



HÖRMANN Warnsysteme GmbH

Product Catalogue



HÖRMANN
Warnsysteme



WARNING AND NOTIFICATION

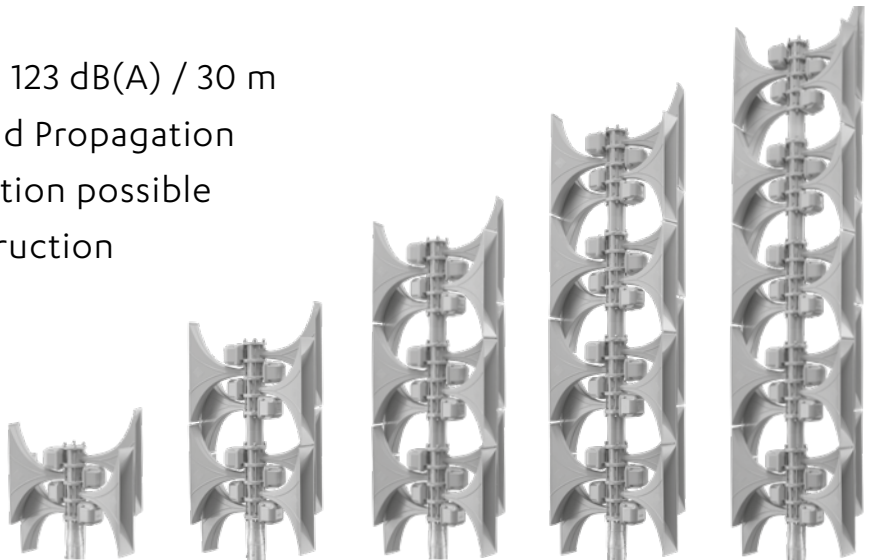
Electronic Siren ECN-D

- Latest digital technology
- Durable and reliable technology
- Low battery consumption
- Simple maintenance thanks to 19-inch standard
- Spare parts guarantee for at least 10 years
- Extensive service network

Our electronic sirens are the result of over 60 years of expertise in the development and production of siren warning systems ‚Made in Germany‘. An extensive service network, high product quality and long-standing customer relationships distinguish us as a reliable partner.

Siren Head

- Sound Pressure Level up to 123 dB(A) / 30 m
- 360° Omnidirectional Sound Propagation
- Directional Sound Propagation possible
- Modular Siren Head Construction
- Weatherproof Siren Horns
- Installation with Pole on Building, Installation with Mast on Ground



The Concept of the Electronic Siren

Latest technology combined with our long time experience in siren development has led to the new siren generation ECN-D (electronic siren with digital amplifiers). The electronic siren ECN-D, supplied by inbuilt batteries for independence from external power supply during emergency conditions, offers local and remote operations, activation of 9 custom-sized Alarms, 12 customized Messages and Live PA Announcements, a variety of inbuilt test routines; advantages and features already known for the long time proven electronic siren ECN.

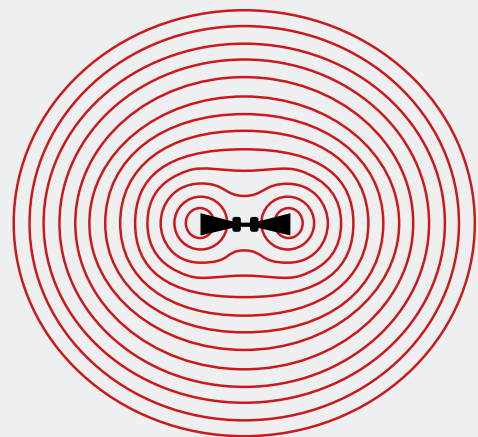
Use of new fully digital amplifiers increase the efficiency to above 97%. At the same time, energy consumption, weight and space requirement of the electronic cabinet are significantly reduced. Modular design, variable interfaces and the strict compliance with technical standards, make it possible to take special customer requirements into account and offer the best prerequisites for a reliable, customized siren warning system.

Acoustic – 360° Omnidirectional Sound Propagation

To assure a 360° sound propagation pattern for siren head installations in the field, the siren head will be split in two channels, which are assembled in 180° opposite direction. The possibility of acoustic neutralisation by overlapping the sound waves is eliminated by generating the alarms with different fundamental frequency for the two channels.

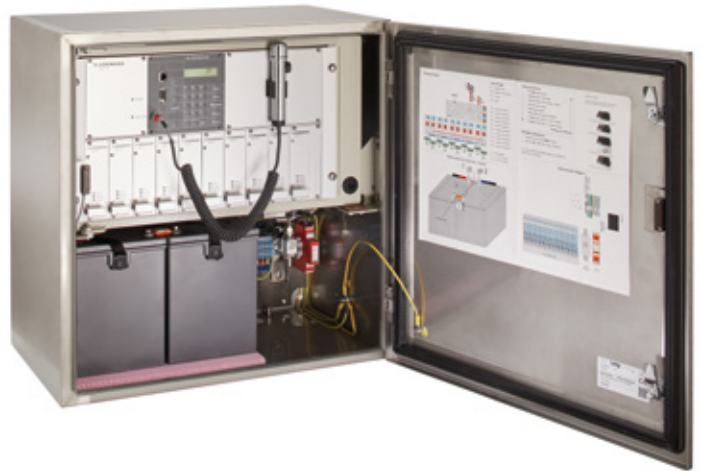
HÖRMANN designed and developed the horn for the ECN siren using and taking into consideration physical and acoustic laws, to achieve best propagation of the sound.

The 360° omnidirectional sound propagation pattern is created upon diffraction of sound on the slit of the siren horn. This physical effect allows sound penetrating the acoustic shadow.



