Overview Optical-Audible Signal Devices

LED/Buzzer Combination

150 Installation model

80 dB
Page 196

450 Installation model with acknowledgement funcition

80 dB
Page 197

450 Installation model for AS-Interface

80 dB
Page 198

420 Base mounting

92 dB
Page 174

422 Wall mounting

109 dB
Page 178

LED/Multi-Tone Sounder Combination

420 Base mounting

105 dB
Page 175

422 Wall mounting

109 dB
Page 179

Light/Buzzer Combination

480 Wall Mounting

90 dB
Page 184

Light/Horn Combination

580 Wall Mounting

92 dB
Page 185

LED/Horn Combination

424 Wall Mounting

98 dB
Page 182

Flash/Horn Combination

425 Wall Mounting

98 dB
Page 183

581 Wall Mounting

92 dB
Page 185

Flash/Buzzer Combination

421 Base Mounting

92 dB
Page 176

423 Wall Mounting

92 dB
Page 180

Flash/Multi-Tone Sounder Combination

421 Base Mounting

105 dB
Page 177

423 Wall Mounting

109 dB
Page 181

439 Wall Mounting

105 dB
Page 186

441 Wall Mounting

110 dB
Page 187

442 Wall Mounting

120 dB
Page 188

LED Double Flash/Multi-Tone Sounder Combination

NEW

444 Base, Wall Mounting

114 dB
Page 190

LED EVS/ Multi-Tone Sounder Combination

NEW

444 Base, Wall Mounting

114 dB
Page 191

LED Traffic Light/Siren Combination

494 Wall Mounting 2 and 3 tier

90 dB
Page 193

494 Wall Mounting 1, 2 and 3 tier

90 dB
Page 194

(LED)Traffic Light/Multi-Tone Sounder Combination

NEW

Permanent Beacon 890 with Multi-Tone Sounder 190

110 dB
Page 195

NEW

LED Permanent Beacon 890 with Multi-Tone Sounder 190

110 dB
Page 195

Signal Towers with Audible Element

Kombi*SIGN* 50, 70, 71 with audible element

80-105 dB
Page 199

Surface Housing for Combinations

975 Surface Housings for 1, 2 or 3 products

Page 199

Sounds

The sounds of these products can be played from our website www.werma.com under the heading “Optical-Audible Signal Devices”.

Further information

Further information about the “Audible” theme can be found in the chapter “Tech-Talk” beginning on page 332.

Optical-Audible Signal Devices

Double safety with optical-audible signals

Under certain conditions operational sites with a high or changing noise level require a coloured, optical stimulus in addition to the audible signal. The combination of optical and audible signals leads to greater effectivity as both the eyes and ears are addressed by the sensory stimuli. The combination of an optical and an audible signal rules out the possibility of mistakes or the audible signal being overheard.

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 Sounders
- (Installation) Buzzers
- Horns

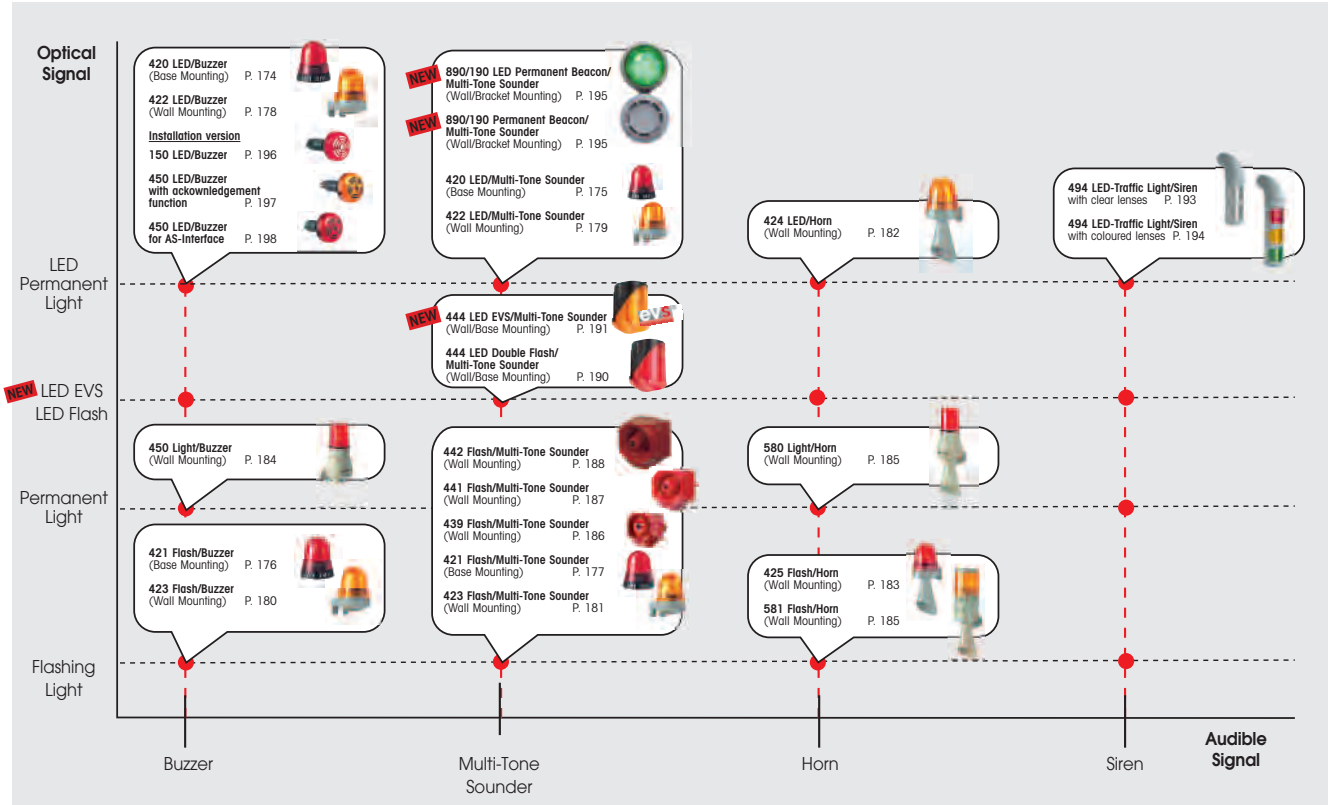
OPTICAL SIGNALS

- LED Permanent Light
- (LED) Flashing Light and
- LED Double Flash Light
- NEW LED EVS Signal

Quick-Finder for Optical-Audible Signal Devices

WERMA provides its customers with a comprehensive selection of Optical-Audible Signal Devices. A range of different light effects and signal tones are available.

With our Quick-Finder you can quickly and easily locate the correct signal device for your application. If you require additional support in selecting a suitable signal device, simply give us a call!



