

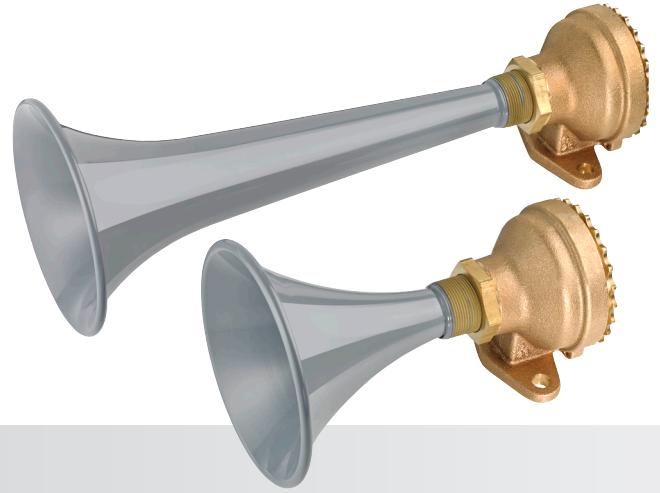
# Makrofon



# Technical data of our standard devices

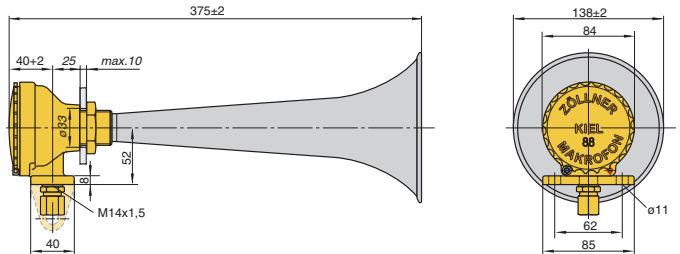
ZÖLLNER Makrofons are diaphragm sound transmitters operating on compressed air for acoustic signals in rail traffic and shipping.

For decades ZÖLLNER Makrofons have proven their reliability worldwide.



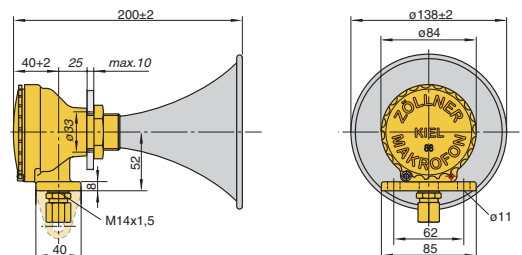
## Strong points

- EBC Certification
- EG Conformity
- international approvals
- high quality material and workmanship, made in Germany
- corrosion-resistant
- made entirely of fire resistant material: housing - brass, horn - steel
- simple but well-engineered construction
- durable
- virtually maintenance-free
- low life cycle costs
- economic air consumption
- temperature range: - 25 °C to + 70 °C
- standard frequencies according to UIC 370+/-10 Hz and 660+/-15 Hz
- standard frequencies according to EN 15153-2: 311 +/- 20 Hz, 370 +/- 20 Hz, 470+/-25 Hz, 622+/- 30 Hz and 660 Hz +/- 30 Hz
- broad frequency spectrum for other requirements: eg. 220, 440 or 808 Hz
- sound pressure level 120 –125 dB(A) at 5 m range in front of the horn
- implementation of demanding customer requirements
- adaption of special sound pressure levels possible
- consideration of specific installation circumstances
- heating system meeting all requirements of winter conditions
- protective grid or net, valves and air filter
- assistance with sound insulation
- electrically controlled Makrofon is also available



## M75F/ 370.1UIC

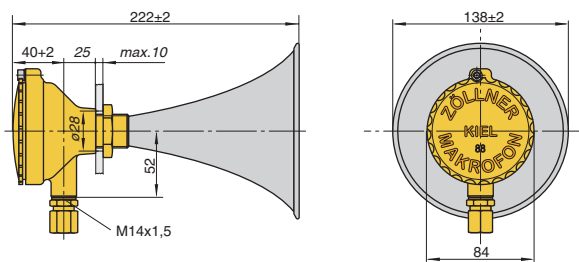
frequency (Hz)	sound level		air pressure (bar)	air flow rate (Nl/sec. -8 bar)	pipe connection (mm)	material housing	material horn	weight (kg)
	(dB(A)) 1m	(dB(A)) 5m						
370±10	134-139	120-125	7-10	13,3	ø10 x 1	brass	steel	ca. 1,6



## M75F/ 660UIC

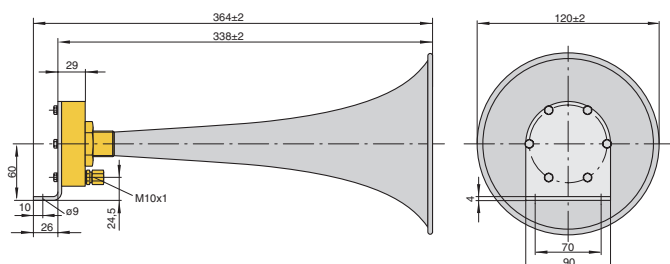
frequency (Hz)	sound level		air pressure (bar)	air flow rate (Nl/sec. -8 bar)	pipe connection (mm)	material housing	material horn	weight (kg)
	(dB(A)) 1m	(dB(A)) 5m						
660±15	134-139	120-125	7-10	11,5	ø10 x 1	brass	steel	ca. 1,27

We are Q1-supplier and certified acc. to DIN EN ISO 9001.