Siren Cabinet

- Activation of Alarms, Voice Messages
- 19" Technology with Swing Frame
- Easy Expansion and Adaption
- Batteries 24 VDC for independence from external Power Supply
- 230 VAC or 110 VAC +/- 10% and / or Solar Power Supply
- Installation on Wall / Pole / Mast
- Minimum Maintenance Requirements



Class-D Amplifier PAD / 8

- Output Power 300 Watt at 5-7 Ohm
- Bandwidth 100 Hz – 20 kHz
- Efficiency above 97%
- Distortion less 4%
- Overload Protection
- Short Circuit Protection
- Status LEDs
- 19" Plug-in Module, 8 HP
- Weight 0,3 kg

Siren Control Processor CP1+

- Embedded ARM7 CPU
- RTX-OS Realtime Multitasking Operating System
- HÖRMANN Process System Interface
- Diverse Interfaces: Ethernet (TCP/IP), Digital Radio, GSM/GPRS, Fibre Optic, Satellite, RS232/RS485
- LCD Display to show all Operating Steps and Results
- Robust Foil Keypad as Input Device for all Operations
- SD-Card Reader for Software Update (for Update of Alarms and Messages)



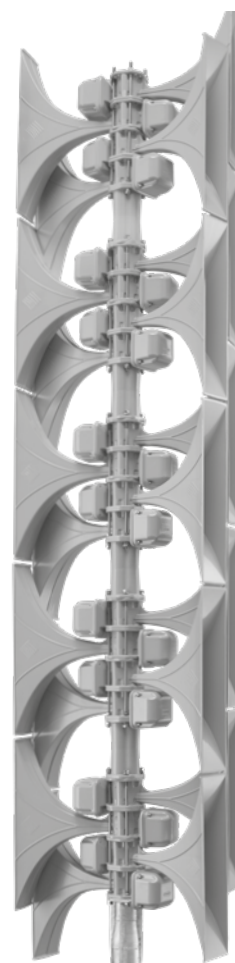
ELECTRONIC SIREN	600-D	1200-D	1800-D	2400-D	3000-D
Sound Pressure Level (SPL)	109 dB(A) / 30 m	115 dB(A) / 30 m	118 dB(A) / 30 m	121 dB(A) / 30 m	123 dB(A) / 30 m
Number of Horns / Drivers	4	8	12	16	20
Head Dimension (W x H x D) in mm	280 x 960 x 840	280 x 1660 x 840	280 x 2260 x 840	280 x 2900 x 840	280 x 3550 x 840
Weight Siren Head	28 kg	59 kg	89 kg	121 kg	152 kg
Windload (160km/h)	522 N	1064 N	1614 N	2200 N	2650 N
Number of Class-D Amplifiers	2	4	6	8	10
Weight Siren Cabinet in kg (incl. Batteries)	82 kg	83 kg	84 kg	85 kg	86 kg

SYSTEM

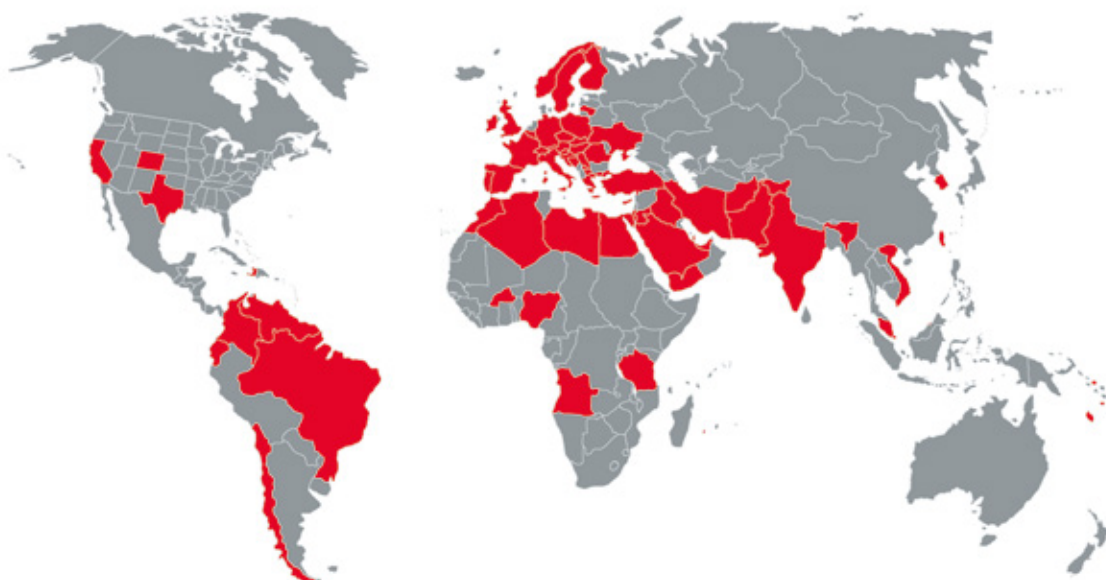
Fundamental Frequency	415 Hz / 425 Hz
Alarms (Warning Tones)	9 (customized)
Messages (Pre-recorded Voice)	12 (customized)
Standby Time	up to 7 days
Batteries Capacity during 48h without charge	up to 20 minutes activation
Material of Horns	Aluminium (Alloy)

SIREN CABINET

Operating Voltage / Batteries	24 VDC
Mains Power Supply (single phase)	230 VAC or 110 VAC +/- 10% optional
Solar Power Supply	
Maximum Charging Current	4 A
Cabinet Dimensions (W x H x D)	600 x 600 x 350 mm
Protection Class	IP66
Ambient Temperature Range	-25°C ... +65°C



LOCATIONS



HÖRMANN Warnsysteme GmbH

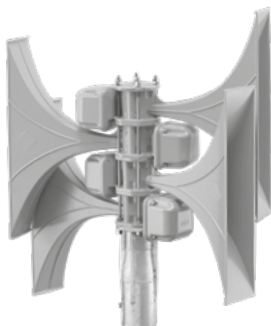
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HÖRMANN
Warnsysteme

Electronic Siren ECN 600-D



SIREN HEAD

Siren head consisting of self-supporting siren horns in modular construction. Single slit diffraction effect leads to 360° omnidirectional sound propagation.

