



Optical-audible combinations

# Overview Optical and Audible Combinations

## Double the safety with optical-audible signals

Large systems are often managed by only a few people, especially in automated production facilities and large machine shops. This results in optical signals not always being in the machine operator's immediate field of vision. In such cases, an audible signal may also be used. The use of both optical and audible alarms will help to counter an audible alarm not always being heard above an ambient noise level.

Overview Optical and Audible Combinations							
Product type		Installation	Free-standing	Free-standing	Free-standing	Free-standing	Free-standing
Mounting	Product range	Installation Combinations	EvoSIGNAL Mini	EvoSIGNAL Midi	Combinations	Design Combinations	Heavy Duty Combinations
Dimensions (Ø x Height)*		50 x 22 mm	62 x 85 mm	85 x 130 mm	146 x 171 mm 134 x 235 mm	-	
Dimensions (L x H x W)		-	-	-	134 x 407 x 144 mm	109 x 112,5 x 152 mm	136 x 138 x 119 mm 165 x 169 x 132 mm 168 x 211 x 155 mm
Voltage	12 V		●	●			●
	24 V	●	●	●	●	●	●
	60 V						●
	115 V	●	●	●	●	●	●
	230 V	●	●	●	●	●	●
Protection rating		IP65	IP66	IP66	IP65	IP65	IP66
Page		Page 196	Page 201	Page 204	Page 207	Page 213	Page 217

\* Technical diagrams can be found on the product page



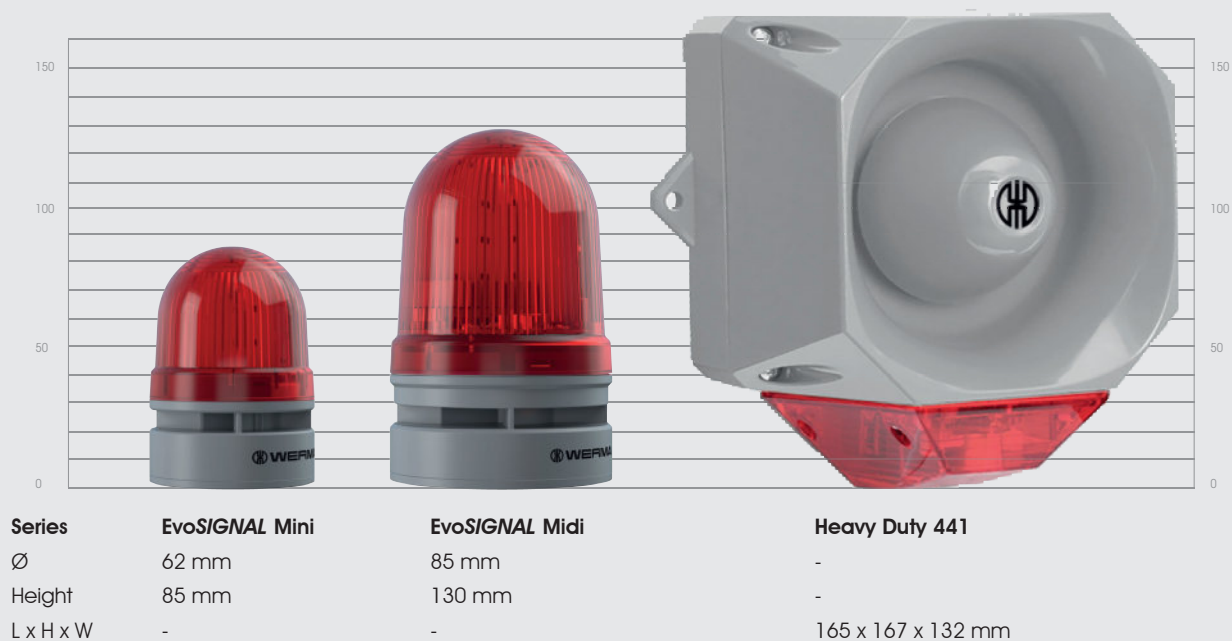
## Variety of signals

WERMA supplies a large number of audible signals which can also be enhanced with the addition of optical light signals.

AUDIBLE SIGNALS: Sirens and Multi-Tone Sounder, Buzzer and Horns

OPTICAL SIGNALS: (LED) Permanent Light, Flashing Light, LED Double Flash Light, LED EVS Signal, LED Permanent/Flash/EVS Light

## Size comparison



# Installation Combination Beacon with Buzzer

## Your benefits

Optical audible Installation Combinations give excellent all-round visibility of the signal and are an industry standard for easy installation in control panels.

- Easy to install
- Tamper-proof when installed
- Minimal protrusion from panel for installations where space is limited
- Acknowledgement function promotes faster response time and fault repair (450 series)

## Typical applications

Fault signalling

- in control panels

## Installation options

- Installation mounting

## Features

- High IP65 protection rating for outdoor applications
- Standard M22 for control panel installation
- Proven piezo technology for extended life duration
- Easy to connect using a plug-in connection (150)
- LED permanent light with continuous tone that can be additionally activated (150)



Size comparison Installation /  
EvoSIGNAL Mini and Midi



# 150 LED Permanent Light / Buzzer Combination



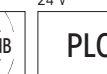
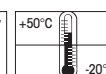
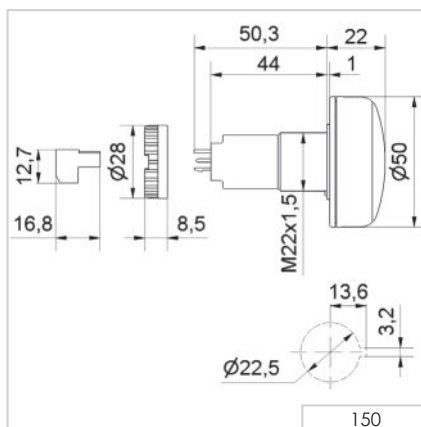
LED Permanent light with continuous tone that can be additionally activated



## ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	50 mm x 22 mm (Protrusion from panel)		
Housing:	PC/ABS-Blend		
Lens:	PC, transparent		
Connection:	Connector plug with screw terminal max. 1.5 mm <sup>2</sup>		
Tone type:	Continuous		
Tone frequency:	c. 2.8 kHz		
Duty cycle:	100 %		
Life duration:	Up to 50,000 hrs		
Fixing:	Installation mounting for Ø 22.5 mm (M22 x 1.5 mm) with anti-twist device		
Nut and seal included in assembly.			
Voltage:	24 V DC	115 V AC	230 V AC
Current consumption:	< 50 mA	< 20 mA	< 20 mA
red	<b>150 100 55</b>	<b>150 100 67</b>	<b>150 100 68</b>
yellow	<b>150 300 55</b>	<b>150 300 67</b>	<b>150 300 68</b>

