

## **Technical Description**

### **Pressure Chamber Loudspeaker**

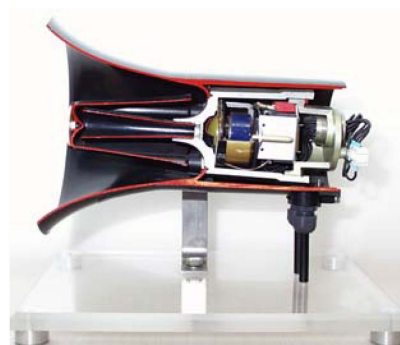
**25 Watt / 100V**

**explosionproof**

**L.-No. 4 970 0**

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### **1. General Information**

Explosionproof pressure chamber loudspeakers can be used in locations which are explosive by flammable materials of all kind. They can be used in all explosive zones 1, 2, 21, 22 areas and for all temperature classes. Generally, they are used as public address speakers over large distances, under rough operating conditions and outdoors. The pressure chamber speakers are outstanding for their very high efficiency, excellent speech reproduction and good directional output. Accentuation of the upper frequencies in the transmitted range especially contributes to the brilliant speech reproduction.

Besides central speaking over power amplifiers it is possible to use them as connection to the intercom call station for local PA purposes.

This approval is documented by the Physical-Technical Federal Agency (PTB) with the EC-Type-Examination Certificate PTB 00 ATEX 1060 and by the identifier

II 2G Ex de IIC T6 and II 2D Ex tD A21 IP65 T80°C.

- Identification: II 2G Ex de IIC T6 and II 2D Ex tD A21 IP65 T80°C

*Conditions in a potentially explosive atmosphere:*

<b>II</b>	<b>=</b>	<b>Use above ground</b>	
<b>2G</b>	<b>=</b>	<b>Hazardous area “Zone 1 and Zone 2” Combustible substances: Gases, vapours</b>	<b>Areas in which an explosive atmosphere consisting of gases, vapours or mist is likely to occur from time to time (Zone 1) Areas in which an explosive atmosphere consisting of gases, vapours or mist is not likely to occur, and if it does, is likely to occur only rarely and for short periods of time (Zone 2)</b>
<b>2D</b>	<b>=</b>	<b>Hazardous area “Zone 21 and Zone 22” Combustible substances: dusts</b>	<b>Areas in which an explosive atmosphere consisting of a mixture of dust and air is likely to occur from time to time (Zone 21) Areas in which an explosive atmosphere consisting of airborne dust is not likely to occur, and if it does, is likely to occur only rarely and for short periods of time (Zone 22)</b>

<b>Ex</b>	<b>=</b>	<b>Produced according to EN 60079 resp. EN 61241</b>
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*Protective principle:*

<b>d</b>	<b>=</b>	<b>Pressure-proof encapsulation</b>
<b>e</b>	<b>=</b>	<b>Increased Safety</b>
<b>tD</b>	<b>=</b>	<b>Protection by enclosure</b>

*Classification of gases an vapours:*

<b>IIC</b>	<b>=</b>	<b>Explosion sub-groups</b>
<b>T6</b>	<b>=</b>	<b>Temperature class, ignition temperature of gases and vapours &gt;85 to ≤100°C (permissible temperatures for electrical apparatus 85°C)</b>