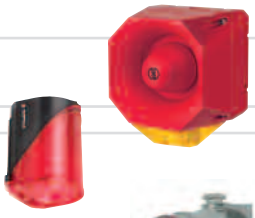
WERMA SIGNALTECHNIK

Comparison of sound output

Play Sound www.werma.com

120 dB

442	Flash/Multi-Tone Sounder Combination	Page 188	

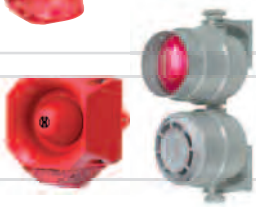


114 dB

NEW 444	LED EVS/Multi-Tone Sounder Combination	Page 191	
444	LED Double Flash/Multi-Tone Sounder Combination	Page 190	

110 dB

441	Flash/Multi-Tone Sounder Combination	Page 187	
NEW 190/890	(LED) Beacon/Multi-Tone Sounder Combination	Page 195	



109 dB

422	LED/Multi-Tone Sounder Combination	Page 179	
423	Flash/Multi-Tone Sounder Combination	Page 181	

105 dB

420	LED/Multi-Tone Sounder Combination	Page 175	
421	Flash/Multi-Tone Sounder Combination	Page 177	
439	Flash/Multi-Tone Sounder Combination	Page 186	

100 dB

98 dB

424	LED/Horn Combination	Page 182	
425	Flash/Horn Combination	Page 183	

96 dB

494	LED Traffic Light/Siren Combination	Page 193	
494	LED Beacon/Siren Combination	Page 194	

92 dB

420	LED/Buzzer Combination	Page 174	
421	Flash/Buzzer Combination	Page 176	
422	LED/Buzzer Combination	Page 178	
423	Flash/Buzzer Combination	Page 180	
580	Light/Horn Combination	Page 185	
581	Flash/Horn Combination	Page 185	

90 dB

480	Light/Buzzer Combination	Page 184	

80 dB

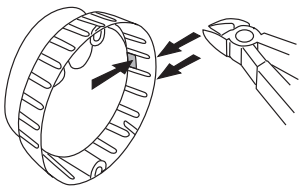
150	LED/Buzzer Combination	Page 196	
450	LED/Buzzer Combination with acknowledgement function	Page 197	
450	LED/Buzzer Combination for AS-Interface	Page 198	

Sound output in db (measured at 1 m distance)

420 LED/Buzzer Combination

Base mounting

Tube mounting (accessory)



- Buzzer in combination with LED Permanent Beacon
- Long life duration up to 50,000 hrs
- NEW • Adaptor for tube mounting (accessory)
- Optical and audible signals can be triggered separately
- Continuous or pulse tone selectable
- Easy to mount

TECHNICAL SPECIFICATIONS:

Life duration up to 50,000 hrs

Dimensions (Ø x Height):	89 mm x 100.5 mm
Housing:	PC, black
Lens:	PC, transparent
Connection:	Screw terminal with wire protection max. 1.5 mm²
Cable entry:	Cable diameter max. 9 mm
Tone type:	Continuous tone or pulse tone, adjustable 12 V: only continuous tone
Tone frequency:	2.3 kHz
Fixing:	Base mounting, tube mounting (accessory)
Life duration:	Up to 50,000 hrs (LED)

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	12 V ⎓	24 V ≂	115 V ~	230 V ~
Current consumpt. LED	80 mA	45 mA	25 mA	25 mA
Current consumpt. Buzzer	40 mA	15 mA	15 mA	25 mA
red	**420 110 54**	**420 110 75**	**420 110 67**	**420 110 68**
yellow	**420 310 54**	**420 310 75**	**420 310 67**	**420 310 68**

ACCESSORIES:

NEW Adaptor for tube mounting, plastic, for tube Ø 25 mm	**975 420 01**
Base for tube Ø 25 mm, plastic, incl. rubber seal	**975 840 90**
Base for tube Ø 25 mm, metal, incl. rubber seal	**975 840 91**
Tube Ø 25 mm, all anodized aluminium 100 mm 250 mm	 **975 845 10** **975 840 25**

TECHNICAL DIAGRAMS:

see page 271

420 X10 54

24 V

CE VdS PG 110 g IP65 +50°C -20°C 92 dB PLC

WERMA SIGNALTECHNIK

LED/Multi-Tone Sounder Combination

Base mounting

NEW The new adaptor (accessory) allows quick and simple mounting on a tube

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

- Multi-Tone Sounder in combination with LED Permanent Beacon
- High life duration of up to 50,000 hrs
- Optical and audible signals can be triggered separately
- Choice of 8 different tones
- Easy to mount
- Adjustable sound output
- NEW Adaptor for tube mounting (accessory)

TECHNICAL SPECIFICATIONS:

Life duration up to 50,000 hrs

Dimensions (Ø x Height):	89 mm x 100.5 mm
Housing:	PC black
Lens:	PC, transparent
Connection:	Screw terminal with wire protection max. 1.5 mm²
Cable entry:	Cable diameter max. 9 mm
Fixing:	Base mounting, tube mounting (accessory)
Life duration:	Up to 50,000 hrs (LED)
Tone type:	Selectable, see table below
Tone frequency:	See table below

TONE TYPES AND FREQUENCIES:

Play Sound www.werma.com

Tone No.	Tone type
1	Horn tone (c. 110 Hz)
2	Continuous tone (c. 3.0 KHz)
3	1 Hz tone (c. 3.0 KHz)
4	20 Hz whistle tone (c. 3.0 KHz)
5	800-970 Hz rising @ 1 Hz
6	2400-2850 Hz rising @ 7 Hz
7	1200-500 Hz falling @ 1 Hz
8	Alternating tone 800 Hz / 1200 Hz @ 1Hz

ORDER SPECIFICATIONS:

Voltage	24 V≂
Current consumption LED	45 mA
Current consumption MTS	80 mA
red	**420 120 75**
yellow	**420 320 75**

ACCESSORIES:

Accessories see page 174.

TECHNICAL DIAGRAMS:

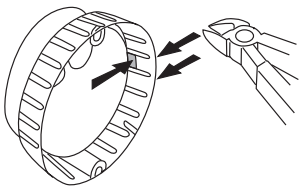
see page 271

CE PG 110 g IP65 +50°C -20°C 105 dB 8

421 Flash/Buzzer Combination

Base mounting

Tube mounting (accessory)



A piece of the rim can be broken out to allow for cable entry from the side

- Buzzer in combination with Xenon Flash
- Optical and audible signal can be triggered separately
- Continuous or pulse tone selectable
- Easy to mount
- NEW • Adaptor for tube mounting (accessory)

TECHNICAL SPECIFICATIONS:

Dimensions (Ø x Height):	89 mm x 100.5 mm
Housing:	PC, black
Lens:	PC, transparent
Connection:	Screwable protection with wire protection max. 1.5 mm²
Cable entry:	Cable diameter max. 9 mm
Tone type:	Continuous or pulse tone, selectable
Tone frequency:	2.3 kHz
Flash energy:	1 Ws
Flash frequency:	1 Hz
Fixing:	Base mounting, tube mounting (accessory)
Life duration:	4 x 10^6 flashes

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	24 V≂	115 V~	230 V~
Current consumption Flash	120 mA	25 mA	35 mA
Current consumption Buzzer	15 mA	15 mA	25 mA
red	**421 110 75**	**421 110 67**	**421 110 68**
yellow	**421 310 75**	**421 310 67**	**421 310 68**

ACCESSORIES:

NEW Adaptor for tube mounting, plastic, for tube Ø 25 mm	**975 420 01**
Base for tube Ø 25 mm, plastic, incl. rubber seal	**975 840 90**
Base for tube Ø 25 mm, metal, incl. rubber seal	**975 840 91**
Tube Ø 25 mm, all anodized aluminium	
100 mm	**975 845 10**
250 mm	**975 840 25**

TECHNICAL DIAGRAMS:

see page 271

CE PG 120 g IP65 +50°C -20°C 1 Ws 92 dB

421 Flash/Multi-Tone Sounder Combination

Base mounting

NEW The new adaptor (accessory) allows quick and simple mounting on a tube

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

- Multi-Tone Sounder in combination with Xenon Flash
- Optical and audible signal can be triggered separately
- Choice of 8 different tones
- Adjustable sound output
- Easy to mount
- NEW Adaptor for tube mounting (accessory)

TECHNICAL SPECIFICATIONS:

Dimensions (Ø x Height):	89 mm x 100.5 mm
Housing:	PC black
Lens:	PC, transparent
Connection:	Screw terminal with wire protection max. 1.5 mm^2
Cable entry:	Cable diameter max. 9 mm
Flash energy:	1 Ws
Flash frequency:	1 Hz
Fixing:	Base mounting, tube mounting (accessory)
Life duration:	4 x 10^6 flashes
Tone type:	Selectable, see table below
Tone frequency:	See table below

TONE TYPES AND FREQUENCIES:

Play Sound www.werma.com

Tone No.	Tone type
1	Horn tone (c. 110 Hz)
2	Continuous tone (c. 3.0 KHz)
3	1 Hz tone (c. 3.0 KHz)
4	20 Hz whistle tone (c. 3.0 KHz)
5	800-970 Hz rising @ 1 Hz
6	2400-2850 Hz rising @ 7 Hz
7	1200-500 Hz falling @ 1 Hz
8	Alternating tone 800 Hz / 1200 Hz @ 1Hz

ORDER SPECIFICATIONS:

Voltage	24 V≂
Current consumption Flash	120 mA
Current consumption MTS	80 mA
red	**421 120 75**
yellow	**421 320 75**

ACCESSORIES:

Accessories see page 176.

