Line Array Microphones in use
Company Configuration

Georg Neumann KG in Gefell
founded as Georg Neumann & Co. in Berlin 1928,
situated in Gefell since 1943

Microtech Gefell GmbH
only daughter company
MICROTECH GEFELL
microphones & acoustic systems - founded 1928 by Georg Neumann

Michael Militzer
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Non Directional Microphone

pressure
= unidirectional
physical size

(scalar)

pressure sensor type (without directional sensitivity)
measurement microphone
Directional Microphone

pressure gradient sensor type (directional sensitivity)
no measurement microphone
Effects between moving Membrane and Air in the Capsule Body (Actuator Pressure Response)

- movement of air (streaming)
- more holes of same size or bigger holes

- movement of air (streaming + compression)
- less holes of the same size or smaller holes
KEM 975

• Multi capsule condenser microphone system
• Broad cardioid pattern to cover wide or moving sound sources
• Optimum positioning using visual indicators
• Suppression of undesirable reflections on the vertical axis
Function

- Developed in cooperation with the IRT
- 8 small membrane condenser capsule microphone
- Separate mounting of capsules and preamp
Function

- cardioid pattern in horizontal axis
- coverage angle horizontal 120°
- vertical pattern like a shotgun
- coverage angle vertical 30°
Function

• Line array microphone
  – Maximum dimension limits directivity at low frequencies
  – Ratio: Wavelength to maximum dimension and directivity
  – Example: Required microphone length

  – At 630Hz the required length is 28cm

  – At 100 Hz the required length is over 1.7m
    (more than six times longer than 28cm)
Directivity

Level (dB) vs Frequency (Hz)

- KEM 970
- KEM 975 + delta capsule
vertical characteristic, at 400Hz

horizontal characteristic at 400 Hz

KEM 975

KEM 975
KEM 975 with Delta Capsule
Function

- separate recording of high, middle and low frequencies
Function

- signal mixing
Function

- signal mixing
Function
Function

- nearly frequency independent polar pattern
Applications

- on stages
- on presenter desks
- as table microphone
- radio an tv- production
- video conferencing
Applications

- compensate level changing
German State Opera Berlin
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Gewandhaus Leipzig
Spot microphone:
Wanted: Choir signal
Unwanted: Orchestra / diffuse sound
Speakerdesk

- reject unwanted noise
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Conference

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M 372
1/4” Measurement Microphone
- Frequency range 20Hz - 20kHz
- Free-field
- Dynamic range 90dB - 120dB
- Supply 5V DC...42V DC

Analyzer – App from DSP mobile
More information and download at:
https://itunes.apple.com/de/app/...312fnt=

M 373 + XL 2

Soundbook
Original research:

Dipl. Ing. Sebastian Goossens
IRT - Institut für Rundfunktechnik, München

Dipl. Ing. Udo Wagner
Microtech Gefell GmbH
Gefell
Thank you for your Attention

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