*Temperatue class and safety class dust protection:*

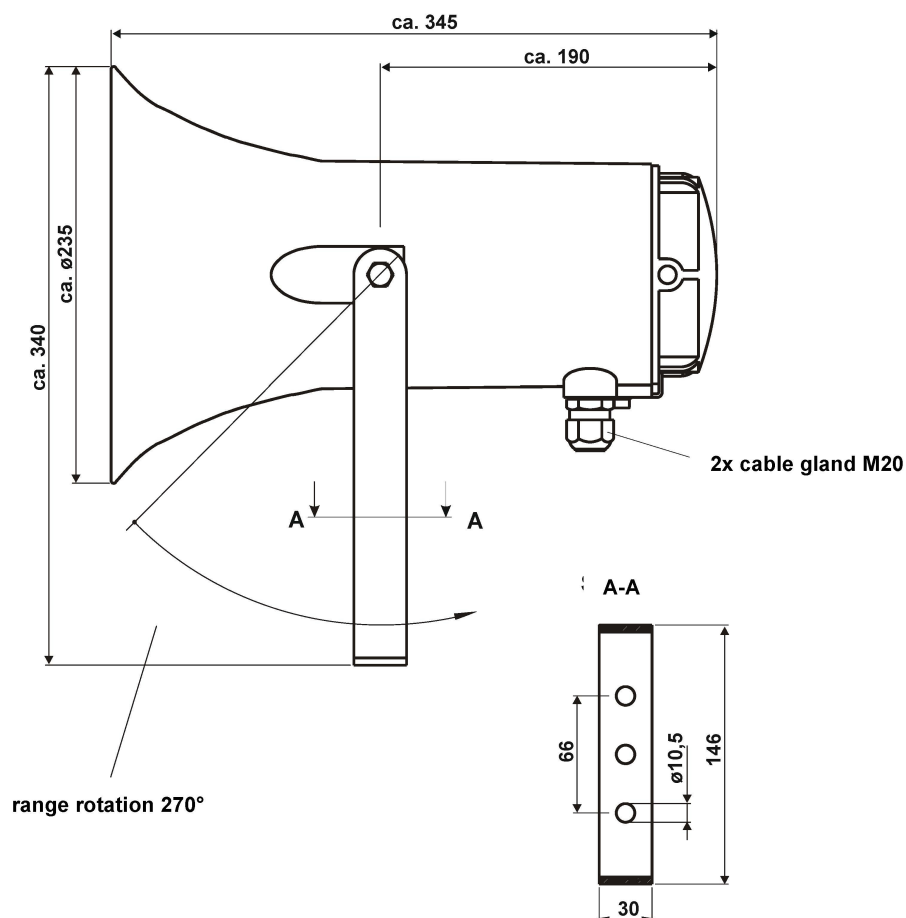
<b>T80°C</b>	<b>=</b>	<b>Maximal surface temperature 80°C</b>
<b>IP65</b>	<b>=</b>	<b>6 = Dust-tight. No ingress of dust. 5 = Protected against water jets. Water projected in jets against the enclosure from any direction shall have no harmful effects.</b>
<b>A21</b>	<b>=</b>	<b>Appropriate for Zone 21</b>

## 2. Construction

The corrosionproof, dust and water-tight casings are made of conductive plastics (Vestamid). They do not need coating, are maintenance free and can be mounted easily. Mounting at their operational place is done by swing mounting brackets. These brackets and the fixing screws of the casing – the only metal parts exposed outwards – are made of stainless steel. The loudspeakers are weatherproof, lightweight and heat resistant.

The terminal section at the rear is accessed fast and easily by opening a bayonette-type end cap. It has two cable glands for loudspeaker cables, permitting several loudspeakers to be used without having to install further junction boxes.

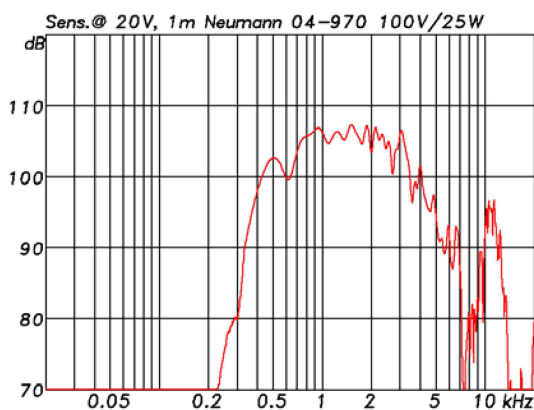
The operating system, including transmitter and electrical components, is encapsulated pressureproof. Additional safety is guaranteed by a resettable heat shield. The complete speaker system is exchangeable. The exponential horn of sturdy design is double layered. The explosionproof pressure chamber speakers can be matched to 100 V amplifier outputs at different power settings.



### 3. Diagrams

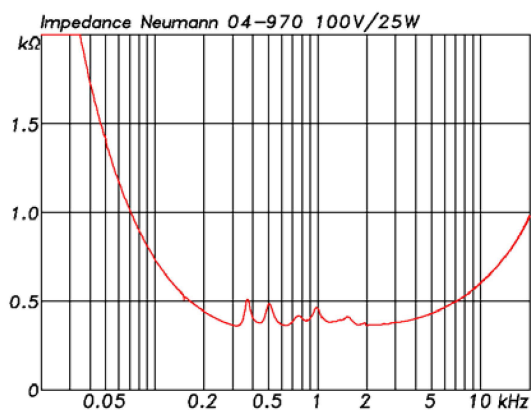
#### - Frequency response

x-axis: frequency in Hz  
y-axis: Sensitivity in dB  
Sens.: for 1W/1m resp. 20V<sub>eff</sub>/1m



#### - Impedance measurement (amplitude)

x-axis: frequency in Hz  
y-axis: impedance in Ohm  
nominal impedance: 400 Ohm  
minimum: 357 Ohm (316 Hz)