SYSTEM

Sound Pressure Level	109 dB (A) / 30 m
Fundamental Frequency	415 Hz / 425 Hz
Alarms (Warning Tones)	9 (customized)
Messages (Pre-recorded Voice)	12 (customized)
Standby Time	up to 7 days
Battery Capacity during 48h without charge	up to 20 minutes activation

SIREN HEAD

Number of Horns / Drivers	4
Weight Siren Head	28 kg
Head Dimension (W x H x D)	280 x 960 x 840 mm
Windload at 160 km/h	522 N
Material of Horns	Aluminium (Alloy)

SIREN CABINET

Number of Class-D Amplifiers	2
Operating Voltage / Batteries	24 VDC
Mains Power Supply	230 VAC or 110 VAC +/-10%
Maximum Charging Current	4 A
Solar Power Supply	optional / on request
Local Activation and Control	Foil Keypad with LCD Display
Cabinet Dimensions (W x H x D)	600 x 600 x 350 mm
Cabinet Design	Stainless Steel or Powder Coated
Protection Class	IP66
Weight incl. Batteries	82 kg
Cabinet Ambient Temperature Range	-25°C... +65°C

Specifications are subject to change without notice.



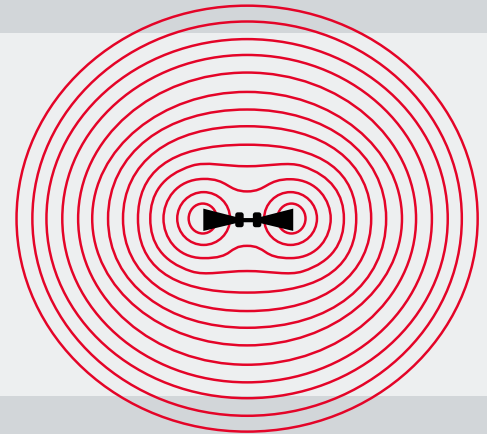
SIRENEN CABINET

Compact and clearly designed, based on 19" plug-in technology and modular construction. Robust assemblies with long design life guarantee maximum reliability.

Electronic Siren ECN 600-D

HORIZONTAL SOUND PROPAGATION

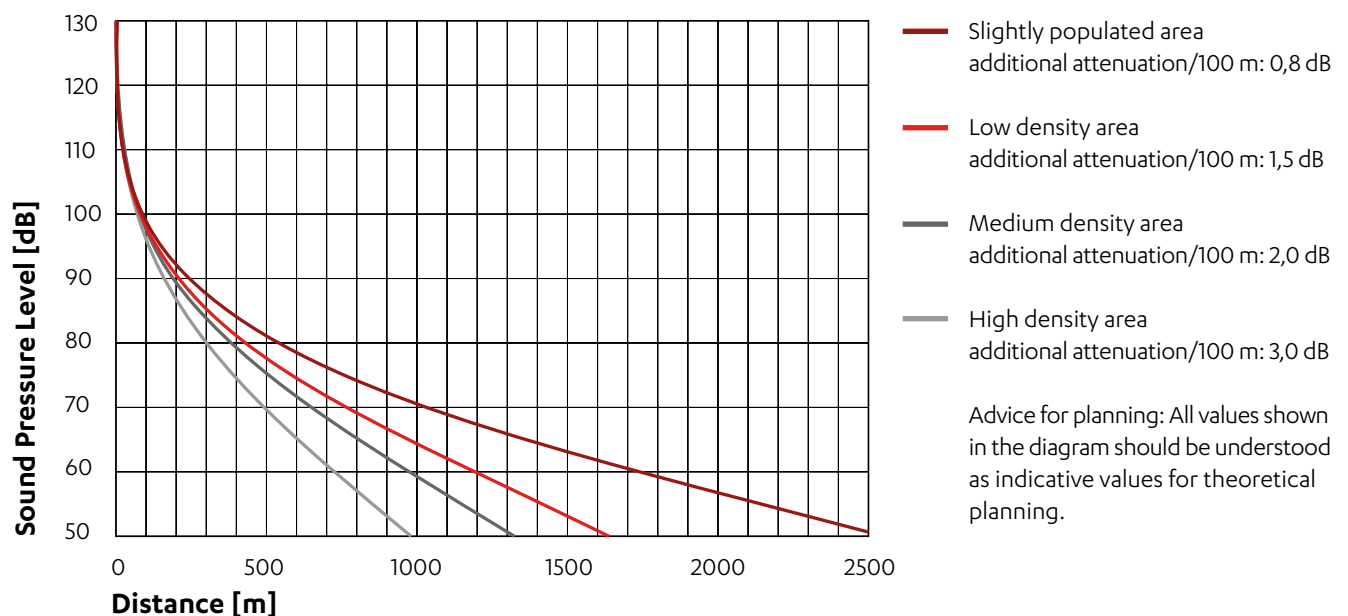
The siren horn's omnidirectional of the sound wave in horizontal plane is based on the „Huygens principle“. This physical guideline explains the diffraction of a sound wave at a single slit. Diffraction of sound results in a circular sound wave of omnidirectional characteristic, which leads to 360° sound propagation.



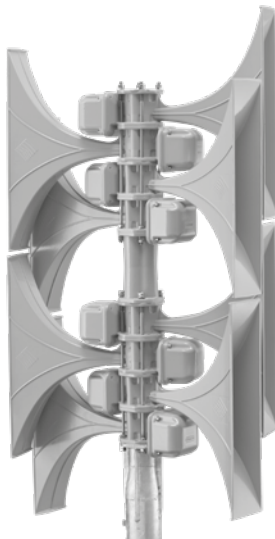
VERTICAL SOUND PROPAGATION

The ECN siren horn is a specific development with exponential increase of the horn's cross sectional surface, to propagate alarms and messages with high sound intensity. This special horn design assures optimum propagation of the sound wave within the horn, is widely in use, thoroughly tested and has proven the high perception by the public.

PROPAGATION OF SOUND PRESSURE LEVEL (SPL)



Electronic Siren ECN 1200-D



SIREN HEAD

Siren head consisting of self-supporting siren horns in modular construction. Single slit diffraction effect leads to 360° omnidirectional sound propagation.

SYSTEM

Sound Pressure Level	115 dB (A) / 30 m
Fundamental Frequency	415 Hz / 425 Hz
Alarms (Warning Tones)	9 (customized)
Messages (Pre-recorded Voice)	12 (customized)
Standby Time	up to 7 days
Battery Capacity during 48h without charge	up to 20 minutes activation

SIREN HEAD

Number of Horns / Drivers	8
Weight Siren Head	59 kg
Head Dimension (W x H x D)	280 x 1660 x 840 mm
Windload at 160 km/h	1064 N
Material of Horns	Aluminium (Alloy)

SIREN CABINET

Number of Class-D Amplifiers	4
Operating Voltage / Batteries	24 VDC
Mains Power Supply	230 VAC or 110 VAC +/-10%
Maximum Charging Current	4 A
Solar Power Supply	optional / on request
Local Activation and Control	Foil Keypad with LCD Display
Cabinet Dimensions (W x H x D)	600 x 600 x 350 mm
Cabinet Design	Stainless Steel or Powder Coated
Protection Class	IP66
Weight incl. Batteries	83 kg
Cabinet Ambient Temperature Range	-25°C... +65°C

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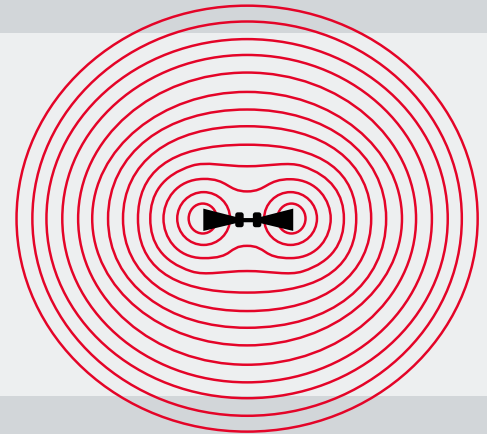
SIRENEN CABINET

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Electronic Siren ECN 1200-D

HORIZONTAL SOUND PROPAGATION

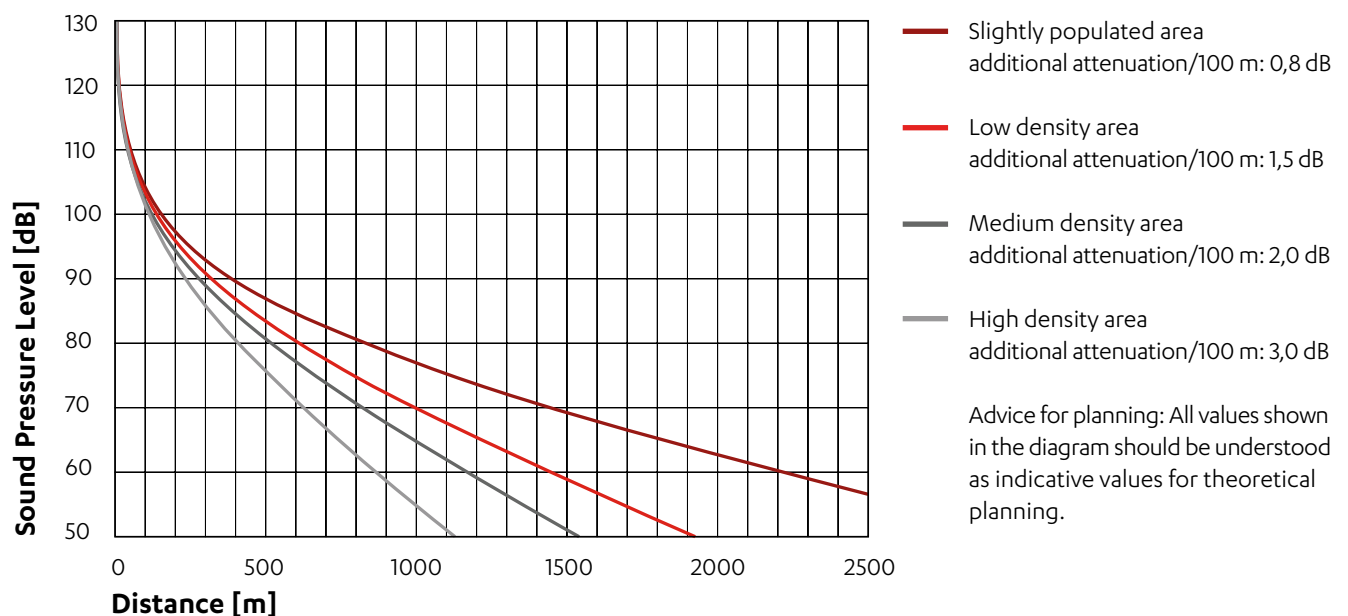
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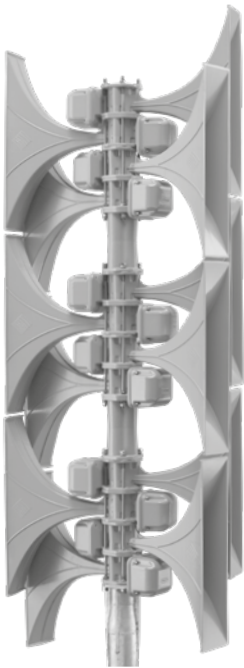
VERTICAL SOUND PROPAGATION

The ECN siren horn is a specific development with exponential increase of the horn's cross sectional surface, to propagate alarms and messages with high sound intensity. This special horn design assures optimum propagation of the sound wave within the horn, is widely in use, thoroughly tested and has proven the high perception by the public.

PROPAGATION OF SOUND PRESSURE LEVEL (SPL)



Electronic Siren ECN 1800-D



SIREN HEAD

Siren head consisting of self-supporting siren horns in modular construction. Single slit diffraction effect leads to 360° omnidirectional sound propagation.

SYSTEM

Sound Pressure Level	118 dB (A) / 30 m
Fundamental Frequency	415 Hz / 425 Hz
Alarms (Warning Tones)	9 (customized)
Messages (Pre-recorded Voice)	12 (customized)
Standby Time	up to 7 days
Battery Capacity during 48h without charge	up to 20 minutes activation

SIREN HEAD

Number of Horns / Drivers	12
Weight Siren Head	89 kg
Head Dimension (W x H x D)	280 x 2260 x 840 mm
Windload at 160 km/h	1614 N
Material of Horns	Aluminium (Alloy)

SIREN CABINET

Number of Class-D Amplifiers	6
Operating Voltage / Batteries	24 VDC
Mains Power Supply	230 VAC or 110 VAC +/-10%
Maximum Charging Current	4 A
Solar Power Supply	optional / on request
Local Activation and Control	Foil Keypad with LCD Display
Cabinet Dimensions (W x H x D)	600 x 600 x 350 mm
Cabinet Design	Stainless Steel or Powder Coated
Protection Class	IP66
Weight incl. Batteries	84 kg
Cabinet Ambient Temperature Range	-25°C... +65°C

Specifications are subject to change without notice.