TECHNICAL DIAGRAMS:

see page 271

CE VdS

PG | 120 g | IP65 | +50°C -20°C | 105 dB | 1 Ws | 8

422 LED/Buzzer Combination

- Buzzer in combination with LED Permanent Beacon
- Long life duration up to 50,000 hrs
- Integrated mounting bracket
- Optical and audible signal can be triggered separately
- Continuous or pulse tone selectable

Life duration up to 50,000 hrs

TECHNICAL SPECIFICATIONS:

Dimensions (L x H x W):	83 mm x 120.5 mm x 91 mm
Housing:	PC/ABS-Blend; PC grey
Lens:	PC, transparent
Connection:	Screw terminal with wire protection max. 1.5 mm²
Cable entry:	Cable diameter max. 9 mm
Tone type:	Continuous or pulse tone, selectable 12 V: only continuous tone
Tone frequency:	2.3 kHz
Fixing:	Wall mounting, sound outlet facing downwards
Life duration:	Up to 50,000 hrs (LED)

Play Sound www.werma.com

ORDER SPECIFICATIONS:

Voltage	12 V⎓	24 V⎓	115 V~	230 V~
Current consumption LED	80 mA	45 mA	25 mA	25 mA
Current consumption Buzzer	40 mA	15 mA	15 mA	25 mA
red	**422 110 54**	**422 110 75**	**422 110 67**	**422 110 68**
yellow		**422 310 75**	**422 310 67**	**422 310 68**

TECHNICAL DIAGRAMS:

see page 272

422 X10 54

WERMA SIGNALTECHNIK

422 LED/Multi-Tone Sounder Combination

- Multi-Tone Sounder in combination with LED Permanent Beacon
- Long life duration of up to 50,000 hrs
- Optical and audible signals can be triggered separately
- Integrated mounting bracket
- Choice of 8 different tones
- Easy to mount
- Adjustable sound output

TECHNICAL SPECIFICATIONS:

Life duration up to 50,000 hrs

Dimensions (L x H x W):	83 mm x 120.5 mm x 91 mm
Housing:	PC/ABS-Blend; PC grey
Lens:	PC, transparent
Connection:	Screw terminal with wire protection max. 1.5 mm²
Cable entry:	Cable diameter max. 9 mm
Fixing:	Wall mounting, sound outlet facing downwards
Life duration:	Up to 50,000 hrs (LED)
Tone type:	Selectable, see table below
Tone frequency:	See table below

TONE TYPES AND FREQUENCIES:

Play Sound www.werma.com

Tone No.	Tone type
1	Horn tone (c. 110 Hz)
2	Continuous tone (c. 3.0 KHz)
3	1 Hz tone (c. 3.0 KHz)
4	20 Hz whistle tone (c. 3.0 KHz)
5	800-970 Hz rising @ 1 Hz
6	2400-2850 Hz rising @ 7 Hz
7	1200-500 Hz falling @ 1 Hz
8	Alternating tone 800 Hz / 1200 Hz @ 1Hz

ORDER SPECIFICATIONS:

Voltage	24 V≂
Current consumption LED	45 mA
Current consumption MTS	80 mA
red	**422 120 75**
yellow	**422 320 75**

TECHNICAL DIAGRAMS:

see page 272

CE VdS PG 130 g IP65 +50°C -20°C 109 dB 8

423 Flash/Buzzer Combination

- **Buzzer in combination with Xenon flash**
- **Optical and audible signal can be triggered separately**
- **Integrated mounting bracket**
- **Continuous or pulse tone selectable**

TECHNICAL SPECIFICATIONS:

Dimensions (L x H x W):	83 mm x 120.5 mm x 91 mm
Housing:	PC/ABS-Blend; PC grey
Lens:	PC, transparent
Connection:	Screw terminal with wire protection max. 1.5 mm^2
Cable entry:	Cable diameter max. 9 mm
Tone type:	Continuous or pulse tone, selectable
Tone frequency:	2.3 kHz
Flash energy:	1 Ws
Flash frequency:	1 Hz
Fixing:	Wall mounting, sound outlet facing downwards
Life duration:	4 x 10^6 flashes

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	24 V ⎓	115 V ~	230 V ~
Current consumption Flash	120 mA	25 mA	35 mA
Current consumption Buzzer	15 mA	15 mA	25 mA
red	**423 110 75**	**423 110 67**	**423 110 68**
yellow	**423 310 75**	**423 310 67**	**423 310 68**

TECHNICAL DIAGRAMS:

see page 272

CE PG 140 g IP65 +50°C -20°C 92 dB 1 Ws

423 Flash/Multi-Tone Sounder Combination

- Multi-Tone Sounder in combination with Xenon Flash
- Optical and audible signal can be triggered separately
- Choice of 8 different tones
- Integrated mounting bracket
- Adjustable sound output

TECHNICAL SPECIFICATIONS:

Dimensions (L x H x W):	83 mm x 120.5 mm x 91 mm
Housing:	PC/ABS-Blend; PC grey
Lens:	PC, transparent
Connection:	Screw terminal with wire protection max. 1.5 mm^2
Cable entry:	Cable diameter max. 9 mm
Flash energy:	1 Ws
Flash frequency:	1 Hz
Fixing:	Wall mounting, sound outlet facing downwards
Life duration:	4 x 10^6 flashes
Tone type:	Selectable, see table below
Tone frequency:	See table below

TONE TYPES AND FREQUENCIES:

Play Sound www.werma.com

Tone No.	Tone type
1	Horn tone (c. 110 Hz)
2	Continuous tone (c. 3.0 KHz)
3	1 Hz tone (c. 3.0 KHz)
4	20 Hz whistle tone (c. 3.0 KHz)
5	800-970 Hz rising @ 1 Hz
6	2400-2850 Hz rising @ 7 Hz
7	1200-500 Hz falling @ 1 Hz
8	Alternating tone 800 Hz / 1200 Hz @ 1Hz

ORDER SPECIFICATIONS:

Voltage	24 V≂
Current consumption Flash	120 mA
Current consumption MTS	80 mA
red	**423 120 75**
yellow	**423 320 75**

TECHNICAL DIAGRAMS:

see page 272

CE VdS

PG | 140 g | IP65 | +50°C -20°C | 109 dB | 1 Ws | 8

424 LED/Horn Combination

- Electronic Horn in combination with LED Permanent Beacon
- Horn with long life duration up to 5,000 hrs
- Optical and audible signal can be triggered separately
- Adjustable sound output (24 V version)

TECHNICAL SPECIFICATIONS:

Life duration up to 50,000 hrs

Dimensions (L x H x W):	83 mm x 234.5 mm x 91 mm
Housing:	PC/ABS-Blend; PC grey
Lens:	PC, transparent
Connection:	Screw terminal with wire protection max. 1.5 mm²
Cable entry:	Cable diameter max. 9 mm
Fixing:	Wall mounting, sound outlet facing downwards
Life duration:	50,000 hrs (LED Permanent light) 5,000 hrs (Horn)
Tone frequency:	110 Hz

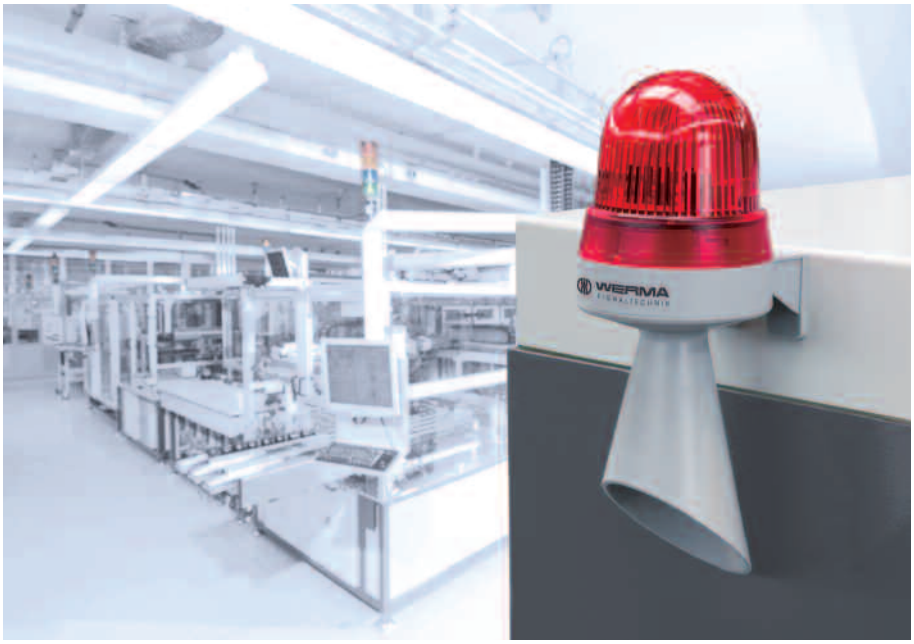
ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	24 V≂	115 V~	230 V~
Current consumption LED	45 mA	25 mA	25 mA
Current consumption Horn	80 mA	70 mA	70 mA
red	**424 120 75**	**424 120 67**	**424 120 68**
yellow	**424 320 75**	**424 320 67**	**424 320 68**

TECHNICAL DIAGRAMS:

see page 272



CE PG 170 g IP65 +50°C -20°C 98 dB

425 Flash/Horn Combination

- **Electronic Horn in combination with Xenon Flash**
- **Horn with long life duration of up to 5,000 hrs**
- **Optical and audible signal can be triggered separately**
- **Adjustable sound output (24 V version)**

TECHNICAL SPECIFICATIONS:

Dimensions (L x H x W):	83 mm x 234.5 mm x 91 mm
Housing:	PC/ABS-Blend; PC grey
Lens:	PC, transparent
Connection:	Screw terminal with wire protection max. 1.5 mm^2
Cable entry:	Cable diameter max. 9 mm
Flash energy:	1 Ws
Flash frequency:	1 Hz
Fixing:	Wall mounting, sound outlet facing downwards
Life duration:	4 x 10^6 flashes (Xenon Flash)
	5,000 hrs (Horn)
Tone frequency:	110 Hz

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	24 V≂	115 V~	230 V~
Current consumption Flash	120 mA	30 mA	30 mA
Current consumption Horn	80 mA	70 mA	70 mA
red	**425 120 75**	**425 120 67**	**425 120 68**
yellow	**425 320 75**	**425 320 67**	**425 320 68**

ADDITIONAL INFORMATION:

424 and 425 Combinations win the design prize „Focus Safety Silver 2007"

In October 2007 the Optical-Audible Combinations 424 and 425 won the design prize "Focus Safety in Silver". Awarded for excellent design, the prize distinguishes products that have attained a leading position due to their exceptional design qualities.

Whilst taking the usual design criteria into consideration, the jury judging the "Focus Safety in Silver 2007" placed special emphasis on the aspects of product safety and functionality.

Awards were given to products where safety plays a central role in design considerations and where the product functionality succeeded in communicating and delivering safety.

Focus Safety Silver 2007

TECHNICAL DIAGRAMS:

see page 272

CE PG 190 g IP65 +50°C -20°C 98 dB 1 Ws

480 Light/Buzzer Combination

- **Light and sound can be triggered separately**
- **Integrated mounting bracket**

TECHNICAL SPECIFICATIONS:

Dimensions (L x H x W):	70 mm x 158.5 mm x 77 mm
Housing:	ABS
Lens:	PC, transparent
Socket:	B15d, max. 7 Watt
Connection:	Screw terminal max. 2.5 mm²
Cable entry:	Cable diameter max. 9 mm
Tone frequency:	c. 2400 Hz
Duty cycle:	100 %

Bulb included in assembly. Bulb Overview see pages 168 and 169.

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	24 V≂	230 V~
Current consumption	320 mA	50 mA
red	**480 152 55**	**480 152 68**
yellow	**480 352 55**	**480 352 68**

Further colours and voltages on request.

ADDITIONAL INFORMATION:

Please also see LED/Buzzer Combination 422 with additional advantages (page 178)

- High protection rating IP 65
- Buzzer in combination with LED
- Long life duration of up to 50,000 hrs
- Continuous and pulse tone selectable

TECHNICAL DIAGRAMS:

see page 274

CE PG 200 g IP33 +50°C -20°C 90 dB

580 Light/Horn Combination

- Light and sound can be triggered separately
- Integrated mounting bracket

TECHNICAL SPECIFICATIONS:

Dimensions (L x H x W):	70 mm x 251 mm x 77 mm
Housing:	ABS
Lens:	PC, transparent
Socket:	B15d, max. 7 Watt
Connection:	Screw terminal max. 2.5 mm²
Cable entry:	Cable diameter max. 9 mm
Duty cycle:	100 %

Bulb included in assembly. Bulb Overview see pages 168 and 169.

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	24 V ⎓	42 V ~	230 V ~
Current consumption	360 mA	250 mA	50 mA
red	**580 152 55**	**580 152 66**	**580 152 68**
yellow	**580 352 55**		**580 352 68**

Further colours and voltages on request.

TECHNICAL DIAGRAMS: see page 275

CE PG 270 g IP33 +50°C -20°C 92 dB

ADDITIONAL INFORMATION:

Please also see LED/Horn Combination 424 with add. advantages (page 182)

- High protection rating IP 65
- Horn with a life duration of up to 5,000 hrs
- LED Permanent light with a life duration of up to 50,000 hrs

581 Flash/Horn Combination

- Light and sound can be triggered separately
- Integrated mounting bracket

TECHNICAL SPECIFICATIONS:

Dimensions (L x H x W):	70 mm x 292 mm x 77 mm
Housing:	ABS
Lens:	PC, transparent
Connection:	Screw terminal max. 2.5 mm²
Cable entry:	Cable diameter max. 9 mm
Flash frequency:	c. 1 Hz
Flash energy:	2 Ws
Life duration:	4 x 10^6 flashes

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	12 V ⎓	24 V ⎓	230 V ~
Current consumption	300 mA	200 mA	40 mA
red		**581 152 55**	**581 152 68**
yellow	**581 352 54**	**581 352 55**	**581 352 68**

Further colours and voltages on request.

