response time
- Measuring range from 1 to 1000 PPM with a 1 PPM resolution
- $\pm 5\%$ or ± 10 PPM basic accuracy (whichever is greater)
- Max, Data hold and Auto shut off
- Utilizes a stabilized electrochemical gas specific fast response sensor
- Audible alarm starts at 35 PPM
- Backlight LCD display
- Dimensions/Weight: 160 x 56 x 40 mm/180 g
- Complete with 9 V battery and carrying case

Order No. HX361

Mfg. No. CO-180

REED



FLAMMABLE GAS LEAK DETECTOR

REED

- Detectable gases: Natural gas and propane/butane
- Conforms to the National and European guidelines
- Optimal operating temperature/humidity: 10 to 50°C, 95% RH or lower
- Operates on two 1.5 V "AAA" batteries
- Batteries provide 4 hours of continuous use
- Dimensions/Weight: 164 x 21 mm/25 g

Order No. HX362 Mfg. No. GD3000



ELECTROMAGNETIC FIELD METER

- Measure electromagnetic radiation from video terminals, fans, faulty wiring, power lines and other equipment
- Measurement range: 0.1 mG to 199.9 mG
- Frequency bandwidth: 30 to 300 Hz (ELF frequency/range)
- 3 1/2 digit LCD, 1/2" (13 mm) high
- Single axis with an accuracy of $\pm 4\%$ at 50-60 Hz
- Sampling rate of 2.5 times/second and overrange indication
- Dimensions/Weight: 135 x 75 x 25 mm/170 g
- Operates on a single 9 V alkaline battery

Order No. HX274

Mfg. No. EMF-822A



SMOKE PUFFER

One of the most convenient and widely used smoke sources. Provides smoke on demand. Simply squeeze the rubber bulb handle for discrete puffs or a continuous stream.

Each reload smoke tube produces 250 to 500 puffs of smoke. After use, unused smoke left in tube is preserved by capping with a breech plug. Sealed glass smoke tubes can be stored indefinitely. Supplied in a convenient carrying case.



Order No.	Mfg. No.	Description
HF586	9020186	Smoke Puffer w/ 10 Smoke Tubes
HF587	9020187	Spare Smoke Tubes, Pkg. of 10
IA005	9020188	Spare Rubber Puffer Bulb

LEAK DETECTION COMPOUNDS

Scientifically formulated to provide instant leak detection results. To locate leaks, simply apply a small stream of leak detection compound towards area being inspected. Compound spreads quickly to provide lasting bubbles or foam at leakage point.

HA149 is ideal for compressed air and gaseous systems testing. Application with a 12" extension tube is quick and easy. A viscosity additive ensures adherence to the surface being tested, providing a longer inspection period. Temperature range: 32° to 200°F/0° to 93°C.

HB464 is formulated for oxygen system testing. Meets Military Specification MIL-L-22567 Type 1. Provides safe, oxygen compatible leak detection results in the location of oxygen leakage. Temperature range: 27° to 200°F/-3° to 93°C.

- No residue
- Non-corrosive
- Non-toxic
- Non-Flammable



Order No.	Mfg. No.	Description
HA149	100/B	Leak Detection Compound, 1 dozen, 8 oz
HB464	300	Leak Detection Compound, 1 dozen, 8 oz



Instruments

HEAVY-DUTY DIGITAL SOUND LEVEL METER

A digital sound level meter that can be used in conjunction with a datalogger.

- Large, easy-to-read LCD display
- Triple range measurement
- "A and C" frequency weighting
- AC output signal for use w/dataloggers
- Electret condenser microphone for high accuracy and long-term stability
- Internal 94 dB calibration
- Data Hold, Max Hold and low battery indication
- Hard carrying case and 2 x 9V batteries included

Order No. HN404 Mfg. No. SL-4022

SPECIFICATIONS

Measuring Range:	30 to 130 dB
Resolution:	0.1 dB
Frequency:	31.5 Hz to 8 kHz
Accuracy:	±1.5 dB
Time Weighting:	Fast/Slow (A & C)
Microphone:	1/2" electret condenser
Output:	AC output
Certifications:	IEC 651 Type 1
Power Supply:	2 x 9V battery
Dimensions:	260 x 87 x 36 mm
Weight:	450g



DIGITAL SOUND LEVEL METER

Rugged and ergonomically built to fit into the palm of your hand.