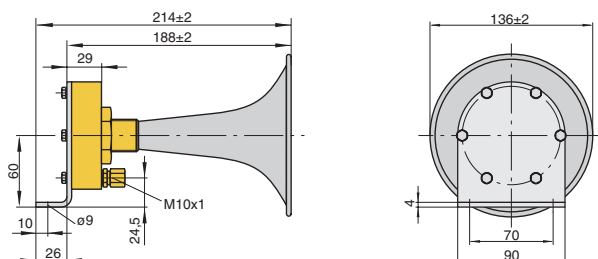
frequency (Hz)	sound level		air pressure (bar)	air flow rate [Nl/sec. -8 bar]	pipe connection [mm]	material housing	material horn	weight (kg)
	(dB(A)) 1m	(dB(A)) 5m						
660±15	134-139	120-125	7-10	7,5	ø10 x 1	brass	steel	ca. 1,05

## M75/ 660UIC



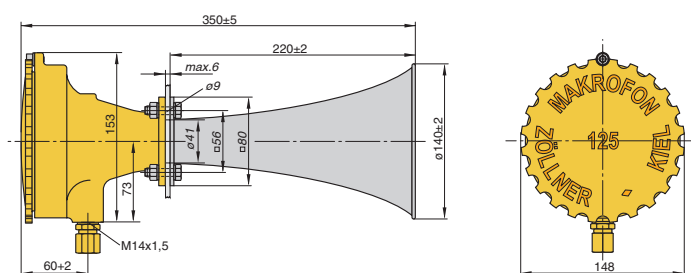
frequency (Hz)	sound level		air pressure (bar)	air flow rate (Nl/sec. -8 bar)	pipe connection (mm)	material housing	material horn	weight (kg)
	(dB(A)) 1m	(dB(A)) 5m						
370±10	134-139	120-125	7-10	11,3	ø10 x 1	brass	steel	ca. 1,65

## ZM75/ 370.1UIC



frequency (Hz)	sound level		air pressure (bar)	air flow rate (Nl/sec. -8 bar)	pipe connection (mm)	material housing	material horn	weight (kg)
	(dB(A)) 1m	(dB(A)) 5m						
660±15	134-139	120-125	7-10	10	ø10 x 1	brass	steel	ca. 1,45

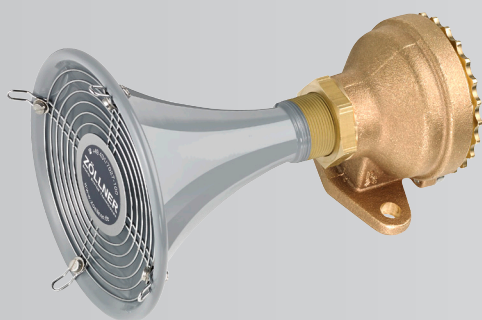
## ZM75/ 660UIC



frequency (Hz)	sound level		air pressure (bar)	air flow rate (Nl/sec. -8 bar)	pipe connection (mm)	material housing	material horn	weight (kg)
	(dB(A)) 1m	(dB(A)) 5m						
370±10	134-139	120-125	7-10	12,5	ø10 x 1	brass	steel	ca. 4,5

## M125/ 370UIC

## Your benefit: The ZÖLLNER Makrofon



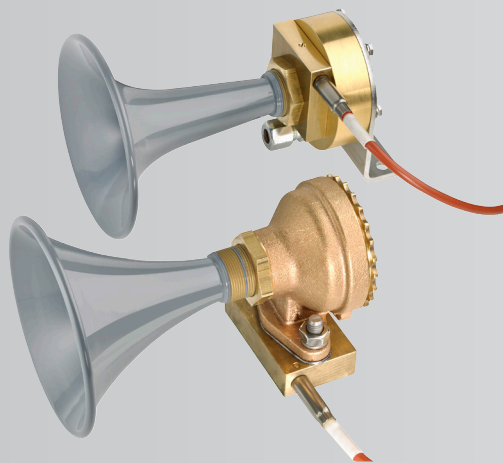
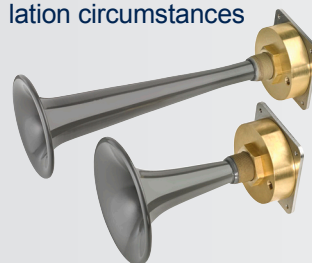
### Protection

to safeguard against dirt we offer the following options:

- **protection net** (not illustrated) and
- **protection grid** (see figure left).

### Strong Points

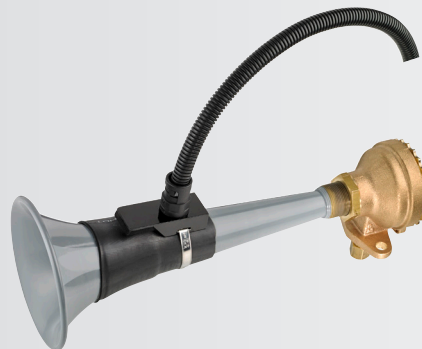
- realization of special customer requirements
- consideration of special installation circumstances



### Heating

We offer heating systems designed to deal with all possible winter conditions. They are suitable for refitting on all Makrofonen and are controlled by an external thermostat.

- **flange and housing heating** (see figure left)
- **sound horn heating** (see figure right).



### Sound Insulation

Requirement according to TSI Noise:

When operating the Makrofon, the sound pressure level in the engineer's ear may not exceed 95 dB(A). The ZÖLLNER individual sound insulation offers maximum protection of the engineer in compliance with the UIC 644 and EN 15153-2.

e.g. „special housing for integration into the bodywork“ (see figure)

- substantial reduction of the sound pressure level in the driver's cab when signalling.