## ↔ TECHNICAL DIAGRAM:



24 V







LED Permanent light with continuous tone that can be additionally activated

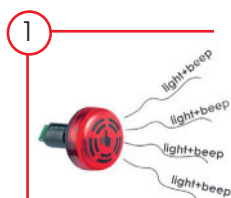


## 450 LED Permanent Light/Buzzer Combination with acknowledgement function

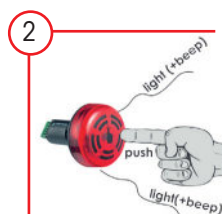
### ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	50 mm x 22 mm (Protrusion from panel)	
Housing:	PC/ABS-Blend	
Lens:	PC, transparent	
Connection:	Screw terminal 1.5 mm <sup>2</sup>	
Signal input:	24 V DC	
Acknowledgement output:	Semiconductor-Relay	U <sub>max</sub> = 30 V I <sub>max</sub> = 100 mA R <sub>ON max</sub> = 25 Ohm
Tone type:	Continuous	
Tone frequency:	c. 2.8 kHz	
Duty cycle:	100 %	
Life duration:	Up to 50,000 hrs	
Fixing:	Installation mounting for Ø 22.5 mm (M22 x 1.5 mm)	
Nut and seal included in assembly.		
Voltage:	24 V DC	
Current consumption:	80 mA	
red	450 100 55	
yellow	450 300 55	

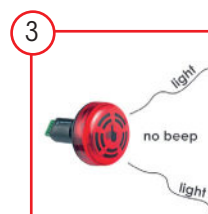
### ! ADDITIONAL INFORMATION:



The occurrence of a malfunction or an error is indicated by means of an optical-audible signal.

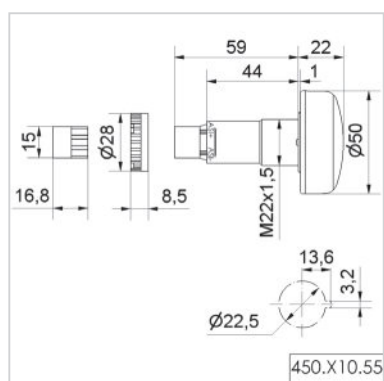
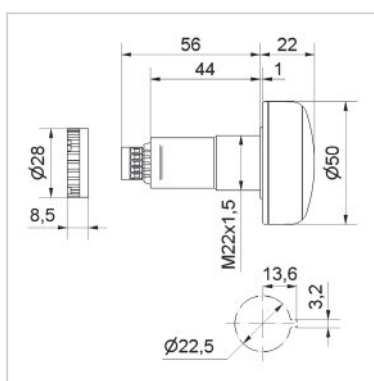


The audible signal can be turned off in seconds by lightly pressing the front of the product.

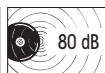
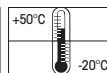
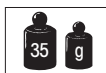


The acknowledgement signal is sent to the control unit via an electronic switch and the malfunction is now only indicated by the optical signal.

### ↔ TECHNICAL DIAGRAM:



The audible signal can be turned off in seconds by lightly pressing the front of the product



450.X00.00

450.X10.55

## 240 LED Installation Beacon (MC55) with or without UL



### ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	55 mm x 46 mm (Protrusion from panel)			
Housing:	PC/ABS-Blend, black PC, black (version with UL)			
Lens:	PC, transparent			
Fixing:	Installation mounting M30			
Colour options:	Red, yellow, green, white, blue, violet, turquoise (Multicolour) Red, yellow, green (Tricolour)			
Light effects:	Permanent light, permanent and blinking light (1Hz) (240 130 50)			
Tone types and frequency:	Pulse tone, 3400 Hz			
Life duration LED:	Up to 50,000 hrs			
Life duration buzzer:	Up to 5,000 hrs			
<b>Without UL</b>	Voltage	Current consumption	Plug M12	Cable
Tricolour (RGY)	24 V DC	45 mA	<b>240 240 55</b>	<b>240 230 55</b>
Multicolour (RGB)	10-30 V DC	80 mA	<b>240 140 50</b>	<b>240 130 50</b>
<b>Version with UL</b>	Voltage	Current consumption	Plug M12	
Tricolour (RGY)	24 V DC	65 mA	<b>240 440 55</b>	-
Multicolour (RGB)	10-30 V DC	130 mA	<b>240 340 50</b>	-

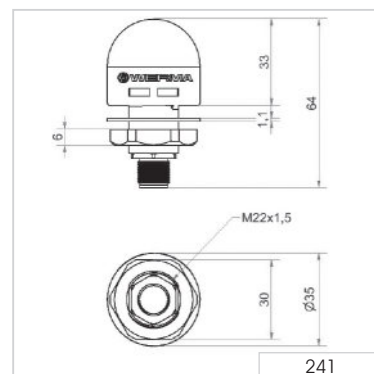
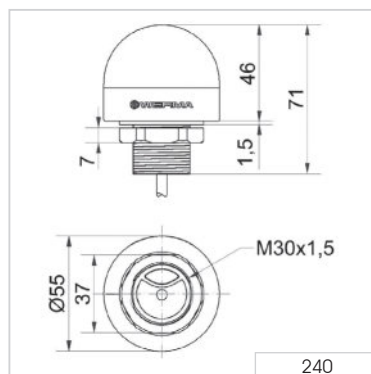
## 241 LED Installation Beacon (MC35) with UL



### ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	35 mm x 64 mm (Protrusion from panel)		
Housing:	PC, black		
Lens:	PC, transparent		
Fixing:	Installation mounting M22		
Colour options:	Red, yellow, green, white, blue, violet, turquoise (Multicolour) Red, yellow, green (Tricolour)		
Light effects:	Permanent light		
Tone types and frequency:	Continuous tone, 3600 Hz		
Life duration light:	Up to 50,000 hrs		
Life duration buzzer:	Up to 5,000 hrs		
<b>Version with UL</b>	Voltage	Current consumption	Plug M12
Tricolour (RGY)	24 V DC	45 mA	<b>241 440 55</b>
Multicolour (RGB)	10-30 V DC	45 mA	<b>241 340 50</b>

### ← TECHNICAL DIAGRAM:



241

240.440.55

240.340.50 241

240.440.55

240.340.50

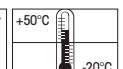
240.240.55

240.140.50

240.230.55

240.130.50

UL-Version



# Evo*SIGNAL* - Combinations

## Your benefits

The type of optical signals used depends on the application and environment. With Evo*SIGNAL*, finding the right signal device has never been so easy: Almost all areas of application are optimally covered by only two sizes (combinations) with specific mounting adapters. The new modular, simple and clear standard solution. Evo*SIGNAL* is one of a kind.

- Simple and easy to use: Number of different articles reduced to 20% whilst retaining a full range
- Twin functions: Twin*LIGHT* and Twin*FLASH* unite two light pattern functions in one element. They can be remote-controlled via connection terminals and also used as escalation levels
- Poka Yoke: Simple and intuitive installation - incorrect installation is impossible
- Mini and Midi also available as Tri*COLOUR* variants
- Maxi Twin*FLASH* can be used as an attention-grabbing alternative to xenon strobes and rotating mirror beacons

## Typical applications

Signal faults and statuses on machines and equipment, in building services engineering and in door and gate applications. All products are ideal for demanding indoor and outdoor applications.

