

# Indoor Environment Quality

Universal handheld instruments for the measurement, logging and analysing parameters specific for indoor environments are designed to provide flexibility, versatility and convenience to most demanding of professional users.

- (Depending on connected probes) they provide the measurement and analyses of temperature (air, black globe and contact), air velocity, relative humidity, illuminance, luminance or act as a sound level meter.
- They provide a dew point, a mass flow, a PMV (predicted mean vote), a PPD (predicted percentage of dissatisfied), a WBGT (wet bulb globe temperature), the luminance contrast calculations as well as, the real-time octave and one third octave sound frequency analyses.
- Provision of air temperature, air velocity, relative humidity measurement with only one microclimatic probe at the time.
- Special design facilitates easy handling.
- Optional probe connection with extension cable (illuminance/luminance/sound) or telescopic rod (air velocity, relative humidity and air temperature) available.
- Advanced features: an oversized graphic display 160x160 dots with backlight, a tripod holder for an easy operation, the rechargeable batteries for up to 8 hours of continuous operation, an internal memory to store over 4000 readings, a self-management internal logger, a time and date display and the help menus.
- Powerful logging software provided is used for data downloads to a computer and simplifies the creation of test reports.
- Complies with all major international standards such as EN ISO 7726, ISO 7730, ISO 7243 for IAQ, DIN 5032 (Part 1 Part 7) for luminance and illuminance, EN 12599 for HVAC, IEC 61672 and IEC 61260 Class 1 and Class 2 for sound.
- Target customers: IAQ inspectors, HVAC engineers, safety officers, building managers, industrial hygienists and lab managers.



**Complete system of ISO calibration certification guarantees an overall quality and accuracy especially since the probes and the instrument are calibrated together as an integral device.**

## Multinorm

**New!**

Part No. **MI 6201**



- **Universal all-in-one instrument for measurement of air temperature, air velocity, relative humidity, illuminance, luminance and the Class 1 (Pro Set) or Class 2 (Euro Set and Standard Set) sound analyses.**
- Measurement functions: air temperature, air velocity/multipoint/mass flow calculations, relative humidity/dew point, illuminance and sound level meter and analyser. Completely digitalised Class 1 (Pro Set) or Class 2 (Euro Set and Standard Set) sound level meter with two independent measuring channels compliant with IEC 61672 standard. Each channel can be set with different time and frequency weighting. Multinorm is also real-time octave and one third octave frequency analyser compliant with IEC 61260 standard. Operates in

Two modes: in an on-line reading mode which displays current measurements and in a logger mode, which automatically stores all measurement values per logging interval.

- Additional measurement features are: a luminance measurement, a contrast, a globe temperature, a thermocouple (contact temperature), a PMV (predicted mean vote), a PPD (predicted percentage of dissatisfied), a WBGT (wet bulb globe temperature).
- LabLink PRO PC software with RS232 cable and upgradeable firmware for additional probes. LabLink PRO is used for logged data analysis, charting and reporting. Optional frequency analysis PC software SoundLink PRO is used for sound data analyses, charting and reporting.



- Dimensions (w x h x l): 220 x 115 x 90 mm.
- Mass (without accessories): 0.70 kg.

Standard Set	Part No. MI 6201 ST
- Instrument Multinorm	
- Probe adapter	A 1144
- Universal microclimatic probe	A 1091
- Illumination probe type B	A 1092
- Class 2 sound probe	A 1151
- Plastic shield	A 1158
- Windscreen	A 1157
- Carrying case	A 1133
- LabLink PC software with RS232 cable	A 1166
- Power supply adapter/charger + 6 NiMH batteries	A 1083
- Tripod adapter	A 1129
- Instruction manual	
- Declaration of conformity	
- Product verification data	



Euro Set	Part No. MI 6201 EU
- Standard Set	
- Complete System ISO Calibration Certificate	

Pro Set	Part No. MI 6201 PR
- Euro Set with Class 1 sound probe instead of Class 2 sound probe	



- Completely digitalised Class 1 (Pro Set) or Class 2 (Euro Set) sound level meter with two independent measuring channels compliant with IEC 61672 standard. Each channel can be set to a different time and frequency weighting. FonS is also a real-time octave and one third octave frequency analyser compliant with IEC 61260 standard.
- Operates in two modes: an on-line reading mode which displays current measurements and logger mode, which automatically stores all measurement values per logging interval.