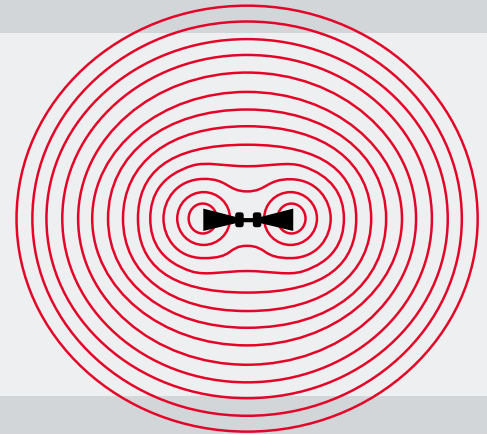
SIRENEN CABINET

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Electronic Siren ECN 1800-D

HORIZONTAL SOUND PROPAGATION

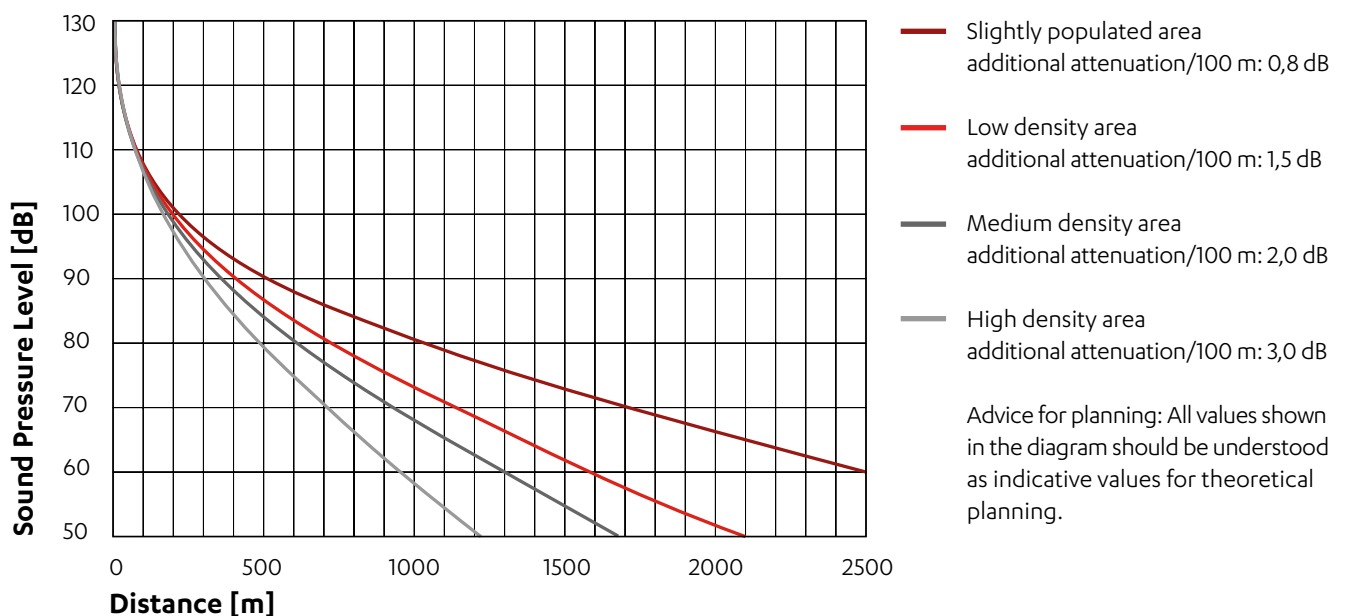
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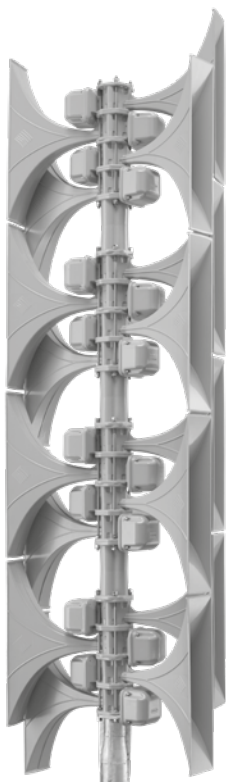
VERTICAL SOUND PROPAGATION

The ECN siren horn is a specific development with exponential increase of the horn's cross sectional surface, to propagate alarms and messages with high sound intensity. This special horn design assures optimum propagation of the sound wave within the horn, is widely in use, thoroughly tested and has proven the high perception by the public.

PROPAGATION OF SOUND PRESSURE LEVEL (SPL)



Electronic Siren ECN 2400-D



SIREN HEAD

Siren head consisting of self-supporting siren horns in modular construction. Single slit diffraction effect leads to 360° omnidirectional sound propagation.

SYSTEM

Sound Pressure Level	121 dB (A) / 30 m
Fundamental Frequency	415 Hz / 425 Hz
Alarms (Warning Tones)	9 (customized)
Messages (Pre-recorded Voice)	12 (customized)
Standby Time	up to 7 days
Battery Capacity during 48h without charge	up to 20 minutes activation

SIREN HEAD

Number of Horns / Drivers	16
Weight Siren Head	121 kg
Head Dimension (W x H x D)	280 x 2900 x 840 mm
Windload at 160 km/h	2200 N
Material of Horns	Aluminium (Alloy)

SIREN CABINET

Number of Class-D Amplifiers	8
Operating Voltage / Batteries	24 VDC
Mains Power Supply	230 VAC or 110 VAC +/-10%
Maximum Charging Current	4 A
Solar Power Supply	optional / on request
Local Activation and Control	Foil Keypad with LCD Display
Cabinet Dimensions (W x H x D)	600 x 600 x 350 mm
Cabinet Design	Stainless Steel or Powder Coated
Protection Class	IP66
Weight incl. Batteries	85 kg
Cabinet Ambient Temperature Range	-25°C... +65°C

Specifications are subject to change without notice.