- Mini – in installation sites with limited space
- Midi – signalling over medium distances (10–30 m)

## Installation options

- Base mounting
- M22/PG 29 single-hole mounting
- Tube mounting
- Bracket mounting

## Features

- Push-in connection terminals: Simple and permanently secure connection
- Fully compatible: Easy replacement of previous products
- Best-in-class equipment: Powerful, extremely robust (IP66), tamper-proof



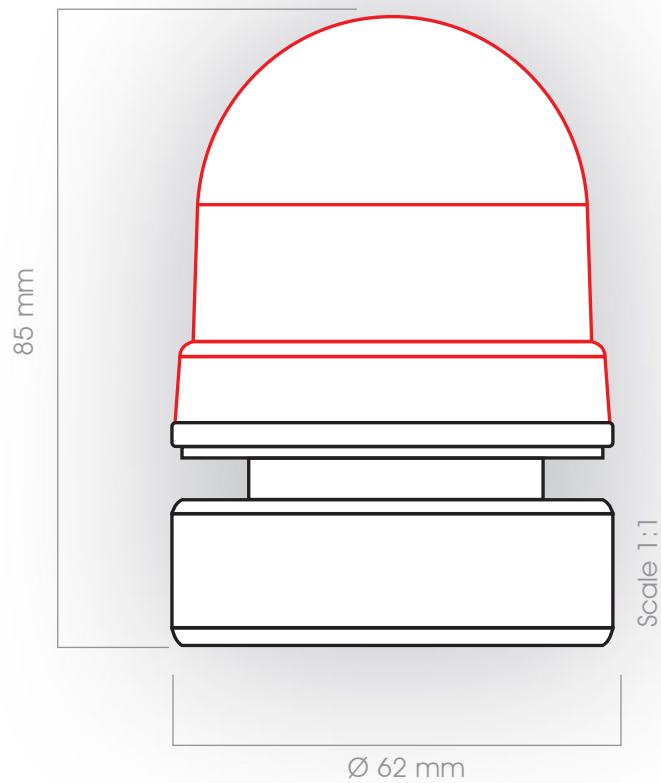
Mini

Midi





## EvoSIGNAL Mini - Combinations



30  
TwinLIGHT, TwinFLASH



6  
Mounting adapter



# Quick-Finder EvoSIGNAL Mini - Combinations



12 V AC/DC	
TwinLIGHT	TwinFLASH
Order No.	Order No.
460 110 74	460 120 74
460 210 74	460 220 74
460 310 74	460 320 74
460 410 74	460 420 74
460 510 74	460 520 74

24 V AC/DC	
TwinLIGHT	TwinFLASH
Order No.	Order No.
460 110 75	460 120 75
460 210 75	460 220 75
460 310 75	460 320 75
460 410 75	460 420 75
460 510 75	460 520 75

115-230 V AC	
TwinLIGHT	TwinFLASH
Order No.	Order No.
460 110 60	460 120 60
460 210 60	460 220 60
460 310 60	460 320 60
460 410 60	460 420 60
460 510 60	460 520 60

## + Mounting adapter (compulsory!)

Base mounting



Order no.  
260 700 01

Installation mounting  
M22



Order no.  
260 700 03

Installation mounting  
PG 29



Order no.  
260 700 04

Tube mounting



Order no.  
260 700 05

Bracket mounting  
with cable gland

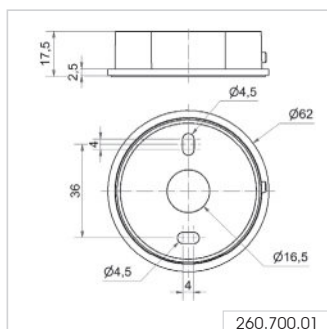


Order no.  
260 700 06

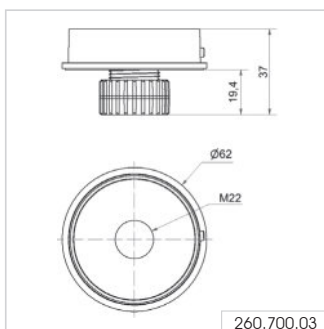
Bracket mounting



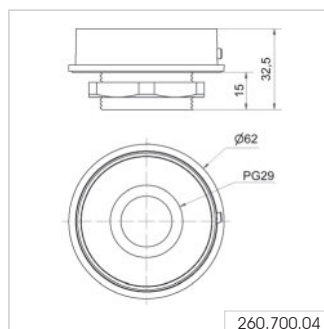
Order no.  
260 700 07



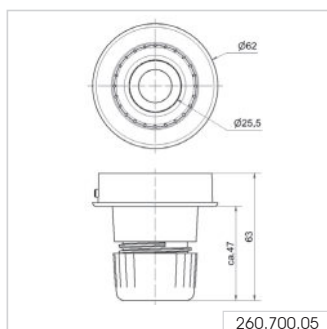
260.700.01



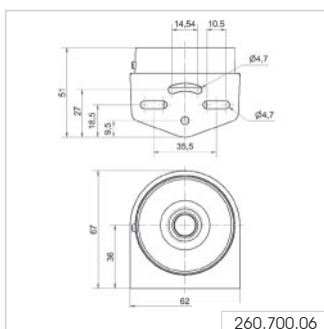
260.700.03



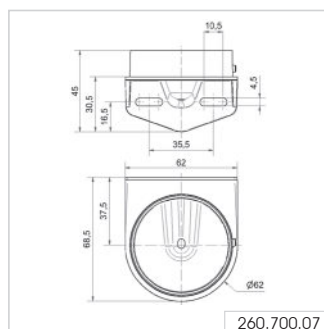
260.700.04



260.700.05



260.700.06



260.700.07



# EvoSIGNAL Mini - Combinations



Installation mounting M 22



Tube mounting



Installation mounting PG 29

## ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	62 x 85 mm
Housing:	PC/ABS
Lens:	PC, transparent
Connection:	Push-In terminal max. 1.5 mm <sup>2</sup>
Cable entry:	Cable diameter 8-12 mm
Tone type:	Continuous or Pulse tone
Fixing:	Base/Tube/Wall/ Installation mounting
Flashing/Blinking frequency:	1 Hz

### TwinLIGHT

Voltage:	12 V AC/DC	24 V AC/DC	115-230 V AC
Current consumption:	≤ 120 mA	≤ 115 mA	≤ 75 mA
red	<b>460 110 74</b>	<b>460 110 75</b>	<b>460 110 60</b>
green	<b>460 210 74</b>	<b>460 210 75</b>	<b>460 210 60</b>
yellow	<b>460 310 74</b>	<b>460 310 75</b>	<b>460 310 60</b>
white	<b>460 410 74</b>	<b>460 410 75</b>	<b>460 410 60</b>
blue	<b>460 510 74</b>	<b>460 510 75</b>	<b>460 510 60</b>

