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.

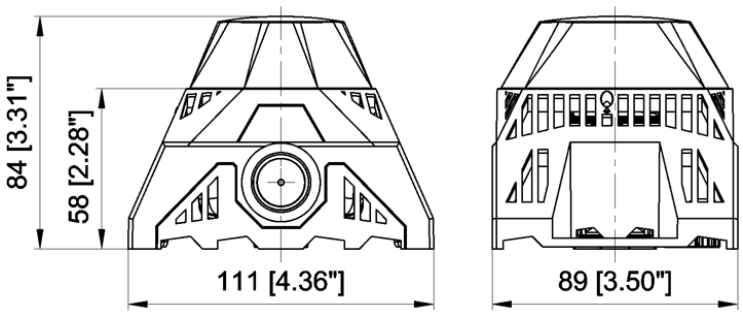
RGB	IP 66	IK07	+50 °C / –25 °C	10 Years		M12	UL		NEMA 4/4X	EAC
multi colour LED (option)	protection system	impact-proof housing	operating temperature	warranty	volume control	connector (option)	UL approval (pending)	radial acoustic	protection system	EurAsien Conformity (pending)

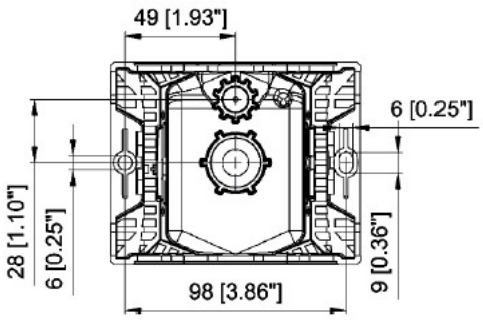
TOP MOUNTED. HORIZONTAL DIRECTION. DIN-TONE					
3D-COVERAGE PERFORMANCE DATA	PA L 1-R				
	VISUAL	Indicate	25.7 x 22.1 x 30.6 m	AUDIBLE	75 dB (A)	53 x 32 x 13 m
		Warn	11.4 x 9.8 x 13.6 m		80 dB (A)	30 x 18 x 8 m
		Alarm	5.7 x 4.9 x 6.8 m		85 dB (A)	17 x 10 x 4 m

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 I 60 Hz	
Nominal current consumption @DIN-Ton	56 mA @ 24 V DC	19 mA @ 230 V AC	83 mA @ 24 V AC
Nominal current consump. Light (max.)	160 mA @ 24 V DC	45 mA @ 230 V AC	260 mA @ 24 V AC
Sound pressure level	105 dB(A)		
Sound pressure level @DIN-Ton	105 dB(A)		
Sound level reducion	-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)		
Material housing	PC / ABS blend		
Cable entry	1x M20 knock-out, 1x 10mm knock-out		
Connecting terminals	0.14 – 1.5 mm² (single-wire)		
Weight	220 g		

DIMENSIONS





Drilling pattern

ORDERING DETAILS		PA L 1-R	
HOUSING COLOUR	LIGHT / LENS COLOUR	10-60 V DC / 18-53 V AC	95-253 V AC
		23383633055	23383643055
		23383634055	23383644055
		23383635055	23383645055
	/	23383638055	23383648055

Article numbers for other colours and voltages on request.

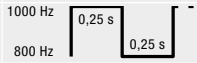
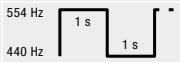
OPTIONS/ACCESSORIES	
Replacement gasket	28912000001

SIGNALING TECHNOLOGY

TONE TABLE

NO.	DESCRIPTION
1	no tone
2	Sawtooth, DIN tone 33404-3 Germany (emergency signal), PFEER PTAP
9	Slow whoop, fire alarm, UK BS5839-1
11	Interrupted tone (fast)
13	Interrupted tone
15	Slow whoop, evacuation alarm Netherlands NEN 2575
16	Slow whoop, evacuation alarm Australia AS2220
18	Slow whoop, NFPA
22	Pulsating tone, Australien alert AS1670, ISO8201
23	Siren
24	Siren
25	Siren
26	Siren, industrial alarm Germany
27	Sweeping
29	Sweeping (fast)
30	Sweeping
31	Sweeping, France NFC48-265
33	Sweeping (medium), UK BS5839-1
34	Sweeping (fast)
35	Sweeping (fast), UK BS5839-1
36	Sweeping
43	Sweeping
44	Sweeping, IMO 3d, Germany KTA3901 evacuation alarm
46	Sweeping, general alarm Finland
52	Continuous tone
54	Continuous tone, Finland (all-clear signal)
55	Continuous tone, PFEER gas alarm
56	Continuous tone
57	Continuous tone, UK BS5839-1
59	Continuous tone
60	Continuous tone
61	Continuous tone
63	Continuous tone
65	Continuous tone, Sweden SS031711 (all-clear signal)
66	Continuous tone
67	Continuous tone, Germany KTA3901 (all-clear signal)
68	Continuous tone
69	Continuous tone
71	Continuous tone
77	Interrupted tone
82	Interrupted tone, PFEER (general alarm), UK BS5839-1 (back-up alarm)
83	Interrupted tone, PFEER (general alarm)
88	Interrupted tone
90	Interrupted tone
91	Interrupted tone
92	Interrupted tone
93	Interrupted tone (fast), Horn
100	Interrupted tone, industrial alarm Germany
101	Interrupted tone, Sweden SS031711 (important message (pre-mess))
102	Interrupted tone, Sweden SS031711 (local warning)
103	Interrupted tone, Sweden SS031711 (air raid warning)
104	Interrupted tone, Sweden SS031711 (emergency signal)
107	Interrupted tone, Germany KTA3901 (evacuation alarm)
109	Interrupted tone, Australia AS2220, AS1610, AS1670
111	Interrupted tone, ISO8201 (emergency evacuation signal), USA (evacuation alarm)
112	Interrupted tone, ISO8201 (emergency evacuation signal)
122	Alternating tone
123	Alternating tone
124	Alternating tone, Singapore
125	Alternating tone
128	Alternating tone

TONE TABLE

NO.	DESCRIPTION		NR.	BESCHREIBUNG	
130	Alternating tone, UK BS5839-1 (fire alarm)		160	Continuous tone	
131	Alternating tone, UK BS5839-1 (fire alarm, railway crossing)		161	Continuous tone	
143	Alternating tone, industrial alarm Germany		162	Interrupted tone	
146	Alternating tone, France NFS 32-001 (fire alarm)		163	Interrupted tone	
147	Alternating tone, Sweden SS031711		164	Slow whoop	

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