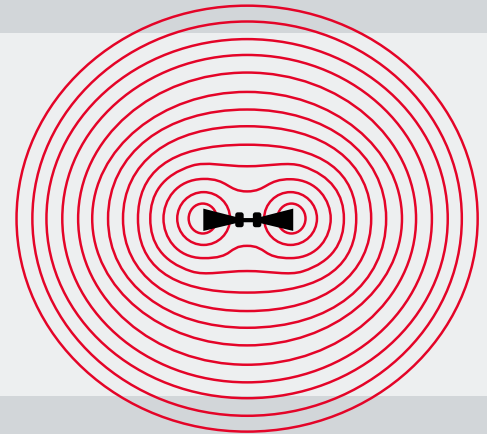
SIRENEN CABINET

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Electronic Siren ECN 2400-D

HORIZONTAL SOUND PROPAGATION

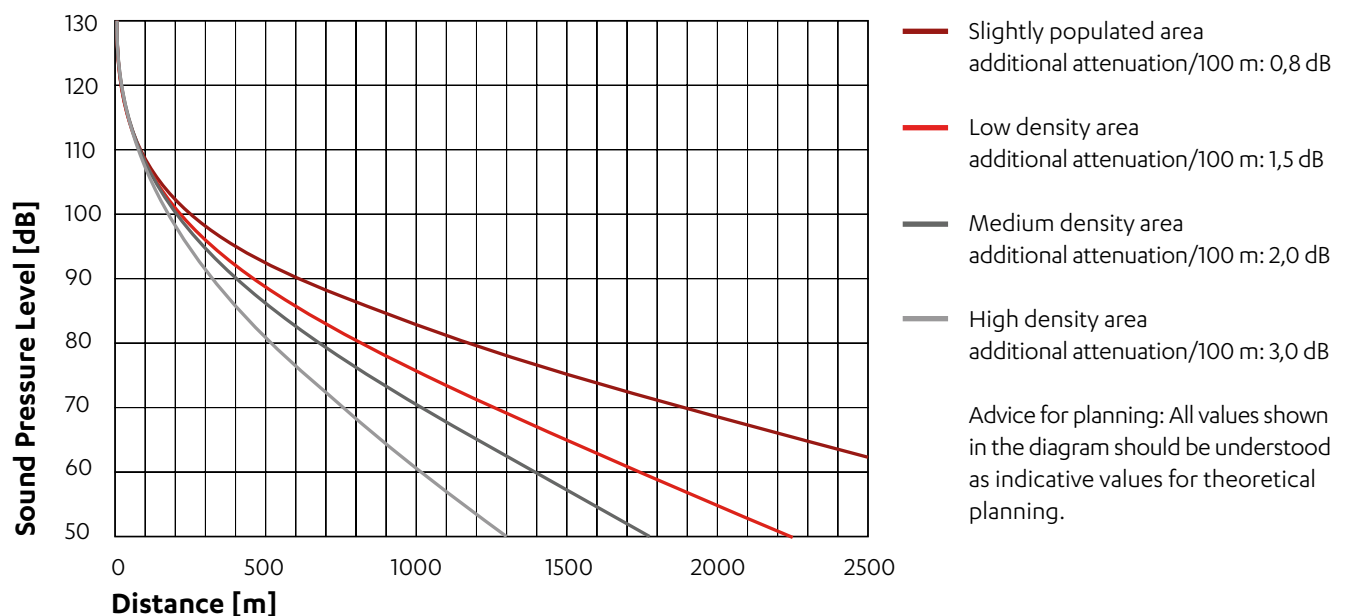
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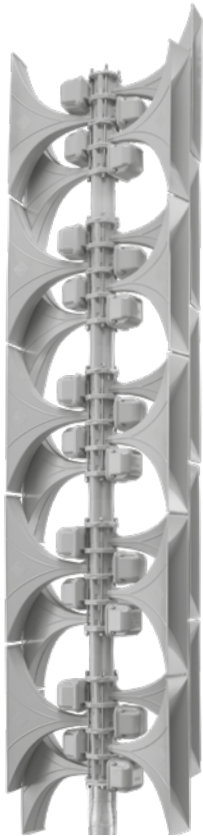
VERTICAL SOUND PROPAGATION

The ECN siren horn is a specific development with exponential increase of the horn's cross sectional surface, to propagate alarms and messages with high sound intensity. This special horn design assures optimum propagation of the sound wave within the horn, is widely in use, thoroughly tested and has proven the high perception by the public.

PROPAGATION OF SOUND PRESSURE LEVEL (SPL)



Electronic Siren ECN 3000-D



SIREN HEAD

Siren head consisting of self-supporting siren horns in modular construction. Single slit diffraction effect leads to 360° omnidirectional sound propagation.

SYSTEM

Sound Pressure Level	123 dB (A) / 30 m
Fundamental Frequency	415 Hz / 425 Hz
Alarms (Warning Tones)	9 (customized)
Messages (Pre-recorded Voice)	12 (customized)
Standby Time	up to 7 days
Battery Capacity during 48h without charge	up to 20 minutes activation

SIREN HEAD

Number of Horns / Drivers	20
Weight Siren Head	152 kg
Head Dimension (W x H x D)	280 x 3550 x 840 mm
Windload at 160 km/h	2650 N
Material of Horns	Aluminium (Alloy)

SIREN CABINET

Number of Class-D Amplifiers	10
Operating Voltage / Batteries	24 VDC
Mains Power Supply	230 VAC or 110 VAC +/-10%
Maximum Charging Current	4 A
Solar Power Supply	optional / on request
Local Activation and Control	Foil Keypad with LCD Display
Cabinet Dimensions (W x H x D)	600 x 600 x 350 mm
Cabinet Design	Stainless Steel or Powder Coated
Protection Class	IP66
Weight incl. Batteries	86 kg
Cabinet Ambient Temperature Range	-25°C... +65°C

Specifications are subject to change without notice.