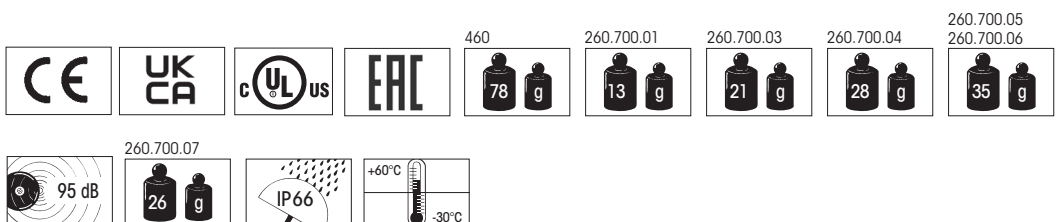
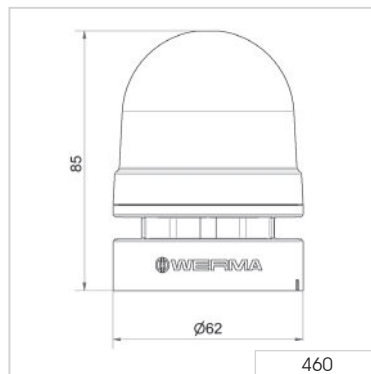
### TwinFLASH

Voltage:	12 V AC/DC	24 V AC/DC	115-230 V AC
Current consumption:	≤ 100 mA	≤ 115 mA	≤ 75 mA
red	<b>460 120 74</b>	<b>460 120 75</b>	<b>460 120 60</b>
green	<b>460 220 74</b>	<b>460 220 75</b>	<b>460 220 60</b>
yellow	<b>460 320 74</b>	<b>460 320 75</b>	<b>460 320 60</b>
white	<b>460 420 74</b>	<b>460 420 75</b>	<b>460 420 60</b>
blue	<b>460 520 74</b>	<b>460 520 75</b>	<b>460 520 60</b>

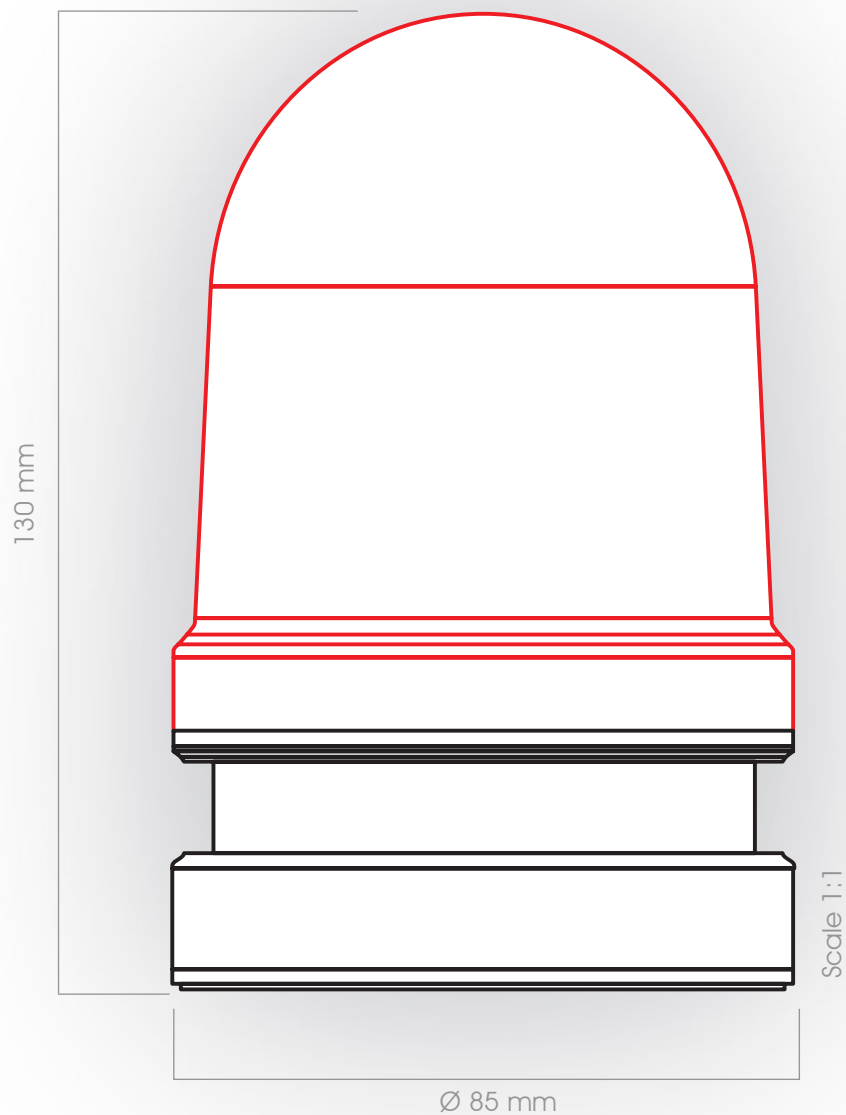
## ✂ ACCESSORIES:

Base mounting	<b>260 700 01</b>
Installation mounting M22	<b>260 700 03</b>
Installation mounting PG 29	<b>260 700 04</b>
Tube mounting	<b>260 700 05</b>
Bracket mounting with cable gland	<b>260 700 06</b>
Bracket mounting	<b>260 700 07</b>

## ↔ TECHNICAL DIAGRAM:



EvoSIGNAL Midi - Combinations



20  
TwinLIGHT, TwinFLASH








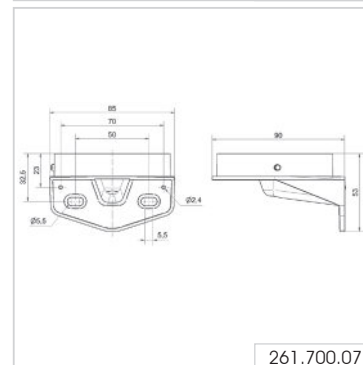
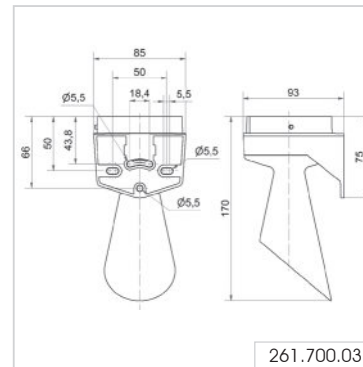
6  
Mounting adapter

## Optical-audible combinations



115-230 V AC	
<b>TwinLIGHT</b>	<b>TwinFLASH</b>
Order No.	Order No.
461 110 60	461 120 60
461 210 60	461 220 60
461 310 60	461 320 60
461 410 60	461 420 60
461 510 60	461 520 60

<p>Base mounting</p>  <p>Order no. 261 700 01</p>	<p>Base mounting with cable gland</p>  <p>Order no. 261 700 02</p>	<p>Tube mounting</p>  <p>Order no. 261 700 05</p>	<p>Bracket mounting with cable gland</p>  <p>Order no. 261 700 06</p>	<p>Bracket mounting</p>  <p>Order no. 261 700 07</p>	<p>Horn</p>  <p>Order no.. 261 700 03</p>
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Horn



