

# PATROL RADIAL SOUNDER/LED COMBI 105 dB(A) PA L 1-R



- Selectable colour (RGB version only) - One device for all colours - keep your stock to a minimum!
- Selectable visual signaling modes - Flashlight / Blinking light / Continuous light / Rotating light.
- Selectable blink & flash frequencies - Fits all applications and increases visibility.
- Top mounted installation - Outstanding 360° perceptibility - ideal as a stand-alone solution on the top of the equipment or machine.
- Multi-voltage power supply - One fits all - for operation with different voltages.
- Selectable tones - Choice out of 70 tones in 32 tone combinations. 4 tones externally selectable.
- Reducible volume - Adjustment of the sound pressure level to the application.
- Excellent perceptibility - Meets the requirements of ISO7731.
- M12 connection (optional) - Take advantage of the M12 connector.



multi colour LED (option)



protection system



impact-proof housing



operating temperature



warranty



volume control



connector (option)



UL approval (pending)



radial acoustic



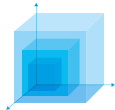
protection system



EurAsien Conformity (pending)

## TOP MOUNTED. HORIZONTAL DIRECTION. DIN-TONE

### 3D-COVERAGE PERFORMANCE DATA



### PA L 1-R

VISUAL	Indicate	25.7 x 22.1 x 30.6 m	AUDIBLE	75 dB (A)	22.3 x 13.3 x 17.2 m
	Warn	11.4 x 9.8 x 13.6 m		80 dB (A)	12.6 x 7.5 x 9.6 m
	Alarm	5.7 x 4.9 x 6.8 m		85 dB (A)	7.1 x 4.2 x 5.4 m

To determine the exact signalling area for your needs, please use the online available Pfannenberg Sizing Software PSS.

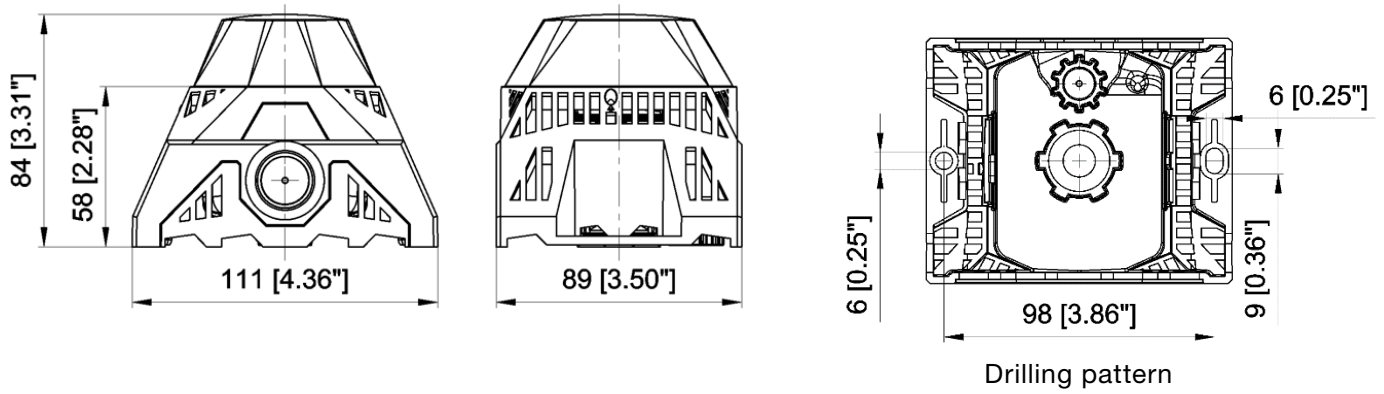
## PRODUCT

## PA L 1-R

### DATA

Rated voltage	12-48 V DC	115 / 230 V AC	24 / 48 V AC
Operating range	10-60 V	95-253 V	18-53 V
	-	50   60 Hz	
Nominal current consumption @DIN-Ton	54 mA @ 24 V DC	21 mA @ 230 V AC	83 mA @ 24 V AC
Nominal current consumption Light	206 mA @24 V DC	69 mA @24 V AC	210 mA @24 V AC
Sound pressure level	105 dB(A)		
Sound pressure level @DIN-Ton	105 dB(A)		
Sound level reduction	-7 dB / -13 dB / -20 dB		
Alarm tones	70 / 4 ext. selectable		
Operating mode internally and externally selectable	Flashlight (1 Hz, 2 Hz, 1 Hz double flash), Blinking light (0,5 Hz, 1 Hz, 2 Hz), Continuous light, Rotating light (60 rpm, 180 rpm)		
Color mode internally and externally selectable (RGB only)			
Light source / intensity (clear)	LED / 16 cd		
Max. viewing distance	93m		
Operating temperature	-25 °C ... +50 °C		
Storage temperature	-25 °C ... +70 °C		
Degree of protection	IP66 (EN 60529), NEMA 4/4X, IK 07 (EN 50102)		
Material	lens	polycarbonate (PC)	
	housing	PC / ABS blend	
Cable entry	1x M20 knock-out, 1x 10mm knock-out		
Connecting terminals	0.14 – 1.5 mm <sup>2</sup> (single-wire)		
Weight	220 g		

**DIMENSIONS**





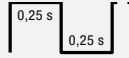







ORDERING DETAILS		PA L 1-R	
HOUSING COLOUR	LIGHT / LENS COLOUR	10-60 V DC	95-253 V AC
●	●	23383633055	23383643055
●	●	23383634055	23383644055
●	●	23383635055	23383645055
●	● / ●	23383638055	23383648055

Article numbers for other colours and voltages on request.

OPTIONS/ACCESSORIES	
Replacement gasket	28912000001

# PRODUCTS COMBINED VISUAL-AUDIBLE SIGNALING DEVICES

TONE TABLE			
NO.	DESCRIPTION		
1	no tone		
2	Sawtooth, DIN tone 33404-3 Germany (emergency signal), PFEER PTAP	1200 Hz 500 Hz 1 s EN 54-3	
9	Slow whoop, fire alarm, UK BS5839-1	970 Hz 800 Hz 1 s	
11	Interrupted tone (fast)	970 Hz 800 Hz 20 ms	
13	Interrupted tone	900 Hz 700 Hz 0,3 s 0,6 s	
15	Slow whoop, evacuation alarm Netherlands NEN 2575	1200 Hz 500 Hz 3,5 s 0,5 s EN 54-3	
16	Slow whoop, evacuation alarm Australia AS2220	1200 Hz 500 Hz 3,75 s 0,25 s	
18	Slow whoop, NFPA	775 Hz 422 Hz 0,85 s 1 s	
22	Pulsating tone, Australien alert AS1670, ISO8201	1200 Hz 500 Hz 0,5 s 0,5 s 1,5 s	
23	Siren	2400 Hz 500 Hz 3 s const.	
24	Siren	1200 Hz 300 Hz 3 s const.	
25	Siren	800 Hz 300 Hz 3 s const.	
26	Siren, industrial alarm Germany	1000 Hz 150 Hz 10 s 40 s 10 s	
27	Sweeping	2900 Hz 2400 Hz 0,5 s	
29	Sweeping (fast)	2900 Hz 2400 Hz 10 ms	
30	Sweeping	2900 Hz 2400 Hz 70 ms	
31	Sweeping, France NFC48-265	1600 Hz 1400 Hz 1 s 0,5 s	
33	Sweeping (medium), UK BS5839-1	1000 Hz 800 Hz 0,5 s 0,5 s	
34	Sweeping (fast)	1000 Hz 800 Hz 10 ms 10 ms	
35	Sweeping (fast), UK BS5839-1	1000 Hz 800 Hz 70 ms 70 ms	
36	Sweeping	1500 Hz 700 Hz 1,5 s 1,5 s	
43	Sweeping	1200 Hz 500 Hz 1,5 s 1,5 s	
44	Sweeping, IMO 3d, Germany KTA3901 evacuation alarm	1200 Hz 500 Hz 1 s 1 s	
46	Sweeping, general alarm Finland	1500 Hz 500 Hz 7 s	
52	Continuous tone	2400 Hz	
54	Continuous tone, Finland (all-clear signal)	1500 Hz	
55	Continuous tone, PFEER gas alarm	1200 Hz	
56	Continuous tone	1000 Hz	
57	Continuous tone, UK BS5839-1	950 Hz	
59	Continuous tone	880 Hz	
60	Continuous tone	825 Hz	EN 54-3
61	Continuous tone	800 Hz	
63	Continuous tone	725 Hz	
65	Continuous tone, Sweden SS031711 (all-clear signal)	660 Hz	
66	Continuous tone	554 Hz	
67	Continuous tone, Germany KTA3901 (all-clear signal)	500 Hz	
68	Continuous tone	470 Hz	
69	Continuous tone	440 Hz	
71	Continuous tone	340 Hz	
77	Interrupted tone	2200 Hz 0,5 s 0,5 s	
82	Interrupted tone, PFEER (general alarm), UK BS5839-1 (back-up alarm)	1000 Hz 0,5 s 0,5 s	
83	Interrupted tone, PFEER (general alarm)	1000 Hz 1 s 1 s	
88	Interrupted tone	950 Hz 1 s 1 s	
90	Interrupted tone	825 Hz 0,5 s 0,5 s	
91	Interrupted tone	800 Hz 0,25 s 0,25 s	
92	Interrupted tone	800 Hz 0,25 s 1 s	
93	Interrupted tone (fast), Horn	800 Hz 4 ms 4 ms	
100	Interrupted tone, industrial alarm Germany	680 Hz 0,875 s 0,875 s	
101	Interrupted tone, Sweden SS031711 (important message (pre-mess))	660 Hz 6,5 s 13 s	
102	Interrupted tone, Sweden SS031711 (local warning)	660 Hz 0,5 s 0,5 s	
103	Interrupted tone, Sweden SS031711 (air raid warning)	660 Hz 1,8 s 1,8 s	
104	Interrupted tone, Sweden SS031711 (emergency signal)	660 Hz 150 ms 150 ms EN 54-3	
107	Interrupted tone, Germany KTA3901 (evacuation alarm)	500 Hz 0,25 s 0,75 s	
109	Interrupted tone, Australia AS2220, AS1610, AS1670	420 Hz 0,625 s 0,625 s	
111	Interrupted tone, ISO8201 (emergency evacuation signal), USA (evacuation alarm)	470 Hz 0,5 s 0,5 s 1,5 s	
112	Interrupted tone, ISO8201 (emergency evacuation signal)	950 Hz 0,5 s 0,5 s 1,5 s	
122	Alternating tone	2900 Hz 2400 Hz 0,5 s 0,5 s	
123	Alternating tone	2900 Hz 2400 Hz 0,25 s 0,25 s	
124	Alternating tone, Singapore	2900 Hz 1000 Hz 0,5 s 0,5 s	
125	Alternating tone	1400 Hz 1200 Hz 20 ms 20 ms	
128	Alternating tone	1025 Hz 825 Hz 0,25 s 0,25 s	

TONE TABLE							
NO.	DESCRIPTION			NR.	BESCHREIBUNG		
130	Alternating tone, UK BS5839-1 (fire alarm)	1000 Hz 800 Hz		160	Continuous tone	110 Hz	
131	Alternating tone, UK BS5839-1 (fire alarm, railway crossing)	1000 Hz 800 Hz		161	Continuous tone	300 Hz	
143	Alternating tone, industrial alarm Germany	660 Hz 440 Hz		162	Interrupted tone	300 Hz	
146	Alternating tone, France NFS 32-001 (fire alarm)	554 Hz 440 Hz		163	Interrupted tone	300 Hz	
147	Alternating tone, Sweden SS031711	554 Hz 440 Hz		164	Slow whoop	2850 Hz 2400 Hz	

## CONFORMITY TO STANDARDS

The acoustic parameters conform to the European standard DIN EN ISO 7731: **“Ergonomic – alarms for public areas and workplaces – acoustic alarms“**.

The requirement for an acoustic alarm signal can be found in the harmonised standards:  
 EN 60204-1 Electrical equipment of machines  
 EN 60825-1 Radiation safety of laser devices, identical to IEC 825 and DIN-VDE 0837

The visual characteristics of LED lights conform to the European standard DIN EN 842; **“Machine safety – visual alarm signals”**. Requirements contained in the DIN EN 981 standard; **“Machine safety – system of acoustic and visual alarm and information signals”**, can be fulfilled.

The colours “red” for the emergency signal and “yellow” for the warning signal conform to the requirements of IEC 73 / DIN EN 60073 / VDE 0199; **“Coding of display devices and control elements using colours and supplementary means”**.

References to visual alarm devices can be found in the following standards:  
 EN 60825-1 Radiation safety of laser devices, identical to IEC 825 and DIN-VDE 0837  
 DIN EN 54 Fire alarm systems  
 DIN 54113-2 Radiation protection regulations for the technical operation of X-ray equipment up to 500 kV