TECHNICAL DIAGRAMS: see page 276

CE PG 300 g IP33 +50°C -20°C 92 dB 2 Ws

ADDITIONAL INFORMATION:

Please also see Flash/Horn Combination 425 with add. advantages (Page 183)

- High Protection rating IP 65
- Horn with a life duration of up to 5,000 hrs
- Adjustable sound output

439 Flash/Multi-Tone Sounder Combination

- Multi-Tone Sounder in combination with Xenon Flash
- 32 tones for a diverse range of applications
- Adjustable sound output up to 105 dB
- 2 tones can be triggered externally
- Optical and audible signal can be triggered separately

TECHNICAL SPECIFICATIONS:

Dimensions (L x H x W):	136 mm x 138 mm x 119 mm
Housing:	ABS
Connection:	Screw terminal max. 2.5 mm²
Cable entry:	Cable gland M 20 x 1.5 mm (not included in assembly)
Flash frequency:	1 Hz
Flash energy:	1.6 Ws
Tone types and frequencies:	Selectable via DIP switch, see table on page 189

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	9-60 V ⎓	110-230 V ~
Current consumption	230 mA (24 V)	30 mA (230 V)
Housing / Flash		
red / red	**439 010 55**	**439 010 68**
red / yellow	**439 030 55**	**439 030 68**
grey / red	**439 110 55**	**439 110 68**
grey / yellow	**439 130 55**	**439 130 68**

ACCESSORIES:

Cable gland M 20 x 1.5 mm	**975 444 01**

TONE TYPES AND FREQUENCIES:

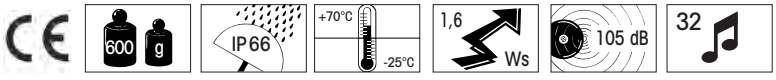
Tone table see page 221.
Variances possible. For further details see www.werma.com.

TECHNICAL DIAGRAMS:

see page 273

Multi-Tone Sounder in combination with a powerful Xenon Flash

Size comparison



WERMA SIGNALTECHNIK

441 Flash/Multi-Tone Sounder Combination

- Multi-Tone Sounder in Combination with Xenon Flash
- 32 tones for a diverse range of applications
- Adjustable sound output up to 110 dB
- 2 tones can be triggered externally
- Optical and audible signal can be triggered separately

TECHNICAL SPECIFICATIONS:

Dimensions (L x H x W):	165 mm x 169 mm x 132 mm
Housing:	PC/ABS-Blend
Connection:	Screw terminal max. 2.5 mm²
Cable entry:	Cable gland M 20 x 1.5 mm (not included in assembly)
Flash frequency:	1 Hz
Flash energy:	2.5 Ws
Tone types and frequencies:	Selectable via DIP switch, see table on page 189

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	9-60 V ⎓	230 V ~
Current consumption	230 mA	35 mA
Housing / Flash		
red / red	**441 010 55**	**441 010 68**
red / yellow	**441 030 55**	**441 030 68**
grey / red	**441 110 55**	**441 110 68**
grey / yellow	**441 130 55**	**441 130 68**

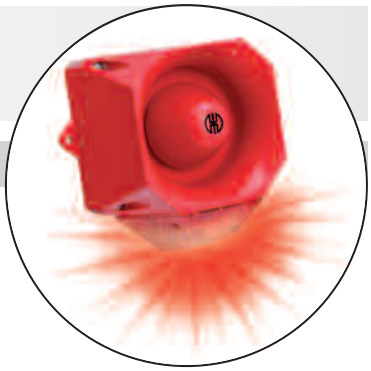
Cable gland M 20 x 1.5 mm	**975 444 01**

TONE TYPES AND FREQUENCIES:

Tone table see page 221.
Variances possible. For further details see www.werma.com.

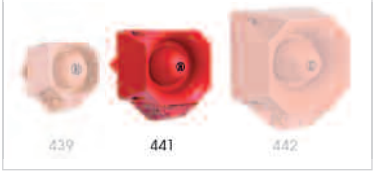
TECHNICAL DIAGRAMS:

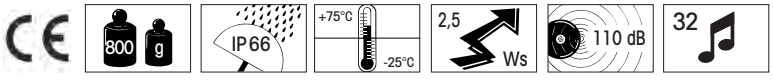
see page 273



Multi-Tone Sounder in combination with a powerful Xenon Flash

Size comparison





442 Flash/Multi-Tone Sounder Combination

- Multi-Tone Sounder in combination with Xenon Flash
- 4 different flash frequencies (24 V Version)
- 42 tones for a diverse range of applications
- Adjustable sound output up to 120 dB
- 3 tones can be triggered externally
- Duration of signal phase selectable
- Optical and audible signal can be triggered separately

TECHNICAL SPECIFICATIONS:

Dimensions (L x H x W):	168 mm x 211 mm x 155 mm
Housing:	PC/ABS-Blend
Connection:	Screw terminal max. 2.5 mm²
Cable entry:	Cable gland M 20 x 1.5 mm (not included in assembly)
Tone types and frequencies:	Selectable via DIP switch, see table on the right

ORDER SPECIFICATIONS:

Play Sound www.werma.com

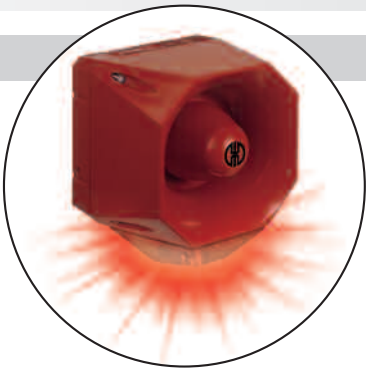
Voltage	18-30 V ⎓	115/230 V ~	
Current cons. Multi Tone Sounder	450 mA	130 / 65 mA	
Current consumption Flash	127 - 389 mA (dependent on voltage and flash frequency)	– / 15 mA	(dependent on voltage and flash frequency)
Flash frequency	0,75 Hz/1 Hz	1,25 Hz/2 Hz	1 Hz (Flash can only be operated with 230 V)
Flash energy	3,5 Ws	2 Ws	2 Ws
Housing/Flash			
red/red	**442 010 55**		**442 010 68**
red/yellow	**442 030 55**		**442 030 68**
grey/red	**442 110 55**		**442 110 68**
grey/yellow	**442 130 55**		**442 130 68**

ACCESSORIES:

Cable gland M 20 x 1.5 mm	**975 444 01**

TECHNICAL DIAGRAMS:

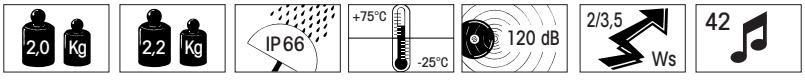
see page 273



Loud Multi-Tone Sounder in combination with a powerful Xenon Flash.

Size comparison

442 XX0 55 442 XX0 68



WERMA SIGNALTECHNIK

The Flash/Multi-Tone Sounder Combination 442 offers a large choice of international signal tones for the widest spectrum of applications. 3 tones can be triggered externally. The first two tones can be freely chosen. The third tone is paired with the second tone. See tone table.

TONE TYPES AND FREQUENCIES:

Tone 1+2 No	Tone type	Use	Output (dBA)	Tone 3
1	alternating 800/970 Hz in 2 Hz stroke (250 ms-250 ms)		120	14
2	rising 800/970 Hz in 7 Hz stroke (7/s)		120	14
3	rising 800/970 Hz in 1 Hz stroke (1/s)		120	14
4	continuous 2,850 Hz		111	9
5	rising 2,400-2,850 Hz in 7 Hz stroke		109	4
6	rising 2,400-2,850 Hz in 1 Hz stroke		110	4
7	500-1,200 Hz rising in 3 sec., 0.5 sec. OFF	Slow Whoop Holland	119	14
8	falling 1,200-500 Hz in 1 Hz stroke	DIN/PFEER (PAPA), DIN 33404-3, VDS tested	119	14
9	alternating 2,400/2,850 Hz in 2 Hz stroke (250 ms-250 ms)		113	4
10	pulse 970 Hz in 0,5 Hz stroke (1 sec. ON / 1 sec. OFF)	PFEER Alarm	117	14
11	alternating 800/970 Hz in 1 Hz stroke (500 ms-500 ms)		118	14
12	pulse 2,850 Hz in 0.5 Hz stroke (1 sec. ON / 1 sec. OFF)		112	4
13	970 Hz pulse: 0.25 sec. ON / 1 sec. OFF		117	14
14	continuous 970 Hz	PFEER - Toxic gas	118	8
15	554 Hz/100 ms alternating 440 Hz/400 ms	French alarm signal AFNOR NFS 32S 32-001	115	14
16	660 Hz pulse: 150 ms ON, 150 ms. OFF	Swedish alarm signal	114	14
17	660 Hz pulse: 1.8 sec. ON, 1.8 sec. OFF	Swedish alarm signal	115	14
18	660 Hz pulse: 6.5 sec. ON, 13 sec. OFF	Swedish alarm signal	115	14
19	continuous 660 Hz	Swedish alarm signal	116	1
20	alternating 554/440 Hz in 0.5 Hz stroke (1 sec. ON / 1 sec. OFF)	Swedish alarm signal	115	19
21	pulse 660 Hz in 1 Hz stroke (500 ms-500 ms)	Swedish alarm signal	115	4
22	pulse 2,850 Hz in 4 Hz stroke (150 ms ON / 100 ms OFF)		110	4
23	rising 800-970 Hz in 50 Hz stroke		117	14
24	rising 2,400-2,850 Hz in 50 Hz stroke		110	4
25	970 Hz puls.: 3 x 500 ms. ON, 500 ms OFF, break 1.5 sec.	ISO 8201 / US Temporal	118	14
26	2,850 Hz puls.: 3 x 500 ms. ON, 500 ms OFF, break 1.5 sec.	ISO 8201 / US Temporal	112	4
27	continuous 4,000 Hz		105	6
28	alternating 800/970 Hz in 2 Hz stroke (250 ms-250 ms)		118	14
29	alternating 990/650 Hz in 2 Hz stroke (250 ms-250 ms)		117	14
30	alternating 510/610 Hz in 2 Hz stroke (250 ms-250 ms)		116	14
31	rising 300-1,200 Hz in 1 Hz stroke		118	14
32	continuous Bell		117	3
33	continuous Bell: 3x500 ms. Pulse, 1.5 sec. Silence, then repeat	Bell / US Temporal	117	14
34	alternating 1,000/2,000 Hz in 1 Hz stroke (500 ms-500 ms)	Singapore	115	4
35	pulse 420 Hz (0,625 sec.)	Australian alarm signal	118	14
36	500-1,200 Hz rising in 3.75 sec., then 0,25 sec. OFF	Australian alarm signal (Evacuation)	117	14
37	rising 1,400-1,600 Hz in 1 sec., falling in 0.5 sec.	NF C 48-265	116	14
38	500-1,200 Hz rising and falling in 3 sec.	Siren	117	14
39	pulse 720 Hz: 0.7 sec. ON, 0.3 sec. OFF	German industrial alarm	118	14
40	rising 422-775 Hz in 0.85 sec., 1 sec. silence, then repeat	NFPA Whoop	118	14
41	continuous 470 Hz	Horn (USA)	114	3
42	continuous 370 Hz	Air Horn (USA)	113	3

444

LED Double Flash/ Multi-Tone Sounder Combination

Base mounting

Wall mounting

- Multi-Tone Sounder in combination with LED Double Flash
- Sound output adjustable up to 114 dB
- 32 tones for a diverse range of applications
- 3 Tones can be triggered externally
- Optical and audible signal can be triggered separately

TECHNICAL SPECIFICATIONS:

Life duration up to 50,000 hrs

Dimensions (L x H x W):	109 mm x 113 mm x 152 mm
Housing:	PC/ABS-Blend
Lens:	PC, transparent
Connection:	Screw terminal with wire protection max. 1.5 mm²
Cable entry:	Membrane for cable diameter max. 13 mm
Fixing:	Wall, base and ceiling mounting
Life duration:	Up to 50,000 hrs (LED Double Flash)
Flash frequency:	c. 1 Hz
Tone types and frequencies:	Selectable via DIP switch, see table on page 192

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage		24 V⎓	115 V~	230 V~
Current consumption	Optical	60 mA	30 mA	30 mA
	Audible	200 mA	55 mA	30 mA
red		**444 100 75**	**444 100 67**	**444 100 68**
yellow		**444 300 75**	**444 300 67**	**444 300 68**

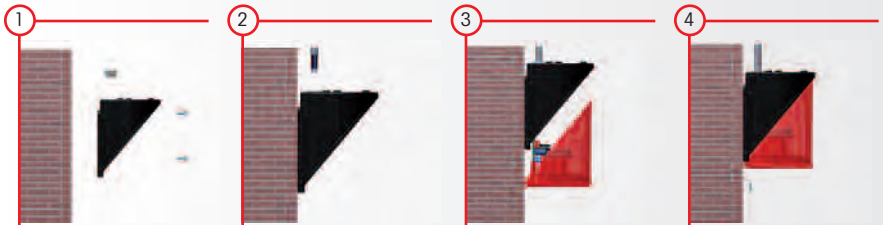
ACCESSORIES:

Cable gland M 20 x 1.5 mm (for cable strain relief) Protection rating IP 65 is provided even without cable gland	**975 444 01**

TONE TYPES AND FREQUENCIES:

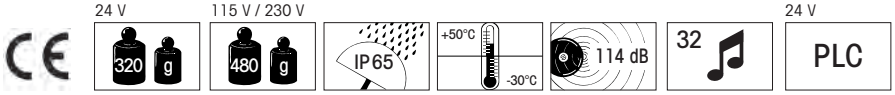
Selectable via DIP switch, see tone table on page 192.

QUICK AND SIMPLE MOUNTING



1. Place the lower part of the 444 Combination in the desired position.
2. Insert the connection cable and screw into terminal.
3. Secure the two parts with the screws supplied.
4. Secure the two parts with the screws supplied.

TECHNICAL DIAGRAMS: see page 273

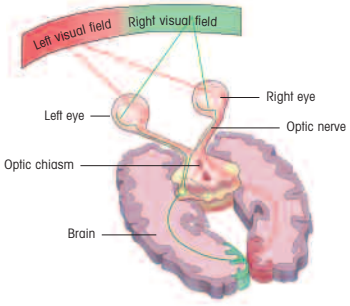


WERMA SIGNALTECHNIK

LED EVS/Multi-Tone Sounder Combination

Base mounting

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



The way in which the brain processes visual stimuli formed the basis for the development of the EVS technology

- **Multi-Tone Sounder in combination with LED EVS* signal**
- **Random sequence of light signals prevents acclimatisation effect**
- **32 tones for a diverse range of applications**
- **Sound output adjustable up to 114 dB**
- **3 tones can be triggered externally**
- **Optical and audible signal can be triggered separately**

TECHNICAL SPECIFICATIONS:

Life duration up to 50,000 hrs

Dimensions (L x H x W):	109 mm x 113 mm x 152 mm
Housing:	PC/ABS-Blend
Lens:	PC, transparent
Connection:	Screw terminal with wire protection max. 2.5 mm²
Cable entry:	Membrane for cable diamter max. 13 mm
Fixing:	Wall, base and ceiling mounting
Life duration:	Up to 50,000 hrs (LED EVS)
Tone types and frequencies:	Selectable via DIP switch, see table on page 192