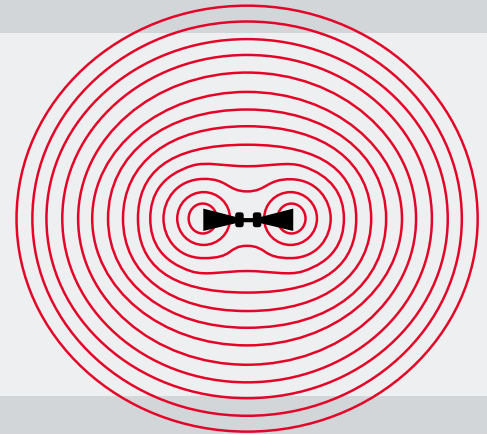
SIRENEN CABINET

Compact and clearly designed, based on 19" plug-in technology and modular construction. Robust assemblies with long design life guarantee maximum reliability.

Electronic Siren ECN 3000-D

HORIZONTAL SOUND PROPAGATION

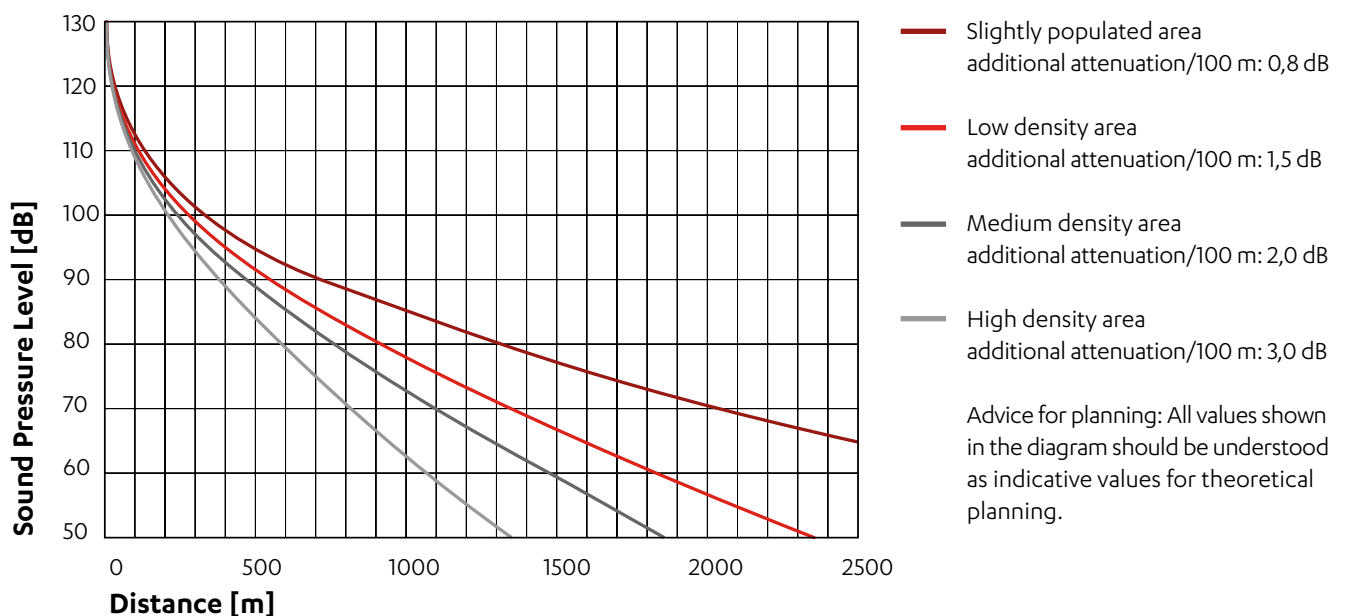
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VERTICAL SOUND PROPAGATION

The ECN siren horn is a specific development with exponential increase of the horn's cross sectional surface, to propagate alarms and messages with high sound intensity. This special horn design assures optimum propagation of the sound wave within the horn, is widely in use, thoroughly tested and has proven the high perception by the public.

PROPAGATION OF SOUND PRESSURE LEVEL (SPL)



Siren System Control Centre Technology

When several electronic sirens are connected to form a warning system that is to be monitored and controlled by one or more control centers, a reliable and mature communication network is required. For this task, HÖRMANN Warnsysteme has developed the Management Control Equipment (MCE), which acts as the central interface between the user interfaces – the control software (CCCS) and control panel (RCS) - and the electronic sirens. In complex siren systems, such as nationwide warning systems with several control centers and a multitude of electronic sirens, the MCE simultaneously assumes the function of a network node.



Technical specifications - MCE

- 19" plug-in technology
- Mains power supply 230 VAC or 110 VAC +/-10%
- Backup power supply with integrated 12 VDC battery
- Embedded Low Power Industrial CPU
- Diverse Interfaces: Ethernet (TCP/IP), Analogue or Digital Radio, GSM/GPRS, Fibre Optic, Satellite, RS232/RS485, etc.
- Message encryption and security encoding prevent unauthorized system access
- Free assignable digital I/Os
- Scalable hardware structure
- No moving parts like fans or harddisks
- QNX™ RTOS Realtime Multitasking Operating System
- Modular software architecture for customization of user specific needs



THE MCE GATEWAY

is the central element in the control and management of our electronic sirens in a siren system. As a communication interface, it sits between the sirens and the control centers.

Siren System Control Centre Technology

The MCE control center technology can be addressed and operated via different user interfaces:
The CCCS operating software or the RCS control panel.

Control Software - CCCS

- Password protected login
- Activation of electronic sirens with key-switch and/or password protection
- Ad-hoc selection and grouping of electronic sirens (single, groups, or all electronic sirens)
- Activation of alarms, pre-recorded messages and live PA announcements
- Electronic sirens and control centre status using colour-coded map icons (green, yellow, red)
- Flat navigation structure ensures intuitive use
- Map based GIS application
- Database of siren and control centre status and operator activity over the whole period of time
- Creation of alarm statistics with detailed evaluation
- Tabular display of activities down to the second
- Data print and export functions



CCCS CONTROL SOFTWARE

Simple and intuitive software for controlling and monitoring a siren warning and notification system. Activation of electronic sirens in seconds, status display following traffic light principle.