Bracket mounting with cable gland



Tube mounting

## EvoSIGNAL Midi - Combinations

### ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (Ø x Height):	85 mm x 130 mm
Housing:	PC/ABS
Lens:	PC, transparent
Fixing:	Base/Tube/Wall mounting
Cable entry:	Cable diameter 8-12 mm
Connection:	Push-In terminal max. 1.5 mm <sup>2</sup>
Tone type:	Multi-tone, 10 tones
Flashing/Blinking frequency:	1 Hz

#### TwinLIGHT

Voltage:	12/24 V AC/DC	115-230 V AC
Current consumption:	≤ 345 mA	≤ 170 mA
red	<b>461 110 70</b>	<b>461 110 60</b>
green	<b>461 210 70</b>	<b>461 210 60</b>
yellow	<b>461 310 70</b>	<b>461 310 60</b>
white	<b>461 410 70</b>	<b>461 410 60</b>
blue	<b>461 510 70</b>	<b>461 510 60</b>

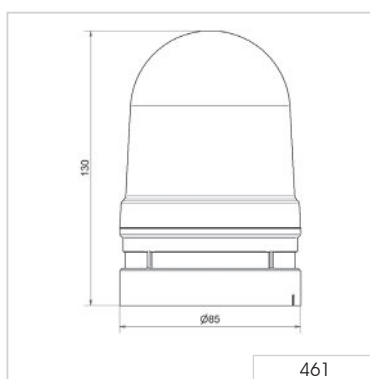
#### TwinFLASH

Voltage:	12/24 V AC/DC	115-230 V AC
Current consumption:	≤ 110 mA	≤ 215 mA
red	<b>461 120 70</b>	<b>461 120 60</b>
green	<b>461 220 70</b>	<b>461 220 60</b>
yellow	<b>461 320 70</b>	<b>461 320 60</b>
white	<b>461 420 70</b>	<b>461 420 60</b>
blue	<b>461 520 70</b>	<b>461 520 60</b>

### ✂ ACCESSORIES:

Base mounting	<b>261 700 01</b>
Base mounting with cable gland	<b>261 700 02</b>
Tube mounting	<b>261 700 05</b>
Bracket mounting with cable gland	<b>261 700 06</b>
Bracket mounting	<b>261 700 07</b>
Horn	<b>261 700 03</b>

### ↔ TECHNICAL DIAGRAM:



				461 	261.700.01 
261.700.02 	261.700.05 	261.700.06 	261.700.07 	261.700.03 	  



# Combination LED Beacon with Multi-Tone Sounder/Horn

## Your benefits

The WERMA LED Beacon with a siren or horn provides safety and security by delivering reliable fault alarms over medium distances. The IP65 protection rating is suitable for outdoor applications.

- Multiple light configurations for different purposes and distances (some with partial external triggering)
- Simple installation
- Tamper-proof when installed
- Multiple visual and audible escalation levels possible
- Clear all-round visibility thanks to the OmniVIEW lens; no blind spots
- Multi-tone siren with up to 32 tones available for maximum flexibility

## Typical applications

Fault signalling

- In areas with high ambient noise levels
- On machinery and equipment
- In building service systems (e.g. gas alarm)
- In the event of e.g. overload on mobile cranes and similar

## Installation options

- Base mounting
- Wall mounting
- Tube mounting

## Features

- Long life and energy-saving LEDs



Size comparison Midi / Design



# 430/432 LED Permanent Light/Multi-Tone Sounder Combination



LED Permanent Light in combination with Multi-Tone Sounder



Quick and simple wall mounting without additional accessories thanks to integrated mounting bracket (432)



Mounting holes integrated into the product rim allow easy mounting without having to remove the lens (430)

## ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

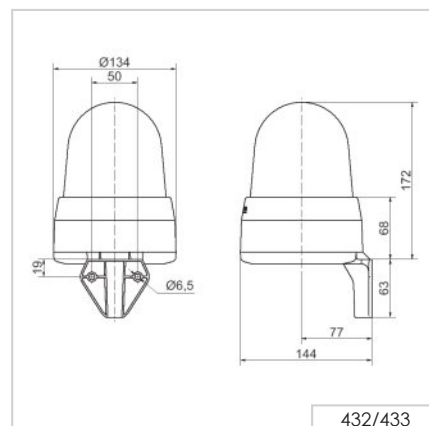
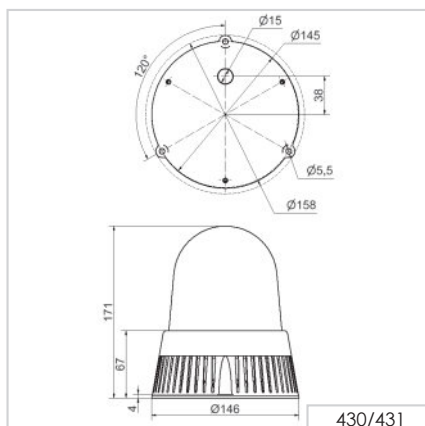
	Base mounting (430)	Wall mounting (432)
Dimensions (Ø x Height):	146 mm x 171 mm	134 mm x 235 mm
Housing:	PC/ABS-Blend, black	PC/ABS-Blend, grey
Lens:	PC, transparent	
Connection:	Screw terminal 0.5-1.5 mm <sup>2</sup>	
Cable entry:	Cable diameter max. 13 mm	
Tone type and frequency:	32 tones adjustable, see table on page 210	
Life duration:	Up to 50,000 hrs (LED), up to 5,000 hrs (Multi-tone Sounder)	
Installation position:	Sound outlet facing downwards	
Fixing:	Base mounting (430), Wall mounting (432) Tube mounting (accessory, only for 430)	
Voltage:	24 V AC/DC	115-230 V AC*
Current consumption MTS:	190 mA	55 mA
Current consumption LED:	350 mA 230 mA (red)	100 mA 80 mA (red)
<b>Base mounting</b>		
red	<b>430 100 75</b>	<b>430 100 60</b>
yellow	<b>430 300 75</b>	<b>430 300 60</b>
<b>Wall mounting</b>		
red	<b>432 100 75</b>	<b>432 100 60</b>
yellow	<b>432 300 75</b>	<b>432 300 60</b>

\*Current consumption at 115 V

## ✂ ACCESSORIES:

Adaptor for tube mounting, plastic, for tube Ø 25 mm	<b>975 430 01</b>
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## ↔ TECHNICAL DIAGRAMS:



# 431/433 LED Permanent / Flashing / EVS / Multi-Tone Sounder Combination



Multi-functional LED beacon:  
3 light effects can be  
externally triggered



The adaptor enables  
mounting on a tube (431)

## ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

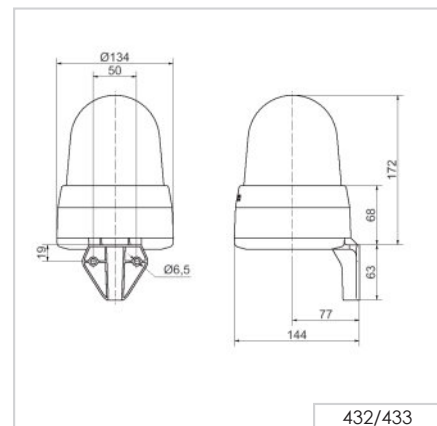
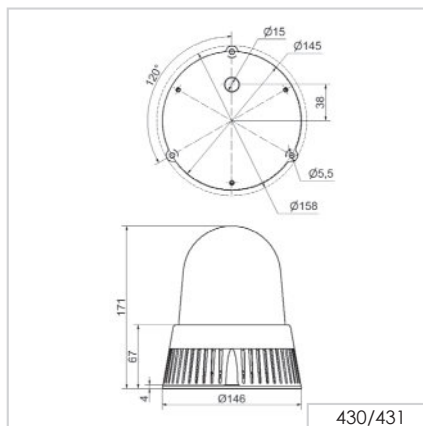
	Base mounting (431)	Wall mounting (433)
Dimensions (Ø x Height):	146 mm x 171 mm	134 mm x 235 mm
Housing:	PCABS-Blend, black	PC/ABS-Blend, grey
Lens:	PC, transparent	
Connection:	Screw terminal 0.5-1.5 mm <sup>2</sup>	
Cable entry:	Cable diameter max. 13 mm	
Tone type and frequency:	32 tones adjustable, see table on page 210	
Installation position:	Sound outlet facing downwards	
Life duration:	Up to 50,000 hrs (LED), up to 5,000 hrs (Multi-tone Sounder)	
Fixing:	Base mounting (431), Wall mounting (433) Tube mounting (accessory, only for 431)	
Voltage:	24 V AC/DC	115-230 V AC*
Current consumption MTS:	190 mA	55 mA
Current consumption LED:	350 mA 230 mA (red)	100 mA 80 mA (red)
<b>Base mounting</b>		
red	<b>431 100 75</b>	<b>431 100 60</b>
yellow	<b>431 300 75</b>	<b>431 300 60</b>
<b>Wall mounting</b>		
red	<b>433 100 75</b>	<b>433 100 60</b>
yellow	<b>433 300 75</b>	<b>433 300 60</b>

\*Current consumption at 115 V

## ✂ ACCESSORIES:

Adaptor for tube mounting, plastic, for tube Ø 25 mm	<b>975 430 01</b>
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## ↩ TECHNICAL DIAGRAMS:



## 43 x Tone table for Multi-Tone Sounder

The Multi-Tone Sounder Combinations 43x offer a large choice of internationally recognised signal tones for the widest range of applications. The tone types and frequencies can be found in the table below:

🎵 TONE TYPES AND FREQUENCIES:						
Tone 1	Tone type	Frequency (Hz)	Description	Use	Tone 2	Sound output (dbA)
1	continuous	200		BS 5839-1:2002	440 Hz cont.	97
2	rising	800 & 970	7 Hz		14	102
3	rising	800 & 970	1 Hz		14	103
4	continuous	2850			14	104
5	rising	2400 - 2850	7 Hz		4	109
6	rising	2400 - 2850	1 Hz		4	110
7	rising	500 - 1200	3 s, then 0.5 s OFF (then repeat)		14	106
8	falling	1200 - 500	1 Hz	DIN 33404-3	14	104
9	alternating	2400 & 2850	2 Hz		4	111
10	pulse	970	0.5 Hz (1 s On/1 s Off)	BS 5839 Part 1 1988	14	101
11	alternating	800 & 970	1 Hz	BS 5839 Part 1 1988	14	105
12	pulse	2850	0.5 Hz		4	104
13	pulse	970		0,25 s On/1 s Off	14	98
14	continuous	970		BS 5839-1:2002 PFEER - Toxic gas	10	102
15	alternating	554 & 440		France NFS	14	101
16	pulse	660	150 ms On/150 ms Off	Swedish	16	96
17	pulse	660	1.8 s On/1.8 s Off	Swedish	17	98
18	pulse	660	6.5 s On/13 s Off	Swedish	18	98
19	continuous	660		Swedish	19	98
20	alternating	554 & 440	0.5 Hz		20	102
21	pulse	660	1 Hz	Swedish	21	97
22	pulse	2850	150 ms On/100 ms Off	GB	14	104
23	rising	800 - 970	50 Hz (low)	BS 5839 Part 1 1988	14	102
24	rising	2400 - 2850	50 Hz (high)		4	109
25	pulse	970	3 x 500 ms ON/500 ms OFF / 1.5 s silence, then repeat (low)	ISO 8201 US Temporal	26	101
26	pulse	2850	3 x 500 ms ON/500 ms OFF / 1.5 s silence, then repeat (high)	ISO 8201 US Temporal	25	104
27	continuous	4000			27	92
28	rising	2000 - 2850	7 Hz		2000 Hz cont.	111
29	alternating	988 & 645	2 Hz		988 Hz cont.	102
30	alternating	510 & 610	2 Hz		510 Hz cont.	102
31	alternating	800 & 970	2 Hz	5839-1:2002	800 Hz cont.	105
32	alternating	800 & 1200	1 Hz		800 Hz cont.	105



# 434 LED Permanent Light / Horn Combination



Award winning design Winner of the iF product design award 2012



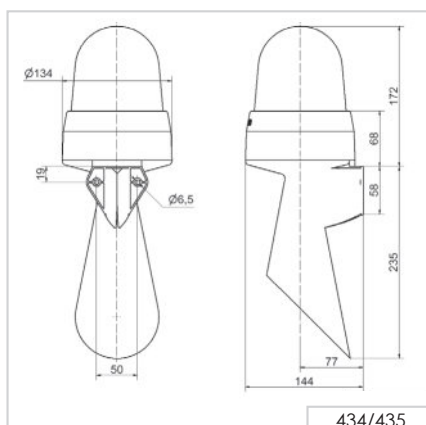
Quick and simple wall mounting without additional accessories thanks to integrated mounting bracket

## ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	134 mm x 407 mm x 144 mm	
Housing:	PC/ABS-Blend, grey	
Lens:	PC, transparent	
Connection:	Screw terminal 0.5-1.5 mm <sup>2</sup>	
Cable entry:	Cable diameter max. 13 mm	
Tone frequency:	c. 110 Hz	
Life duration:	Up to 50,000 hrs (LED), up to 5,000 hrs (Horn)	
Fixing:	Wall mounting, integrated mounting bracket	
Installation position:	Sound outlet facing downwards	
Voltage:	24 V AC/DC	115-230 V AC*
Current consumption MTS:	55 mA	30 mA
Current consumption LED:	350 mA	100 mA
	230 mA (red)	80 mA (red)
red	<b>434 100 75</b>	<b>434 100 60</b>
yellow	<b>434 300 75</b>	<b>434 300 60</b>