- Large easy-to-read LCD display
- Triple range measurement
- "A" frequency weighting (same as the human ear)
- Electret condenser microphone for high accuracy and long-term stability
- Meets IEC 651 Type 2 requirements
- Data Hold and low battery indication
- 9V battery included

Order No. HN405 Mfg. No. SL-4010

SPECIFICATIONS

Measuring Range:	35 to 130 dB (A)
Resolution:	0.1 dB
Frequency:	31.5 Hz to 8 kHz
Accuracy:	±1.5 dB
Time Weighting:	Fast
Microphone:	1/2" electret condenser
Output:	-
Certifications:	IEC 651 Type 2
Power Supply:	1 x 9V battery
Dimensions:	250 x 70 x 28 mm
Weight:	250g



SOUND LEVEL METER

- Designed to meet IEC 651 Type 1, DIN 45633, JIS 1502
- 1/2" electric condenser microphone
- Large, easy-to-read LCD readout
- Meter response changing switch
- Function control makes A and C weighted measurements
- MAX HOLD function to store peak values
- 50 dB steps with over/under range indications
- Internal oscillation system
- Calibration potentiometer
- Output socket provided for connection to recorders, analyzers, etc.

Order No. HF978 Mfg. No. K7010

SPECIFICATIONS

Measuring Range:	30 to 130 dB(A); 35 to 130 dB(C)
Resolution:	0.1 dB
Accuracy:	±0.7 dB after calibration @ 94 dB/1000 Hz
Frequency Range:	31.5 to 8000 Hz
Response Time:	Fast: 0.2 sec. for max. Slow: 1.5 sec. for max.
Calibration:	Internal oscillation, 1kHz square wave generator
Output:	0.5 VAC rms f.s., 0.3-1.3 VDC, 10mV/dB
Impedance:	600 ohms
Display:	3-1/2 digit 18mm LCD
Power Supply:	1 x 9V 006P battery
Environmental:	0 to 50°C ; Max. 90% R.H.
Dimensions:	205 x 80 x 35 mm; 12.7 mm dia. microphone
Weight:	280 g

REED



ANALOG SOUND LEVEL METER

Our basic sound level meter combining durability and simplicity.

- Analog display
- Easy one button operation
- Rugged construction
- Battery check with LED indicator
- Measures same frequency as the human ear
- "A" frequency weighting
- Pocket size portability
- Easy to use and easy to read
- Battery included

Order No. HK708 Mfg. No. SL-120

CARRYING CASE Order No. HN413

SPECIFICATIONS

Measuring Range:	40 to 120 dB (A)
Resolution:	-
Frequency:	2 to 5 kHz
Accuracy:	±2 dB
Time Weighting:	Slow
Microphone:	Capacitive
Output:	-
Certifications:	ANSI S1.4 1983 Type 2 and IEC 651 Type 2 graph A
Power Supply:	1 x 2.7V "PX14" battery
Dimensions:	145 x 50 x 30 mm
Weight:	100g

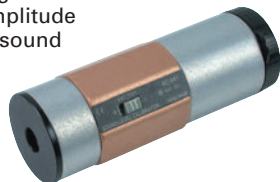


OPTIONAL ACCESSORIES

SOUND CALIBRATOR

- Generates a stable acoustic signal at a controlled frequency and amplitude to verify the accuracy of your sound level meter in the field
- Generates a constant sound pressure level of 94 dB at a fixed frequency of 1,000 Hz

HN406



WIND SHIELD BALL

- Wind shield ball for sound level microphones
- Available for all orders with a 1/2" condenser microphone

Order No.	Mfg. No.	Description
HN406	SC-941	94 dB Sound Calibrator
HN408	SB-01	Wind Shield Ball
HX312	SW-U801-WIN	Software
HX316	UPCB-02	RS-232 Cable
HN416	CA-05A	Soft Carrying Case



HN408



DIGITAL CONTACT/PHOTO TACHOMETER

A multifunctional unit combining both contact and non-contact measurement of RPM.

- Wide range of measurement
- Contact measurement in unit of RPM or in surface speed (i.e. ft/min and m/min)
- High precision
- Last Value, Min, Max w/memory recall button
- Fast sampling time
- Quartz crystal time-base
- Floating demimal
- Includes battery and carrying case

Order No. HF964
Mfg. No. K4010
Photo Mode: 5 to 99,999 RPM
Contact Mode: 0.5 to 19,999 RPM
Surface Speed: 0.05 to 1,999 MPM/0.2 to 6560 FPM
Accuracy: $\pm(0.05\% + 1 \text{ digit})$
Display: 5-digit LCD
Sampling Rate: 1/second
Memory: Min/Max, last value



DIGITAL PHOTO TACHOMETER REED

A laser light source provides for improved accuracy of RPM measurements.

- Non-contact measurement of RPM of rotating objects facilitated by integral light beam
- Recalls Max/Min and last values
- Large, easy to read display
- Autoranging with 0.05% accuracy
- Includes battery and carrying case

Order No. HX385
Mfg. No. ST-6234B
Photo Mode: 2.5 to 99,999 RPM
Accuracy: $\pm(0.05\% + 1 \text{ digit})$
Display: 5-digit LCD



PH/MV/TEMPERATURE METER

- Dual display for pH or mV and temperature
- °C/°F switchable
- Large LCD with 36mm (1.4") high digits
- MAX/MIN/AVG readings stored in memory
- Automatic display hold and out of range indications
- Manual or automatic temperature compensation
- RS-232 serial interface
- Optional data acquisition software
- pH Range/Resolution/Accuracy: 0 to 14 pH/0.01 pH/ $\pm(0.03\% + 2 \text{ digits})$
- mV Range/Resolution/Accuracy: 0 to 1900 mV/1.0 mV/ $\pm(0.5\% + 1 \text{ digit})$
- Temp. Range/Resolution/Accuracy: 0 to 65°C (32 to 149°F) pH / 0.1°C (0.1°F) $\pm 1^\circ\text{C}$ ($\pm 1.8^\circ\text{F}$)

Order No. HX300
Mfg. No. FH-207



DIGITAL CONTACT/PHOTO TACHOMETER

Fast and accurate RPM and surface speed measurements of rotating objects.

- Dual function unit with both contact and non-contact capabilities
- Supplied with adaptors FPM, RPM and surface speed measurements
- Non-contact function utilizes laser light beam for improved accuracy
- Recalls Max/Min and last values
- Large, easy to read display
- Autoranging with 0.05% accuracy
- Includes battery and carrying case

Order No. HX386
Mfg. No. ST-6236B
Photo Mode: 5 to 99,999 RPM
Contact Mode: 5 to 19,999 RPM
Surface Speed: 0.05 to 1999.9 MPM/0.2 to 6560 FPM
Accuracy: $\pm(0.05\% + 1 \text{ digit})$
Display: 5-digit LCD



DIGITAL AUTORANGING ILLUMINOMETER

- Measures to 20,000 Lux; 2,000 Fc
- Auto-ranging
- User selectable Lux/Footcandles
- Min/Max and Data hold function
- Auto shut off and zero adjustment button
- Over range and low battery indication
- Battery included

Order No. HX288
Mfg. No. LM-81LX
Measuring Range: 0 to 20,000 lux; 0 to 2,000 Fc
Resolution: 1, 10 lux; 0.1, 1 Fc
Accuracy: $\pm 5\%$
Display: LCD
Sampling Rate: 1 time/second
Power Supply: 1 x 9V battery
Dimensions: 156 x 60 x 33 mm
Weight: 160 g



DIGITAL ILLUMINOMETER

Easy to operate - simply switch unit to the desired range.

- Triple range in Lux or Foot Candles
- Measures to 50,000 Lux/5,000 Fc
- Data hold function
- Automatic zero adjust
- Over range and low battery indication
- LSI circuitry provides reliability and durability
- Analog output capability to 200mV max
- Separate light sensor allows user to take measurements from an optimum position
- Battery included

Order No. HF979
Mfg. No. K7020
Measuring Range: 0 to 50,000 lux; 0 to 5,000 Fc
Resolution: 1, 10, 100 lux; 0.1, 1, 10 Fc
Display: LCD
Sampling Rate: 0.4 second
Power Supply: 1 x 9V battery
Dimensions: 163 x 70 x 30 mm
Weight: 220 g





Instruments

PROFESSIONAL COOKING STEM THERMOMETER

- 1" diameter pocket thermometer
- Easy-to-read LCD numerals
- Fahrenheit/Celsius switchable
- Wide measurement range: -40° to 302°F and -40° to 150°C
- Accuracy: ±2°F or ±1°C
- Display updates every one second
- Powered by 1.5V watch battery, included
- Free spare battery
- 5" stainless steel stem
- Immerse stem at least 1" for accurate readings
- Handy nylon case with shirt pocket clip included

Order No. HX502

Mfg. No. DT-130



Thermor

WATERPROOF DIGITAL STEM THERMOMETER

- Large, easy to read display
- Waterproof construction
- Calibration adjustment screw
- Measurement Range: -40 to 230°C/-40 to 450°F
- Accuracy: 0 to 230°F: ±1.0°F; below 0°F: ± 3.6°F; above 230°F: ± 3.6°F
- Resolution: 0.1°F/°C
- Display updates every 2 seconds
- Durable 5" stainless steel stem
- 1.5V battery included

Order No. HD558

Mfg. No. PS100



Thermor

DIGITAL HUMIDITY/TEMPERATURE METER

- Compact and lightweight
- Dual LCD display shows ambient temperature and relative humidity
- Humidity Range: 10% to 95% RH
- Temperature Range: 0 to 50°C/32 to 122°F
- User selectable °C/°F
- Data Hold and Min/Max Function
- Battery included

OPTIONAL ACCESSORIES:

Soft Carrying Case

Order No. HN413



SPECIFICATIONS

Order No.

Mfg. No.

Humidity Range:

Humidity Resolution:

Temp. Range:

Temp. Resolution:

Display:

RS-232 Output:

Power Supply:

Dimensions:

Weight:

HX287

LM-81HT

10 to 95% RH

0.1%

0 to 50°C/32 to 122°F

0.1°C/°F

Dual LCD, humidity and temperature

-

1 x 9V Battery

156 x 60 x 33 mm

160 g

REED

INFRARED THERMOMETER/HUMIDITY METER

- Temperature Range: -50 to 500°C/-58 to 932°F
- User selectable °C or °F
- Humidity Range: 0 to 100% RH, 0.1% RH resolution
- Large, easy to read, backlit LCD with dual display
- Max and Hold function, Auto shut off
- Fixed 0.95 emissivity covers 90% of surface applications
- Includes battery and carrying case

SPECIFICATIONS

Order No.

Mfg. No.

Temperature Range:

Accuracy:

Display:

Response Time:

Emissivity:

Distance to Spot Size Ratio:

Resolution:

Dimensions:

Weight:

HX384

ST-616CT

-50 to 500°C/

-58 to 932°F

±2%

Backlit LCD

< 1 second

0.95 fixed

8:1

0.1° up to 200°, 1° over 200°

150 x 72 x 35 mm

210 g



REED

DIGITAL HUMIDITY/TEMPERATURE METER

- Fast response time and quality performance
- Dual LCD, displays ambient temperature and humidity simultaneously
- Humidity Range: 0% to 100%RH
- Temperature Range: -20 to 60°C/-4 to 140°F
- User selectable °C/°F
- Data Hold, Min/Max Function and Auto shut off
- Carrying case and battery included

SPECIFICATIONS

Order No.

Mfg. No.

Humidity Range:

Humidity Resolution:

Temp. Range:

Temp. Resolution:

Display:

RS-232 Output:

Power Supply:

Dimensions:

Weight:

HX375

ST-321

0 to 100% RH

0.1%

-20 to 60°C / -4 to 140°F

0.1°C/°F

Dual LCD, humidity and temperature

-

1 x 9V battery

200 x 45 x 33 mm

200g



REED



THERMOCOUPLE THERMOMETERS

- HX381 is a single input thermometer and HX382 is a dual input thermometer
- Direct or differential measurements to 0.1°C/0.1°F resolution over the entire measurement range
- Accuracy to 0.5%
- Differential Temperature (T1-T2) mode freezes display for convenient viewing (HX382)
- Display maximum reading plus Data Hold
- Scan Function (T1, T2, T1-T2, Max, Hold....) (HX382)
- Large LCD display with backlight
- User selectable °C or °F
- User selectable 0.1°C or 1°C (0.1°F or 1°F) resolution
- Accept K-type thermocouples
- Both orders include 9V battery and holster
- Thermocouple probe extra

SPECIFICATIONS

Order No.	HX381	HX382
Mfg. No.	ST-601B	ST-612
Temperature Range:	-50 to 1300°C	-58 to 2000°F
Resolution:	1°C/°F or 0.1°C/°F	
Accuracy:	±(0.5 % rdg. ± 1°C/±2°F)	
Humidity Range:	0 to 100% RH	
Resolution:	0.1% RH	
Accuracy:	±3.5% RH	
Power Supply:	1 x 9V battery	
Dimensions:	165 x 76 x 43 mm (HWD)	
Weight:	403 g	

HX381



HX382



SURFACE PROBES



- Ribbon-style surface probe
- Maximum Temperature: 400°C

Order No. HN209
Mfg. No. LS-109



- Spring-loaded probe is ideal for high temperature surface measuring requirements
- Extremely fast response time
- Not recommended for use as an immersion probe
- Maximum Temperature: 500°F

Order No. HN210
Mfg. No. LS-139

RIGHT ANGLE SURFACE PROBE



- Unique right angle design allows temperature of hard to reach areas to be taken
- Great for monitoring temperature inside pipes, also flat surfaces, without keeping hands over heated area
- Maximum Temperature: 400°C