Control Panel - RCS

- Rugged desktop panel
- ARM11 embedded panel PC with touch-screen
- Flexible selection of electronic sirens (single, groups, all electronic sirens)
- Activation of alarms, pre-recorded messages and live PA announcements
- Intuitive menu navigation through all operational system functions via touch screen
- Status monitoring of electronic sirens via colourcoded LED icons (green, yellow, red)
- Key-switch for electronic siren activation
- 12 VDC power supply from MCE
- Optional with microphone and PTT button for live PA announcements



RCS CONTROL PANEL

Touch panel for easy monitoring and activation of the electronic sirens. Status display following traffic light principle. Electronic sirens are triggered in seconds through intuitive operation procedure.



WARNING AND NOTIFICATION

Siren System Command and Control Software

- Intuitive activation of alarms, pre-recorded messages and live PA announcements
- User friendly navigation with graphics based interface
- Straightforward control and monitoring for all equipment of the siren warning and notification system
- Map based GIS software
- No blocking dialogues and windows
- Native language support
- Comprehensive status log and record functions
- Running under MS Windows™
- Integrated online support



KSC KEY SWITCH CONTROLLER

Rugged desktop panel with security key for protection against unauthorized and unintentional activation of the electronic sirens. Microphone and PTT button for live PA announcements.

The CCCS (Computerized Command and Control Software) runs in a PC-based electronic siren network and acts as initiation / control / monitoring platform for the siren warning and notification system.

Designed by HÖRMANN Warnsysteme with utmost comprehensive functions and features, it is continuously optimized for user specific needs.



1
Select
sirens



2
Select alarm,
message, live PA



3
Confirm with
key switch



4
Sirens
active

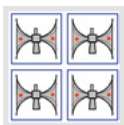
Operation

An essential requirement for reliable operation of a siren warning and notification system is simple and intuitive usability of the software. Different operating modes demand a clear separation of selectable options. This prevents the operator from initiating unintentional activities. "Monitoring" mode provides the operator a snapshot for the technical condition of the system, status information for each individual station and allows generating reports of different origin and destination.

"Active" mode permits the operator all functions of the monitoring mode, in addition enables the operator to select and initiate any kind of activations (alarms, pre-recorded messages, live PA announcements) and to select and initiate any kind of test procedures and status requests.

"Administration" mode allows unrestricted access for the operation of the CCCS. In particular setup-configuration-parameters of the individual stations can be modified and adapted to circumstances. This gives the administrator all options for scaling the siren warning and notification system according to requirements.

- Highest security for activation of electronic sirens with key switch or password protection
- Buttons with pictograms and text
- Ad-hoc selection and grouping of electronic sirens on the map
- Selection of individual, pre-defined groups or all electronic sirens via buttons or from station list
- Customized user groups and profiles with various authorization levels



SELECT ALL



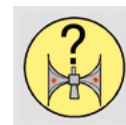
STATUS



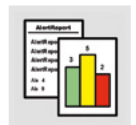
ACTIVATE



SERVICE



TEST



REPORTS

BUTTONS AND FUNCTIONS

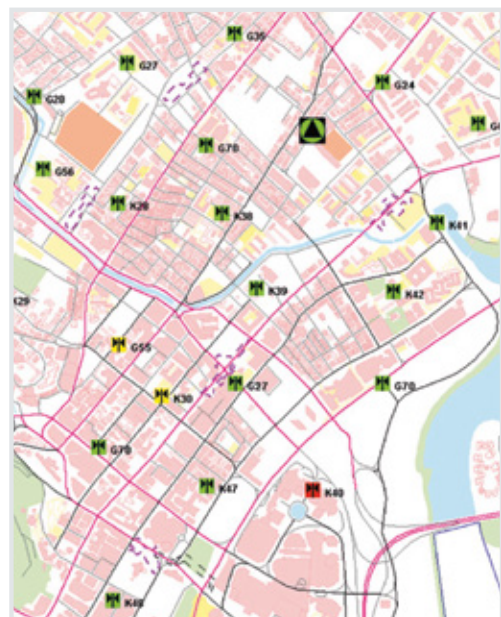
Operation via intuitive buttons with pictograms and text.

Monitoring

The CCCS allows activation of the electronic sirens within few seconds and provides detailed, user friendly overview of the system status. Colour coded icons indicate the condition for each station of the siren warning and notification system, for both global and detailed status.

Detailed status provides comprehensive technical information on module level for the individual station including communication.

- Status monitoring of electronic sirens and control centre(s) using colour coded map icons
- Spontaneous reports (e.g. missing mains power supply) will be indicated automatically by a blinking icon with changed colour
- Direct access to status information and status history via icons (e.g. battery-, driver-, amplifier- communication status etc.)
- Complete reports on history of activities and events etc. for electronic sirens and control centre(s)
- User friendly presentation of a high number of electronic sirens by combining them under “area icons”
- Integrated database with automated recording of all activities and changes of status



STATUS INDICATION
of electronic sirens and control centre(s)
following traffic light principle.

Reporting and Analysis

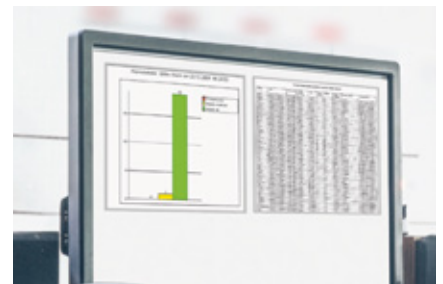
The CCCS offers a wide range of reporting and analysis functions, to evaluate all recorded activities and status information about the operation of the siren warning and notification system. This information can likewise be used to coordinate and schedule any necessary measures to remedy any malfunction conditions.

- Display of any activities during a selected period (Who? What? When?)
- Reports presented as tables or charts
- Detailed user defined process and report functions
- Display of electronic sirens and control centre(s) status over the entire operating time
- Generation of activation statistics with detailed examination of electronic siren conditions
- Analysis and indication of malfunctions of electronic sirens
- Print, export and archive of data

Administration

The “Administration” mode offers the authorized user a variety of options for customization of the siren warning and notification system to client specific needs.

- Setup and configuration of individual stations
- Changing parameters of individual stations
- Flexible editing of stations
- Creating and defining user configurations
- Modification of automated periodic command configurations (e.g. selftest, status request, channel broadcast test, auto alarm etc.)



REPORTING AND ANALYSIS

CCCS software contains an integrated database with comprehensive evaluation functions for electronic siren activations up to indication of status information for electronic sirens and control centre.

INTERNATIONAL PRESENCE



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