ORDER SPECIFICATIONS:

Play Sound www.werma.com

		24 V ⎓	115 V ~	230 V ~
Voltage				
Current consumption	Optical	60 mA	30 mA	30 mA
	Audible	200 mA	55 mA	30 mA
red		**444 110 75**	**444 110 67**	**444 110 68**
yellow		**444 310 75**	**444 310 67**	**444 310 68**

ACCESSORIES:

Cable gland M 20 x 1.5 mm (for cable strain relief) **975 444 01**
Protection rating IP 65 is provided even without cable gland

TONE TYPES AND FREQUENCIES:

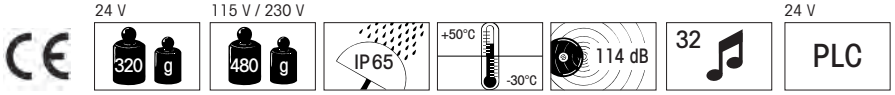
Selectable via DIP switch, see tone table on page 192.

ADDITIONAL INFORMATION:

*** EVS** = Enhanced Visibility System or Enhanced Visibility System.
Further informationen can be found in the chapter "Tech-Talk" beginning on page 326.

TECHNICAL DIAGRAMS:

see page 273



444 Combination

The 444 Combinations (Page 190 + 191) offer a large choice of international signal tones for the widest spectrum of applications. 3 tones can be triggered externally.

TONE TYPES AND FREQUENCIES:

Play Sound www.werma.com

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

LED Traffic Light / Siren Combination

LED Traffic Light with integrated siren (2 tier)

Integrated siren with high sound output

Clear lenses ensure signalling effect even in direct sunlight

- High visibility LED Traffic Light with independently triggerable integrated siren
- Award-winning design
- Unmistakable signalling even in direct sunlight thanks to clear lenses
- Sound output of 90 dB
- Simple mounting due to integrated mounting bracket
- The optical signal also offers very good sideway visibility
- NEW • Protection rating IP 65/IP 69k

Life duration up to 50,000 hrs

TECHNICAL SPECIFICATIONS:

Dimensions (L x H x W):	2 tier: 85 mm x 309 mm x 136 mm 3 tier: 85 mm x 394 mm x 136 mm
Housing:	PC/ABS, grey
Lens:	PC, transparent
Fixing:	Wall mounting, tube mounting (accessory)
Installation position:	Vertical/hanging
Connection:	Screw terminal with wire protection max. 1.5 mm²
Cable entry:	Cable diameter max. 13 mm
Duty cycle:	100 %
Tone type:	Continuous tone

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage		24 V ⎓	115 to 230 V ~
Current Consumption	LED	60 mA (red/yellow) 120 mA (green)	30 mA per tier at 230 V/50 Hz
	Siren	20 mA	30 mA at 230 V/50 Hz
red / green		**494 160 55**	**494 160 68**
red / yellow / green		**494 180 55**	**494 180 68**

ACCESSORIES:

NEW Adaptor for tube mounting **975 894 02**
(suitable for Ø 75 mm tubes, see page 194)

ADDITIONAL INFORMATION:

"Small Traffic Light Series" wins "iF product design award 2009"

WERMA has won the prestigious "iF product design award" for the design and production of its "small traffic light series". Since its introduction in 1953, this design prize has been an enduring, renowned hallmark for "excellent" design.

TECHNICAL DIAGRAMS:

see page 274

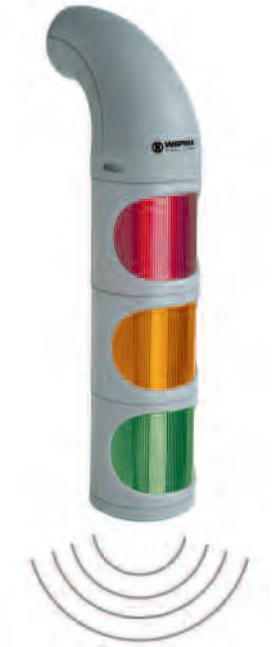
2 tier 3 tier

380 g | 410 g | IP65/IP69k | +50°C -30°C | 90 dB

LED Beacon / Siren Combination

product design award 2009

LED Beacon with integrated Siren (1 tier)



Integrated siren with high sound output

NEW The new adaptor (accessory) allows quick and simple mounting on tubes (Ø 75 mm)

- High visibility LED Traffic Light with independently triggerable integrated siren
- Colour intensive light effect thanks to LEDs in the same colour as the lenses
- Sound output of 90 dB
- Simple mounting due to integrated mounting bracket
- The optical signal also offers very good sideway visibility
- NEW Protection rating IP 65/IP 69k

TECHNICAL SPECIFICATIONS:

Life duration up to 50,000 hrs

Dimensions (L x H x W):	1 tier:	85 mm x 224 mm x 136 mm
	2 tier:	85 mm x 309 mm x 136 mm
	3 tier:	85 mm x 394 mm x 136 mm
Housing:	PC/ABS, grey	
Lens:	PC, transparent	
Fixing:	Wall mounting	
Installation position:	Vertical/hanging	
Connection:	Screw terminal with wire protection max. 1.5 mm²	
Cable entry:	Cable diameter max. 13 mm	
Duty cycle:	100 %	
Tone type:	Continuous tone	

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage		24 V ⎓	115 to 230 V ~
Current Consumption	LED	60 mA (red/yellow) 120 mA (green)	30 mA per tier at 230 V/50 Hz
	Siren	20 mA	30 mA at 230 V/50 Hz
red		**494 010 55**	**494 010 68**
green		**494 020 55**	**494 020 68**
yellow		**494 030 55**	**494 030 68**
red / green		**494 060 55**	**494 060 68**
red / yellow / green		**494 080 55**	**494 080 68**

ACCESSORIES:

NEW Adaptor for tube mounting (suitable for Ø 75 mm tubes)	**975 894 02**

ADDITIONAL INFORMATION:

Maximum flexibility

Thanks to the innovative bracket, the direction of the signal can be individually adjusted. After the bracket has been mounted, the customer can adjust the direction to suit his requirements.

The LED traffic light can be turned through 360 degrees guaranteeing optimum visibility from all angles.

The direction of the optical signal can be individually adjusted

TECHNICAL DIAGRAMS:

see page 274

1 tier 350 g | 2 tier 380 g | 3 tier 410 g | IP65/IP69K | +50°C -30°C | 90 dB

WERMA SIGNALTECHNIK

890/190

(LED) Beacon 890/Multi-Tone Sounder 190 Combination

Light intensive and loud traffic light combination

The fixing bracket can be mounted pointing inwards or outwards (accessory)

- 32 tones for a diverse range of applications
- Sound output adjustable up to 110 dB
- 3 tones can be triggered externally
- Fixing bracket for easy combination with (LED) Permanent Beacon/ Traffic Light 890

TECHNICAL SPECIFICATIONS:

Dimensions (Ø x Height):	150 mm x 154 mm (890) 150 mm x 127 mm (190)
Housing:	PC/ABS-Blend, grey
Lens:	PC, transparent
Fixing:	Base mounting, fixing bracket (accessory)
Connection:	Screw terminal
Cable entry:	From top or bottom with cable gland M 20 x 1.5 mm or from the back with rubber grommet Ø 6-12 mm, included in assembly
Tone types and frequencies:	Selectable via DIP switch, see table on page 229

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Multi-Tone Sounder 190			
Voltage	10-30 V ⎓	115 V ~	230 V ~
Current consumption	< 180 mA	< 55 mA	< 30 mA
grey	**190 000 55**	**190 000 67**	**190 000 68**
LED Beacon 890			
Voltage	12-24 V ⎓	115 V ~	230 V ~
Current consumption	< 200 mA	< 35 mA	< 35 mA
red	**890 120 55**	**890 120 67**	**890 120 68**
green	**890 220 55**	**890 220 67**	**890 220 68**
yellow	**890 320 55**	**890 320 67**	**890 220 68**

Permanent Beacon 890	
Voltage	12-240 V ≂
red	**890 100 00**
green	**890 200 00**
yellow	**890 300 00**
clear	**890 400 00**
blue	**890 500 00**

ACCESSORIES:

Fixing bracket, tube adaptor and connecting grommet see page 161.

TONE TYPES AND FREQUENCIES:

Selectable via DIP switch, see tone table on page 229.

TECHNICAL DIAGRAMS:

see page 269 + 291

CE IP65 +50°C -30°C 110 dB 32 PLC

150 LED/Buzzer Combination

- **LED Permanent light**
- **Continuous tone can be additionally activated**
- **Simple connection by means of connector plug**
- **Life duration up to 50,000 hrs**

Life duration up to 50,000 hrs

TECHNICAL 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 mm²
Tone type:	Continuous
Tone frequency:	c. 2.8 kHz
Duty cycle:	100 %
Life duration:	Up to 50,000 hrs (LED)
Fixing:	Installation mounting for Ø 22.5 mm (M 22 x 1.5 mm) with anti-twist device

Nut and seal included in assembly.

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	24 V ⎓	115 V ~	230 V ~
Current consumption	< 50 mA	< 20 mA	< 20 mA
red	**150 100 55**	**150 100 67**	**150 100 68**
yellow	**150 300 55**	**150 300 67**	**150 300 68**

TECHNICAL DIAGRAMS:

see page 268

24 V

c UL us CE PG 30 g IP65 +50°C -20°C 80 dB PLC

450

LED/Buzzer Combination with acknowledgement function

- LED permanent light with additional continuous tone
- Silence the audible signal by lightly pressing the frontal area
- Life duration up to 50,000 hrs
- Potential-free output for transmission of the acknowledgement signal to the control unit
- Positive and negative logic

TECHNICAL SPECIFICATIONS:

Life duration up to 50,000 hrs

Dimensions (Diameter x Height):	50 mm x 22 mm (Protrusion from panel)
Housing:	PC/ABS-Blend
Lens:	PC, transparent
Connection:	Screw terminal max. 0.5 mm²
Signal input:	24 V ⎓
Acknowledgement output:	Semiconductor-Relay U_{max} = 30 V I_{max} = 100 mA $R_{ON\ max}$ = 25 Ohm
Tone type:	Continuous
Tone frequency:	c. 2.8 kHz
Duty cycle:	100 %
Life duration:	Up to 50,000 hrs (LED)
Fixing:	Installation mounting for Ø 22,5 mm (M 22 x 1.5 mm) with anti-twist device

Nut and seal included in assembly.

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

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	24 V ⎓
Current consumption	40-80 mA
red	**450 100 55**
yellow	**450 300 55**

ADDITIONAL INFORMATION:

1

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

2

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

3

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 DIAGRAMS:

see page 273

450 LED/Buzzer Combination with acknowledgement function for AS-Interface

- **LED Permanent light with additional continuous tone**
- **Silence the audible signal by lightly pressing the frontal area**
- **Acknowledgement signal fed back to the Master via AS-Interface Bus**
- **Life duration up to 50,000 hrs**

Life duration up to 50,000 hrs

TECHNICAL SPECIFICATIONS:

Dimensions (Ø x Height):	50 mm x 22 mm (Protrusion from panel)
Housing:	PC, black
Lens:	PC, transparent
Connection:	Screw terminal with wire protection max. 1.5 mm²
Power supply AS-Interface:	Via bus conduction
Operating voltage:	25 V ... 31.6 V according to the AS-Interface specification
IO-Code:	B_{hex}
ID-Code:	A_{hex}
ID2-Code:	E_{hex}
Tone type:	Continuous
Tone frequency:	c. 2.8 kHz
Duty cycle:	100 %
Fixing:	Installation mounting for Ø 22.5 mm (M 22 x 1.5 mm) with anti-twist device

Nut and seal included in assembly.

ORDER SPECIFICATIONS:

Play Sound www.werma.com

Voltage	via AS-Interface
Current consumption	≤ 80 mA
red	**450 110 55**
yellow	**450 310 55**

ADDITIONAL INFORMATION:

Unique acknowledgement function with feedback signal via AS-Interface Bus

The addition of the LED/Buzzer Combination 450 with acknowledgement function expands WERMA's range of products with integrated AS-Interface®. The combination unites a very bright light signal with the powerful sound of a buzzer.

This product also features a unique acknowledgement function: by gently pressing the front surface of the product the audible signal can be turned off in a matter of seconds (see page 197). This acknowledgement signal is fed back to the master via the AS-Interface Bus and the malfunction is only indicated by means of the optical signal.

Expanded addressing and a sound output of 80 dB

The 450 Combination for AS-Interface enables an expanded addressing (A/B technology) of up to 62 modules. The power required is drawn from the Bus voltage.

TECHNICAL DIAGRAMS:

see page 273

Class 2

Approval No. 78701 | 35 g | IP65 | +50°C -20°C | 80 dB | PLC

975 Surface Housing for Combinations

Surface housing double

Surface housing single

- Various combinations possible
- High protection rating IP 65
- Versatile range of applications thanks to cable exit at side

TECHNICAL SPECIFICATIONS:

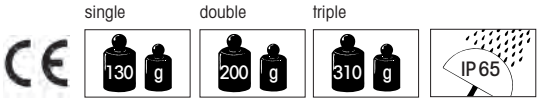
Dimensions (W x H x D):	single:	80.5 mm x 55 mm x 82 mm
	double:	160 mm x 55 mm x 78 mm
	triple:	240 mm x 60 mm x 80 mm
Housing:	ABS and PC/ABS-Blend	
Cable entry:	Cable gland M 16 x 1.5 mm for circular cable Ø 5-10 mm	

ORDER SPECIFICATIONS:

Single surface housing	**975 109 02**
Double surface housing for 1 beacon und 1 audible element	**975 109 03**
Triple surface housing for 2 beacons und 1 audible element	**975 109 04**

Assembly comprises of only the surface housing. Beacons 800-802, 815-817 (p. 92/94) and audible elements 109 and 110 (pages 205/206) have to be ordered additionally.

TECHNICAL DIAGRAMS: see page 295



Signal Tower with Audible Element

- Signal Tower Kombi*SIGN* with audible signal device
- Sound output up to 105 dB
- Can be combined with all optical elements
- Can be triggered separately

TECHNICAL SPECIFICATIONS:

Dimensions (Ø x Height):	See Kombi*SIGN* 50, 70 and 71	
Housing:	Polyamid, high-impact, black	
Lens:	Polycarbonate transparent	
Fixing:	Base mounting, bracket mounting, tube mounting	
Socket:	Bayonet, B15d for bulb max. 7 Watt	
Connection:	Screw terminal M3	
Seal:	Pre-mounted with each element	
Number of modules possible:	Kombi*SIGN* 70 and 71:	max. 5
	With 2-sided bracket:	max. 10
	Kombi*SIGN* 50:	max. 4
	The audible element is to be mounted at the top of the signal tower.	

ORDER SPECIFICATIONS: see Kombi*SIGN* 50, 70 and 71 (P. 54 + 36 + 16 onwards)

TECHNICAL DIAGRAMS: see Pages 286 + 285 + 277