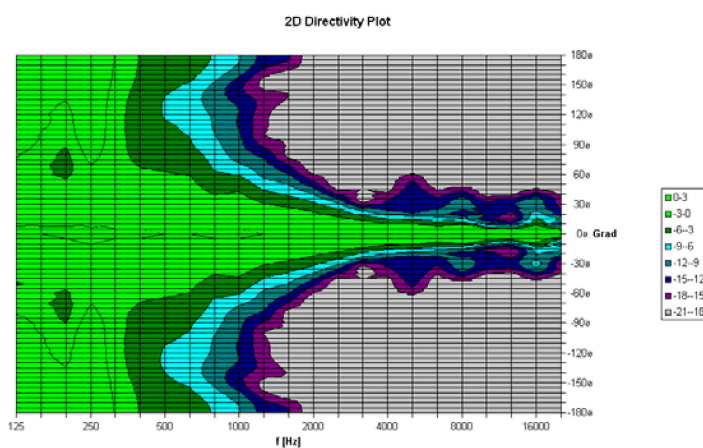
#### - Maximum level

x-axis: frequency in Hz  
y-axis: max. SPL in 1m  
performance: 25W



#### - Isobars (1/3 Oct. smoothing)

x-axis: frequency in Hz  
y-axis: angle in °

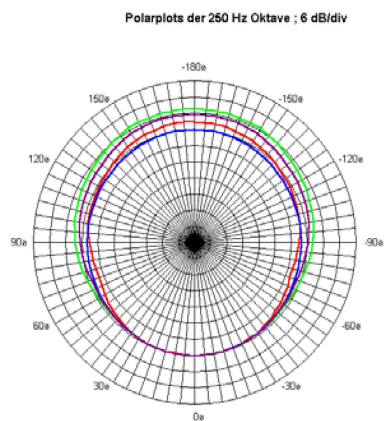




## - Polar diagrams

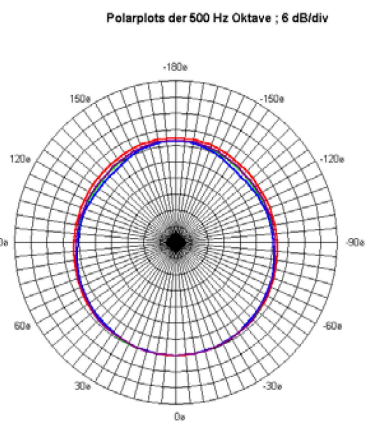
250Hz

Scaling: 6dB/div



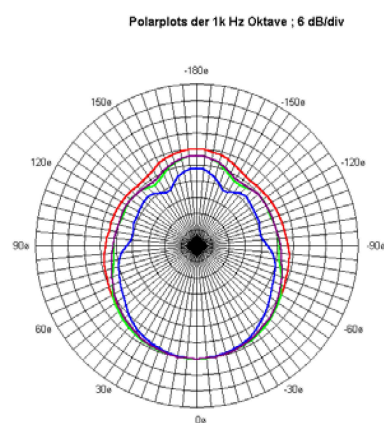
500Hz

Scaling: 6dB/div



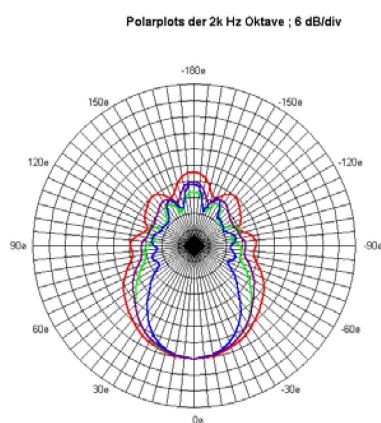
1000Hz

Scaling: 6dB/div



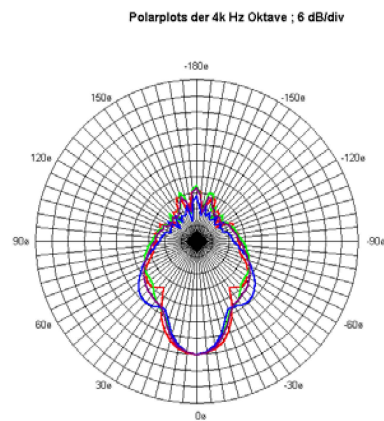
2000Hz

Scaling: 6dB/div



4000Hz

Scaling: 6dB/div



## **4. Technical data**

Rated capacity:	25 W
Switchable power matchings for:	1, 3, 6, 8, 12, 25 W
Rated impedance of the moving coil:	10000, 3333, 1667, 1250, 833, 400 $\Omega$
Frequency range:	300 ... 7000 Hz *
SPL (1 W/1 m):	103 dB +1dB / -3dB *
SPL (25 W/1 m):	115 dB +1dB / -3dB *
Ambient temperature:	-20 to +50 °C
Mounting:	swing mounting bracket with mounting holes
Casing:	conductible plastic
Colour:	black
Dimensions, D x L:	235 x 345 mm
Weight:	4 kg
Protection class approval:	PTB 00 ATEX 1060 II 2 G Ex de IIC T6 and II 2D Ex tD A21 IP65 T80°C
Protection class:	IP 65; RWTÜV no. 970/91
Accessories:	Hook wrench art.-no. 97 9 4410 001 5

\* s. diagrams