- The measurement functions (where letter X stands for A, C or Z frequency weighting, Y for fast, slow or impulse time weighting applicable to both first and second measuring channels):
  - LXY, a time weighted sound level;
  - LXeq, a time average sound level, or equivalent continuous sound level;
  - LXYmax, a maximum time weighted sound level;
  - LXYmin, a minimum time weighted sound level;
  - LXpeak, a peak sound level;
  - LXE, a sound exposure level;
  - L%, a percentile sound pressure level.
- A windscreen and a sound shield facilitate the outdoor measurements by reducing the wind noise and/or give a protection against the dust or other small particles often found in the air of harsh industrial environments.
- SoundLink LITE PC software is used to download; review and export saved and logged data to other spreadsheet software applications. Optional frequency analysis PC software SoundLink PRO is used for data analyses, charting and reporting.
- Dimensions (w x h x l): 220 x 115 x 90 mm.
- Mass (without accessories): 0.70 kg.

**Euro Set** Part No. MI 6301 EU

- Instrument FonS A 1151
- Class 2 sound probe A 1157
- Windscreen A 1158
- Plastic shield A 1157
- Windscreen A 1157
- Carrying case A 1133
- SoundLink LITE PC software with RS232 cable A 1167
- Power supply adapter + 6 NiMH batteries A 1083
- Tripod adapter A 1129
- Instruction manual
- Declaration of conformity
- Product verification data
- Complete system of ISO calibration certificate



**Pro Set** Part No. MI 6301 PR

- Euro Set with Class 1 sound probe instead of Class 2 sound probe



- Measurement functions for air temperature, air velocity, relative humidity, illuminance and luminance are all found within one device.

- Standard measurement functions: air temperature, air velocity/multipoint/mass flow calculations, relative humidity/dew point and illuminance.
- Additional measurement features: a luminance measurement, a globe temperature, a thermocouple (contact temperature), a PMV (predicted mean vote), a PPD (predicted percentage of dissatisfied), a WBGT (wet bulb globe temperature).
- SensorLink PRO PC software with RS232 cable and upgradeable firmware for additional probes. SensorLink PRO is used for logged data analyses, charting and reporting.
- Dimensions (w x h x l): 220 x 115 x 90 mm.
- Mass (without accessories): 0.70 kg.

**Standard Set** Part No. MI 6401 ST

- Instrument Poly A 1144
- Probe adapter A 1091
- Universal microclimatic probe A 1092
- Illumination probe type B A 1133
- Carrying case A 1133
- SensorLink PC software with RS232 cable A1134
- Power supply adapter/charger + 6 NiMH batteries A 1083
- Tripod adapter A 1129
- Instruction manual
- Declaration of conformity
- Product verification data



**Euro Set** Part No. MI 6401 EU

- Standard Set
- Complete System of ISO Calibration Certificate




Quick reference table

	Pro Set	Euro Set	Standard Set
<b>Multinorm MI 6201</b>	Air temperature Air velocity Relative humidity Luminance Illuminance Sound <b>Class 1</b> Product verification data Complete System of ISO Calibration certificate	Air temperature Air velocity Relative humidity Luminance Illuminance Sound <b>Class 2</b> Product verification data Complete System of ISO Calibration certificate	Air temperature Air velocity Relative humidity Luminance Illuminance Sound <b>Class 2</b> Product verification data
<b>FonS MI 6301</b>	Sound <b>Class 1</b> Product verification data Complete System of ISO Calibration certificate	Sound <b>Class 2</b> Product verification data Complete System of ISO Calibration certificate	
<b>Poly MI 6301</b>		Air temperature Air velocity Relative humidity Luminance Illuminance Product verification data Complete System of ISO Calibration certificate	Air temperature Air velocity Relative humidity Luminance Illuminance Product verification data

Comparison table	Multinorm MI 6201			FonS MI 6301		Poly MI 6401		
	Part No.:	MI 6201 PR	MI 6201 EU	MI 6201 ST	MI 6301 PR	MI 6301 EU	MI 6401 EU	MI 6401 ST
		Pro Set	Euro Set	Standard Set	Pro Set	Euro Set	Euro Set	Standard Set
<b>Features</b>								
<b>Air Velocity</b>	✓	✓	✓	-	-	✓	✓	
Air Flow	✓	✓	✓	-	-	✓	✓	
<b>Relative Humidity</b>	✓	✓	✓	-	-	✓	✓	
Dew point	✓	✓	✓	-	-	✓	✓	
<b>Air temperature</b>	✓	✓	✓	-	-	✓	✓	
Temperature difference	✓	✓	✓	-	-	✓	✓	
<b>K Thermocouple temperature</b>	✓	✓	✓	-	-	✓	✓	
<b>Illuminance</b>	✓	✓	✓	-	-	✓	✓	
<b>Luminance</b>	option	option	option	-	-	option	option	
Contrast	option	option	option	-	-	option	option	
<b>Black globe radiant temperature</b>	option	option	option	-	-	option	option	
<b>Sound</b>	✓	✓	✓	✓	✓	-	-	
Class 1 (IEC1672) SLM	✓	-	-	✓	-	-	-	
Class 2 (IEC1672) SLM	-	✓	✓	-	✓	-	-	
Real time 1/1 octave analysis	✓	✓	✓	✓	✓	-	-	
Real time 1/3 octave analysis	✓	✓	✓	✓	✓	-	-	
<b>Test probes</b>								
<b>A 1091</b> Universal microclimatic probe m/s, %rh, °C	✓	✓	✓	-	-	✓	✓	
<b>A 1127</b> Humidity /Temp probe %rh, °C	option	option	option	-	-	option	option	
<b>A 1092</b> Illuminance probe type B	✓	✓	✓	-	-	✓	✓	
<b>A 1132</b> Luminance probe	option	option	option	-	-	option	option	
<b>A 1128</b> Thermocouple probe	option	option	option	-	-	option	option	
<b>A 1146</b> Class 1 sound probe	✓	-	-	✓	-	-	-	
<b>A 1151</b> Class 2 sound probe	-	✓	✓	-	✓	-	-	
<b>A 1131</b> Black globe thermometer	option	option	option	-	-	option	option	
<b>PC Software</b>								
<b>A 1166</b> LabLink PRO report	✓	✓	✓	-	-	-	-	
<b>A 1134</b> SensorLink PRO report	-	-	-	-	-	✓	✓	
<b>A 1167</b> SoundLink LITE download	-	-	-	✓	✓	-	-	
<b>A 1162</b> SoundLink PRO analyse	option	option	option	option	option	-	-	
<b>Certificates</b>								
Complete System of ISO Calibration Certificate	✓	✓	-	✓	✓	✓	-	
Product Verification Data	✓	✓	✓	✓	✓	✓	✓	

## Optional accessories

	<p><b>Multinorm MI 6201</b></p> <p><b>A 1130</b> - Telescopic rod with 2.5 m cable  <b>A 1127</b> - Humidity &amp; air temperature probe  <b>A 1128</b> - Thermocouple probe type K wire  <b>A 1132</b> - Luminance probe  <b>A 1131</b> - Black globe thermometer  <b>A 1159</b> - Tripod  <b>A 1161</b> - Tripod holder for instrument and black globe  <b>A 1145</b> - Extension Cable  <b>A 1160</b> - Fast cell charger  <b>A 1152</b> - Sound calibrator Class 1  <b>A 1165</b> - Sound calibrator Class 2  <b>A 1162</b> - SoundLink PRO</p>	<p><b>FonS MI 6301</b></p> <p><b>A 1159</b> - Tripod  <b>A 1145</b> - Extension Cable  <b>A 1160</b> - Fast cell charger  <b>A 1152</b> - Sound calibrator Class 1  <b>A 1165</b> - Sound calibrator Class 2  <b>A 1162</b> - SoundLink PRO</p>	<p><b>Poly MI 6401</b></p> <p><b>A 1130</b> - Telescopic rod with 2.5 m cable  <b>A 1127</b> - Humidity &amp; air temperature probe  <b>A 1128</b> - Thermocouple probe type K wire  <b>A 1132</b> - Luminance probe  <b>A 1131</b> - Black globe thermometer  <b>A 1159</b> - Tripod  <b>A 1161</b> - Tripod holder for instrument and black globe  <b>A 1145</b> - Extension Cable  <b>A 1160</b> - Fast cell charger</p>
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