

Indoor Environment Quality

Poly

Universal handheld instrument with custom selectable multi-sensor probes for simultaneous testing of several parameters at the time



Measurements, logging and the analyses of the parameters for the indoor environments (illuminance, temperature, relative humidity and air velocity - all at once

Standards

EN/IEC 61010-1	Safety
IEC 61326	Electromagnetic compatibility
EN 60751	Industrial platinum resistance thermometer sensors.
ISO 7726 Class C	Standard about ergonomics of the thermal environment and instruments for measuring its physical quantities.
EN ISO 7726	Ergonomic of thermal environment - Instruments for measuring physical quantities.
ISO 7730	Moderate thermal environments - Determination of the PMV and PPD indices and specification of the conditions for thermal comfort.
ISO 7243	Hot environments Estimation of the heat stress on working man based on the temperature WBGT index.
EN 60584-1	Thermocouples
EN 12599	Ventilation for buildings
ISO 10526	CIE standard colometric observers
DIN 5032	Photometry, illuminance meters

Probes

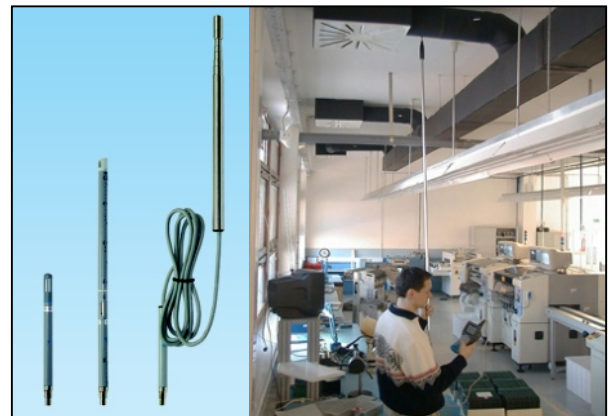
Measurement & logging of illuminance, luminance and environment quantities:

- **Illuminance probe***
- **Universal microclimatic probe***
 - Air Velocity / Multipoint / Mass flow calculations
 - Air Temperature
 - Relative humidity / Dew point.
- **Thermocouple (Contact temperature)***
- **Luminance probe***
- **Black globe thermometer**

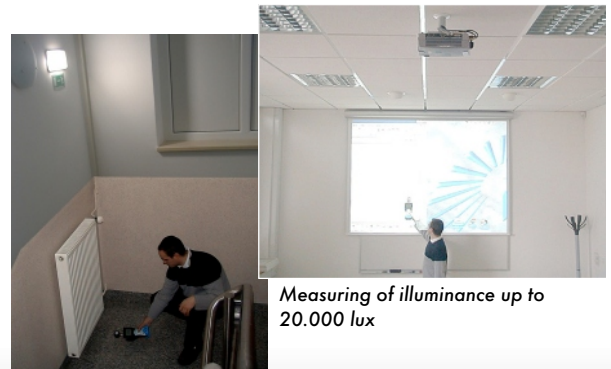
**The probes are connected directly to the instrument - no extra cables needed.*

Advanced features

- **Large graphic display 160 x 160 dots with backlight.**
- **Tripod holder** for easy handling.
- **Rechargeable batteries** for up to 8 hours autonomous operation.
- **Flash stores over 4000 measurement locations.**
- **Autonomous internal logger.**
- **PC SW package SensorLink** on CD with RS 232 cable.
- Upgradable firmware for additional probes.



Testing of ventilation / air conditioning systems (air velocity, temperature, relative humidity) with universal microclimatic probe



Measuring of illuminance up to 20.000 lux

Measuring of illuminance of the emergency lighting with built-in high resolution (0.01 lux) illuminance probe

Powerful Software tools Sensor Link

No	Begin time	End time	Air Temp. Curt [°C]	Air Temp. Min [°C]	Air Temp. Avg [°C]	Air Temp. Max [°C]	Rel. Hum. Curt [% rh]	Rel. Hum. Min [% rh]	Rel. Hum. Avg [% rh]
1	07.05.04 13:21:21	07.05.04 13:21:26	24.4	24.0	24.3	24.9	39.6	39.6	39.6
2	07.05.04 13:21:29	07.05.04 13:21:39	24.4	24.1	24.5	24.8	41.1	39.6	39.4
3	07.05.04 13:21:29	07.05.04 13:21:39	24.2	24.1	24.4	24.9	41.1	39.6	39.4
4	07.05.04 13:21:29	07.05.04 13:21:39	24.2	24.0	24.3	24.9	41.1	39.6	39.4
5	07.05.04 13:21:29	07.05.04 13:21:39	24.1	24.0	24.4	24.7	41.1	39.6	39.4
6	07.05.04 13:21:44	07.05.04 13:21:46	24.3	24.1	24.4	24.6	40.1	40.1	40.2
7	07.05.04 13:21:52	07.05.04 13:21:59	24.5	24.4	24.5	24.9	41.7	39.1	39.9
8	07.05.04 13:21:52	07.05.04 13:21:59	24.2	24.1	24.5	24.8	41.7	39.1	39.9
9	07.05.04 13:21:52	07.05.04 13:21:59	24.4	24.2	24.4	24.7	41.7	39.1	39.9
10	07.05.04 13:21:52	07.05.04 13:21:59	24.6	24.4	24.5	24.9	41.7	39.1	39.9
11	10.05.04 08:38:48	10.05.04 08:38:50	...	...	...	...	...	...	...