\*Current consumption at 115 V

## ↩ TECHNICAL DIAGRAMS:



Optical-audible combinations



# 435 LED Permanent / Flashing / EVS / Horn Combination



Multi-functional LED beacon:  
3 light effects can be triggered  
externally

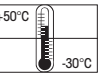
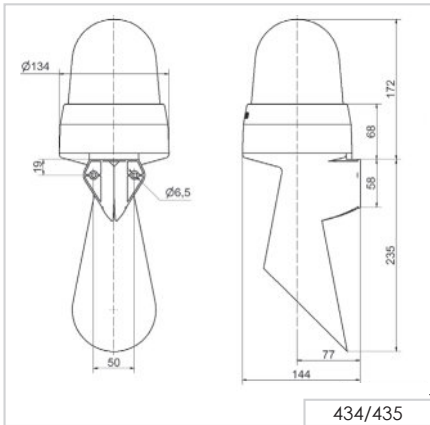


The "EVS" light effect ensures a  
maximum attention-grabbing  
effect

## ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	134 mm x 407 mm x 144 mm	
Housing:	PC/ABS-Blend, grey	
Lens:	PC, transparent	
Connection:	Screw terminal 0.5-1.5 mm <sup>2</sup>	
Cable entry:	Cable diameter max. 13 mm	
Tone frequency:	c. 110 Hz	
Life duration:	Up to 50,000 hrs (LED), up to 5,000 hrs (Horn)	
Fixing:	Wall mounting, integrated mounting bracket	
Installation position:	Sound outlet facing downwards	
Voltage:	24 V AC/DC	115-230 V AC*
Current consumption MTS:	55 mA	30 mA
Current consumption LED:	350 mA	100 mA
	220 mA (red)	80 mA (red)
red	<b>435 100 75</b>	<b>435 100 60</b>
yellow	<b>435 300 75</b>	<b>435 300 60</b>
*Current consumption at 115 V		

## ← TECHNICAL DIAGRAMS:





# Design Combination LED Multi-Tone Sirens

## Your benefits

The Design Combination LED Multi-Tone Sirens provide safety and security in environments with heightened aesthetic design requirements. The innovative housing design makes for simple mounting in many diverse applications.

- Ideal signalling effect over great distances
- Multiple visual and audible escalation levels possible
- Many application options with up to 32 tones available
- Up to 3 tones controlled remotely for the escalation of signals
- Includes standardised tones (including those used in fire alarms)

## Typical applications

Fault signalling

- In building service systems
- On machinery and equipment

## Installation options

- Wall mounting
- Base mounting
- Ceiling mounting

## Features

- Multi-voltage versions allow multiple applications with a single device
- Long life and energy-saving LEDs, either as a flashing light or EVS



Size comparison Design / Heavy Duty



# 444 LED Double Flash/Multi-Tone Sounder Combination



Base mounting



Wall mounting

## ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	109 mm x 112 mm x 150 mm		
Housing:	PC/ABS-Blend		
Lens:	PC, transparent		
Connection:	24 V: Screw terminal 0.5-1.5 mm <sup>2</sup> 115/230 V: CAGE CLAMP®		
Cable entry:	Membrane for cable diameter max. 13 mm		
Life duration:	Up to 50,000 hrs (LED Double Flash)		
Flash frequency:	c. 1 Hz		
Fixing:	Wall, base and ceiling mounting		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption Optical:	60 mA	30 mA	30 mA
Current consumption Audible:	200 mA	55 mA	30 mA
red	<b>444 100 75</b>	<b>444 100 67</b>	<b>444 100 68</b>
yellow	<b>444 300 75</b>	<b>444 300 67</b>	<b>444 300 68</b>

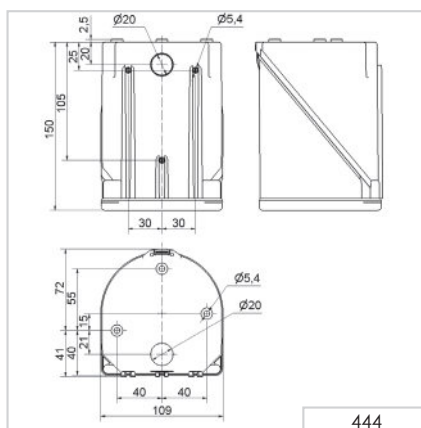
## ✂ ACCESSORIES:

Cable gland M20 x 1.5 mm (for cable strain relief)	<b>975 444 01</b>
Protection rating IP 65 is guaranteed even without cable gland	

## 🎵 TONE TYPES AND FREQUENCIES:

Selectable via DIP switch, see tone table on page 230, 3 tones can be externally triggered

## ↩ TECHNICAL DIAGRAMS:



24 V	115 V / 230 V		(A)	24 V
330 g	470 g	IP65	+50°C -30°C	110 dB
				32
				PLC



# 444 LED EVS / Multi-Tone Sounder Combination



Base mounting



The „EVS“ light effect ensures a maximum attention-grabbing effect

## ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	109 mm x 112 mm x 150 mm		
Housing:	PC/ABS-Blend		
Lens:	PC, transparent		
Connection:	24 V: Screw terminal 0.5-1.5 mm <sup>2</sup> 115/230 V: CAGE CLAMP®		
Cable entry:	Membrane for cable diameter max. 13 mm		
Fixing:	Wall, base and ceiling mounting		
Life duration:	Up to 50,000 hrs (LED EVS)		
Voltage:	24 V AC/DC	115 V AC	230 V AC
Current consumption Optical:	60 mA	30 mA	30 mA
Current consumption Audible:	220 mA	55 mA	30 mA
red	<b>444 110 75</b>	<b>444 110 67</b>	<b>444 110 68</b>
yellow	<b>444 310 75</b>	<b>444 310 67</b>	<b>444 310 68</b>

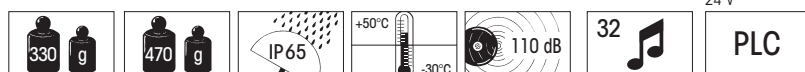
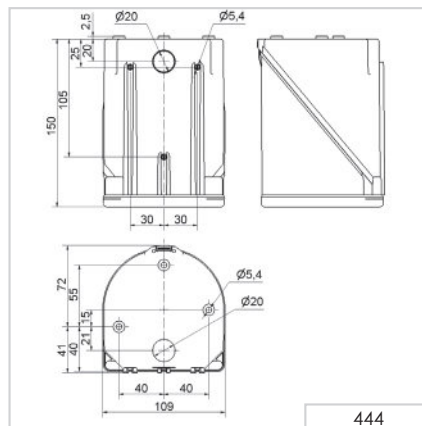
## ✂ ACCESSORIES:

Cable gland M20 x 1.5 mm (for cable strain relief)	<b>975 444 01</b>
Protection rating IP 65 is guaranteed even without cable gland	

## 🎵 TONE TYPES AND FREQUENCIES:

Selectable via DIP switch, see tone table on page 216, 3 tones can be externally triggered

## ↔ TECHNICAL DIAGRAMS:



## 444 Combination

The 444 Combinations offer a large choice of internationally recognised signal tones for the widest spectrum of applications. 3 tones can be triggered externally.