Order No. HN211
Mfg. No. LS-104

AIR/GAS PROBE



- Specially designed to measure air or gases in heating and cooling units, ovens and engine exhausts
- Perforated shield permits fast response while providing exceptional element protection
- Maximum Temperature: 800°C

Order No. HN212 **Mfg. No.** LS-103

NEEDLE TIP PENETRATION PROBE



- Medium gauge hypodermic needle tip, used to measure softer food stuffs, rubbers and solids
- Ideal for use in industrial, laboratory and chemical environments
- Maximum Temperature: 800°F

Order No. HN213 **Mfg. No.** LS-134A

GENERAL PURPOSE IMMERSION PROBE



- Used to measure both air or liquids, but is best recommended for immersion applications
- Excellent for checking temperature of oils, water and non-corrosive fluids
- Maximum Temperature: 700°C

Order No. HN214 **Mfg. No.** LS-107



Instruments



HX242



HX243



HX244



HX245



MINI INFRARED THERMOMETER

- Unique flat surface and modern housing design
- Wide temperature range from -50 to 280°C
- User selectable °C or °F
- Built-in laser pointer identifies target area
- Backlighting illuminates display for taking measurements at night or in areas with low background light levels
- Overrange indicator, Auto data hold (when trigger released) and Auto shut off
- Fixed 0.95 emissivity covers 90% of surface applications
- Includes battery and carrying case

SPECIFICATIONS

Order No.	HX242
Mfg. No.	ST-880
Temperature Range:	-50 to 280°C/-58 to 536°F
Accuracy:	±2%
Display:	Backlit LCD
Response Time:	< 1 second
Emissivity:	0.95 fixed
Distance to Spot Size Ratio:	8:1
Resolution:	1°C/1°F
Dimensions:	160 x 82 x 41 mm
Weight:	177 g

HIGH TEMPERATURE INFRARED THERMOMETER

- Temperature range to 1022°F/550°C
- User selectable °C or °F
- Built-in laser pointer identifies target area
- 12:1 distance to spot ratio measures smaller surface areas at a greater distance
- Unique flat surface and modern housing design
- Backlighting illuminates display for taking measurements at night or in areas with low background light levels
- Overrange indicator, Auto data hold (when trigger released) and Auto shut off
- Fixed 0.95 emissivity covers 90% of surface applications
- Includes battery and carrying case

SPECIFICATIONS

Order No.	HX244
Mfg. No.	ST-8818
Temperature Range:	-50 to 550°C
Accuracy:	±2%
Display:	Backlit LCD
Response Time:	< 1 second
Emissivity:	0.95 fixed
Distance to Spot Size Ratio:	12:1
Resolution:	0.1° up to 200°, 1° over 200°
Dimensions:	230 x 100 x 56 mm
Weight:	290 g

MINI INFRARED THERMOMETER

- Unique flat surface and modern housing design
- Wide temperature range from -50 to 550°C
- User selectable °C or °F
- Built-in laser pointer identifies target area
- Backlighting illuminates display for taking measurements at night or in areas with low background light levels
- Overrange indicator, Auto data hold (when trigger released) and Auto shut off
- Fixed 0.95 emissivity covers 90% of surface applications
- Includes battery and carrying case

SPECIFICATIONS

Order No.	HX243
Mfg. No.	ST-882
Temperature Range:	-50 to 550°C/-58 to 1022°F
Accuracy:	±2%
Display:	Backlit LCD
Response Time:	< 1 second
Emissivity:	0.95 fixed
Distance to Spot Size Ratio:	8:1
Resolution:	0.1° up to 200°, 1° over 200°
Dimensions:	160 x 82 x 41 mm
Weight:	177 g

HIGH TEMPERATURE INFRARED THERMOMETER

- High temperature range to 1382°F/750°C
- User selectable °C or °F
- Built-in laser pointer identifies target area
- 12:1 distance to spot ratio measures smaller surface areas at a greater distance
- Unique flat surface and modern housing design
- Backlighting illuminates display for taking measurements at night or in areas with low background light levels
- Overrange indicator, Auto data hold (when trigger released) and Auto shut off
- Fixed 0.95 emissivity covers 90% of surface applications
- Includes battery and carrying case

SPECIFICATIONS

Order No.	HX245
Mfg. No.	ST-8819
Temperature Range:	-50 to 750°C
Accuracy:	±2%
Display:	Backlit LCD
Response Time:	< 1 second
Emissivity:	0.95 fixed
Distance to Spot Size Ratio:	12:1
Resolution:	0.1° up to 200°, 1° over 200°
Dimensions:	230 x 100 x 56 mm
Weight:	290 g