Reporting on recorded results, their minimum, maximum and average values



Analyzing of the logged data in tabularic or graphic forms as single or multiple parameters report

Location	Begin time	End time	Air Temp. Avg [°C]	Rel. Hum. Avg [% rh]	Rad. Value	Rad. Unit
Location 1	07.05.04 13:21:21	07.05.04 13:21:26	24.3	39.6	39.6	...
Location 2	07.05.04 13:21:29	07.05.04 13:21:39	24.5	39.4	39.4	...
Location 3	07.05.04 13:21:29	07.05.04 13:21:39	24.4	39.4	39.4	...
Location 4	07.05.04 13:21:29	07.05.04 13:21:39	24.3	39.4	39.4	...
Location 5	07.05.04 13:21:29	07.05.04 13:21:39	24.4	39.4	39.4	...
Location 6	07.05.04 13:21:44	07.05.04 13:21:46	24.4	40.1	40.1	...
Location 7	07.05.04 13:21:52	07.05.04 13:21:59	24.5	39.1	39.9	...
Location 8	07.05.04 13:21:52	07.05.04 13:21:59	24.5	39.1	39.9	...
Location 9	07.05.04 13:21:52	07.05.04 13:21:59	24.4	39.1	39.9	...
Location 10	07.05.04 13:21:52	07.05.04 13:21:59	24.5	39.1	39.9	...
Location 11	10.05.04 08:38:48	10.05.04 08:38:50	...	...	...	...

On-line monitoring and data recording

Technical specifications - measuring probes

Probe	Measuring range	Accuracy	Resolution	Sensor type
Universal microclimatic probe A 1091				
Air velocity	0.05 + 9.99 m/s	±(0.05 m/s + 5 % of r.)	0.01 m/s	HFA (hot film Anemometer)
Working temperature range: -20 + +60 °C	10.0 + 20.0 m/s	±5% of r.	0.1 m/s	
Air temperature	-20 °C + +60 °C	±0.2 °C at 25 °C	0.1 °C	Resistive
Maximum humidity:	100 % RH	±0.5 °C (over working range)		
Relative Humidity	0 + 100 % RH	±3 % RH (0 to 10 % RH)	0.1 % RH	Capacitive
Working temperature range: -20 + +60 °C		±2 % RH (10 to 90 % RH)		
		±3 % RH (90 to 100 % RH)		
Humidity & Air temperature probe A 1127				
Relative Humidity	0 % + 100 % RH	±3 % RH	0.1 % RH	Capacitive
Working temperature range: -20 + +60 °C				
Air temperature	-20 + +60 °C	±0.5 °C	0.1 °C	Resistive
Maximum humidity:		Standard: EN 60751		
100 % RH				
Illuminance probe A 1092				
Type B	0.01 lux + 19.99 lux		0.01 lux	Silicon photodiode
Maximum humidity:	20.0 lux + 199.9 lux	±(8 % of r. + 2 dig.)	0.1 lux	with V(λ) filter
95 % RH			1 lux	
Working temperature range: 0 + +40 °C	200 lux + 20 000 lux	Standard: DIN 5032 class B		
Thermocouple probe A 1128				
Type K	-40 °C + 1370 °C	-40 + +9°C ±(3°C + 1 dig.)	0.1 °C	Thermocouple
Maximum humidity:		+9 + 400°C ±(1 % + 1°C)		
95 % RH		401 + 1370°C ±(3 % of r.)		
		Standard: EN 60584-1		
Luminance probe A 1132				
Class B	0.1 cd/m2 to 39.9 cd/m2	±(0.2 cd/m2 + 8% of r.)	0.1 cd/m2	Silicon photodiode
Working temperature range: -20 + +40 °C	40 cd/m2 to 399 cd/m2	±(8% of r.)	1 cd/m2	with V(λ) filter
Maximum humidity:	400 cd/m2 to 3999 cd/m2	±(8% of r.)	1 cd/m2	
100 % RH	4000 cd/m2 to 40000 cd/m2	±(8% of r.)	1 cd/m2	
		Standard: DIN 5032 class B		
Black globe thermometer A 1131				
	10 °C to 49.9 °C	±0.5 °C		
Maximum humidity:	50 °C to 84.9 °C	±1.0 °C	0.1 °C	Resistive
100 % RH	85 °C to 120 °C	±1.5 °C		
		Standard: ISO 7726 class C		

Ordering information

Standard Set Part No. MI 6401

- Instrument Poly A 1144
- Probe adapter A 1091
- Universal microclimatic probe A 1092
- Illumination probe type B A 1132
- Carrying case A 1133
- SensorLink PC software with RS232 cable A1134
- Power supply adapter + 6 NiMH batteries A 1083
- Tripod adapter A 1129
- Instruction manual
- Declaration of conformity
- Product verification data



Ero Set Part No. MI 6401 EU

- Standard Set
- Complete System of ISO Calibration Certificate

Optional accessories



- Part No.
- A 1130** - Telescopic rod with 2.5 m cable
 - A 1127** - Humidity & air temperature probe
 - A 1128** - Thermocouple probe type K wire
 - A 1132** - Luminance probe
 - A 1131** - Black globe thermometer
 - A 1159** - Tripod
 - A 1161** - Tripod holder for black globe
 - A 1145** - Extension Cable
 - A 1160** - Fast cell charger