### STONE TYPES AND FREQUENCIES:

Tone 1	Tone type	Frequency (Hz)	Description	Use	Tone 2	Sound output (dbA)
1	continuous	200		BS 5839-1:2002	440 Hz cont.	97
2	rising	800 & 970	7 Hz		14	102
3	rising	800 & 970	1 Hz		14	103
4	continuous	2850			14	104
5	rising	2400 - 2850	7 Hz		4	109
6	rising	2400 - 2850	1 Hz		4	110
7	rising	500 - 1200	3 s, then 0.5 s OFF (then repeat)		14	106
8	falling	1200 - 500	1 Hz	DIN 33404-3	14	104
9	alternating	2400 & 2850	2 Hz		4	111
10	pulse	970	0.5 Hz (1 s On/1 s Off)	BS 5839 Part 1 1988	14	101
11	alternating	800 & 970	1 Hz	BS 5839 Part 1 1988	14	105
12	pulse	2850	0.5 Hz		4	104
13	pulse	970		0,25 s On/1 s Off	14	98
14	continuous	970		BS 5839-1:2002 PFEER - Toxic gas	10	102
15	alternating	554 & 440		France NFS	14	101
16	pulse	660	150 ms On/150 ms Off	Swedish	16	96
17	pulse	660	1.8 s On/1.8 s Off	Swedish	17	98
18	pulse	660	6.5 s On/13 s Off	Swedish	18	98
19	continuous	660		Swedish	19	98
20	alternating	554 & 440	0.5 Hz		20	102
21	pulse	660	1 Hz	Swedish	21	97
22	pulse	2850	150 ms On/100 ms Off	GB	14	104
23	rising	800 - 970	50 Hz (low)	BS 5839 Part 1 1988	14	102
24	rising	2400 - 2850	50 Hz (high)		4	109
25	pulse	970	3 x 500 ms ON/500 ms OFF / 1.5 s silence, then repeat (low)	ISO 8201 US Temporal	26	101
26	pulse	2850	3 x 500 ms ON/500 ms OFF / 1.5 s silence, then repeat (high)	ISO 8201 US Temporal	25	104
27	continuous	4000			27	92
28	rising	2000 - 2850	7 Hz		2000 Hz cont.	111
29	alternating	988 & 645	2 Hz		988 Hz cont.	102
30	alternating	510 & 610	2 Hz		510 Hz cont.	102
31	alternating	800 & 970	2 Hz	5839-1:2002	800 cont.	105
32	alternating	800 & 1200	1 Hz		800 cont.	105



# Heavy Duty Combination – Multi-Tone Siren with Xenon Flash

## Your benefits

The WERMA Heavy Duty Combination - Multi-Tone Siren with Xenon Flash features a very robust housing. The combination device provides safety and security through reliable, loud signalling in particularly harsh environments. Up to 120 dB for use in extremely noisy environments and signalling over long distances.

- Multiple visual and audible escalation levels possible
- Includes standardised tones (including those used in fire alarms)
- Up to 42 tones for signalling various statuses

## Typical applications

Signalling of faults or alarms

- Outdoors in extreme conditions
- In larger industrial plants
- As an evacuation alarm

## Installation options

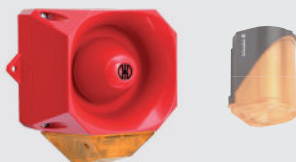
- Wall mounting

## Features

- High protection rating IP66
- Multi-voltage versions available



Size comparison Heavy Duty / Design



# 439 Xenon Flash / Multi-Tone Sounder Combination (105 dB)



## ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	136 mm x 138 mm x 119 mm	
Housing:	ABS	
Connection:	Screw terminal 0.28-2.5 mm <sup>2</sup>	
Cable entry:	Cable gland M20 x 1.5 mm (not included in assembly)	
Flash frequency:	1 Hz	
Flash energy	1.6 Ws	
Tone type and frequency:	Selectable via DIP switch, 2 tones can be externally triggered	
Voltage:	9-60 V DC	110-230 V AC
Current consumption:	230 mA (24 V)	30 mA (230 V)
Housing/Flash		
red / red	<b>439 010 55</b>	<b>439 010 68</b>
red / yellow	<b>439 030 55</b>	<b>439 030 68</b>
grey / red	<b>439 110 55</b>	<b>439 110 68</b>
grey / yellow	<b>439 130 55</b>	<b>439 130 68</b>

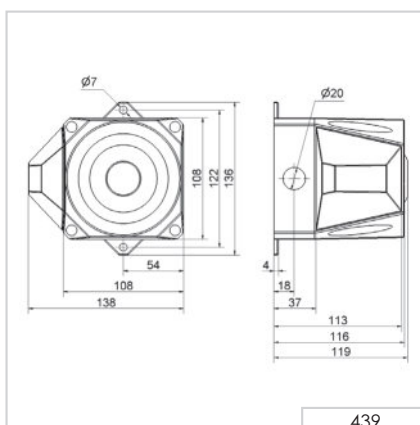
## ✂ ACCESSORIES:

Cable gland M20 x 1.5 mm (for cable strain relief)	<b>975 444 01</b>
Protection rating IP 65 is guaranteed even without cable gland	

## 🎵 TONE TYPES AND FREQUENCIES:

For further details see [www.werma.com](http://www.werma.com).

## ↔ TECHNICAL DIAGRAMS:





# 441 Xenon Flash / Multi-Tone Sounder Combination (110 dB)



## ① TECHNICAL SPECIFICATIONS/ORDER SPECIFICATIONS:

Dimensions (L x H x W):	165 mm x 169 mm x 132 mm	
Housing:	PC/ABS-Blend	
Connection:	Screw terminal 0.28-2.5 mm <sup>2</sup>	
Cable entry:	Cable gland M20 x 1.5 mm (not included in assembly)	
Flash frequency:	1 Hz	
Flash energy	2.5 Ws	
Tone type and frequency:	Selectable via DIP switch, 2 tones can be externally triggered	
Voltage:	9-60 V DC	230 V AC
Current consumption:	230 mA	35 mA
Housing/Flash		
red / red	<b>441 010 55</b>	<b>441 010 68</b>
red / yellow	<b>441 030 55</b>	<b>441 030 68</b>
grey / red	<b>441 110 55</b>	<b>441 110 68</b>
grey / yellow	<b>441 130 55</b>	<b>441 130 68</b>

## ✂ ACCESSORIES:

Cable gland M20 x 1.5 mm (for cable strain relief)	<b>975 444 01</b>
Protection rating IP 65 is guaranteed even without cable gland	

## 🎵 TONE TYPES AND FREQUENCIES:

For further details see [www.werma.com](http://www.werma.com).

## ↔ TECHNICAL DIAGRAMS:

