

Acoustic Components

BOOM MICROPHONES AND SENSORS

W Series



- Designed for customers who are looking for small footprint and lightweight platform with waterproofing to 1m (based on IP67 rating)
- Plastic head design with metal flexible boom
 - Available in 4.2mm down to 2.7mm diameter metal flexible boom
- Security, Police, Fire dispatchers and other lightweight communication headsets
 - SWAT, SRT, HRT, Bike Patrol, Motorcycle Patrol, Mounted and Marine Patrol, K9 Officer
- Designed for the NR and WP elements, but can also accommodate EK and EA series

Model	*Rating	Microphone Element	Directivity	Boom Length Tip-To-Tip (mm)	Exit Wire Length (mm)	Nominal Boom Diameter (mm)	Microphone Configuration
FB-DW-30294-000	3m	WP-25993-D63 †	Noise Canceling	140	60	4.2	2-WIRE
FB-BW-30335-000	3m	WP-25993-D63 †	Noise Canceling	160	60	2.7	2-WIRE
FB-DW-30296-000	3m	WP-25993-000 †	Noise Canceling	140	60	4.2	3-WIRE
FB-DW-30293-000	IP54 †	NR-25994-D63	Noise Canceling	140	60	4.2	2-WIRE
FB-BW-30330-000	IP54 †	NR-25994-D63	Noise Canceling	160	60	2.7	2-WIRE
FB-DW-30295-000	IP54 †	NR-25994-000	Noise Canceling	140	60	4.2	3-WIRE

*Rating done to IP67 test criteria † WP-Series elements are waterproof ‡ Splashproof meeting IP54 test criteria

U Series



- Designed for Pro-Audio customers who are looking for a micro boom headset that emphasizes the noise canceling & Uni electret element in a metal EMI shielded housing
 - Available in Noise Canceling, Uni and Omni Directional
 - Waterproof options down to 3m using VFG elements
- Metal head design with metal bendable and metal flexible booms
 - Available in 2.8mm down to 1.0mm diameter metal flexible booms
- News anchors, professors, professional lecturers, aerobic instructors other communication headsets
 - Designed for small over the ear, wrap around the head designs for professional speakers
- Designed for the FG, VFG and DFG elements series

Model	*Rating	Microphone Element	Directivity	Boom Length Tip-To-Tip (mm)	Exit Wire Length (mm)	Nominal Boom Diameter (mm)	Microphone Configuration
FB-MU-30749-000	IP54 †	DFG-30445-000	Super Cardioid Uni-directional	115	18	1.0	2-WIRE
FB-MU-31024-000	IP54 †	DFG-30851-000	Noise Canceling	115	18	1.0	2-WIRE
FB-MU-31025-000	3m	VFG-30747-000 †	Omni-directional	115	18	1.0	3-WIRE
FB-AU-31214-000	IP54 †	DFG-30851-000	Noise Canceling	140	18	2.4	2-WIRE
FB-BU-31193-000	IP54 †	DFG-30851-001	Noise Canceling	115	18	2.8	2-WIRE

*Rating done to IP67 test criteria † Splashproof meeting IP54 test criteria

I Series



- Designed for customers who are looking for a noise canceling non-power element in robust platform with waterproofing options from 1m down to 10m (based on IP67 rating)
 - Also available in Omni Directional
 - Meets MIL-STD-810 standards
- Plastic head design with metal flexible boom
 - Available in 5.9mm down to 4.2mm diameter metal flexible boom
- Military forces, Special Operations, Security and Police and other military communication headsets
 - Mounted and unmounted ground forces, armor units
- Designed for the BJ series elements

Model	*Rating	Microphone Element	Directivity	Boom Length Tip-To-Tip (mm)	Exit Wire Length (mm)	Nominal Boom Diameter (mm)	Microphone Configuration
FB-EI-30026-000	1m	BJ-28471-000 (150Ω Impedance)	Noise Canceling	212	140	5.4	2-WIRE
FB-EI-30426-000	1m	BJ-28486-000 (30Ω Impedance)	Noise Canceling	212	140	5.4	2-WIRE
FB-FI-30484-000	10m	BJ-28471-000 (15Ω Impedance)	Noise Canceling	212	140	6.0	2-WIRE

*Rating done to IP67 test criteria

O Series



- Designed for customers who are looking for a noise canceling electret element in a metal EMI shielded housing
 - Available in Omni-directional
 - Waterproof options down to 3m using WP elements
- Metal head design with metal flexible boom
 - Available in 8.0mm down to 4.2mm diameter metal flexible boom
- Military forces, Special Operations, Security, Fire and Police and other communication headsets
 - Over the ear, earcup or helmet designs for mounted and non-mounted ground forces
- Designed for the EK, NR and WP elements series

Model	*Rating	Microphone Element	Directivity	Boom Length Tip-To-Tip (mm)	Exit Wire Length (mm)	Nominal Boom Diameter (mm)	Microphone Configuration
FB-DO-23511-000	3m	WP-23500-000 †	Noise Canceling	161	150	4.2	3-WIRE w/shield
FB-DO-25946-000	3m	WP-23501-000 †	Noise Canceling	74	30	4.2	2-WIRE
FB-HO-25624-000	3m	WP-23500-000 †	Noise Canceling	163	106	5.0	3-WIRE
FB-FO-25581-000	IP54 †	EK-23024-000	Omni-directional	140	140	5.9	3-WIRE w/shield and M6 connector
FB-FO-23225-000	IP54 †	NR-23160-000	Noise Canceling	164	150	5.9	2-WIRE w/shield and M6 connector

*Rating done to IP67 test criteria

† WP-Series elements are waterproof

‡ Splashproof meeting IP54 test criteria

M Series



- Designed for customers who are looking for a noise canceling electret element in robust waterproof housing
 - Available in Omni Directional
 - Waterproof options from 1m down to 20m (per IP67, IP68 and MIL-STD-810)
- Plastic head design with metal flexible boom
 - Available in 6.0mm down to 2.7mm diameter metal flexible boom
- Military forces, Special Operations, Security, Fire and Police and other high end communication headsets
 - Over the ear, earcup or helmet designs for mounted and non-mounted ground forces
- Designed for EK, NR and WP series elements

Model	*Rating	Microphone Element	Directivity	Boom Length Tip-To-Tip (mm)	Exit Wire Length (mm)	Nominal Boom Diameter (mm)	Microphone Configuration
FB-EM-30342-000	1m	NR-25994-D63	Noise Canceling	190	60	5.4	2-WIRE
FB-EM-30343-000	3m	WP-25993-D63 †	Noise Canceling	190	60	5.4	2-WIRE
FB-EM-30344-000	10m	NR-25994-D63	Noise Canceling	190	60	5.4	2-WIRE
FB-EM-30345-000	20m	NR-25994-D63	Noise Canceling	190	60	5.4	2-WIRE
FB-EM-30346-000	1m	EK-23132-C36	Omni-directional	190	60	5.4	3-WIRE
FB-EM-30348-000	10m	EK-23132-C36	Omni-directional	190	60	5.4	3-WIRE
FB-EM-30349-000	20m	EK-23132-C36	Omni-directional	190	60	5.4	3-WIRE

*Rating done to IP67 test criteria † WP-Series elements are waterproof

R Series

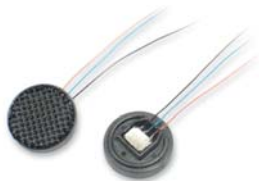


- Designed for aviation customers who are looking for a TSO/RCTA compatible noise canceling electret element in robust waterproof housing
 - Available in amplified noise canceling to meet the RCTA D0-214 & D0-160C
 - Waterproof options from splash proof to 3m (per IP54, IP67 & MIL-STD-810)
- Conductive plastic head design with metal flexible boom
 - Available in 6.0mm down to 2.7mm diameter metal flexible boom
- Commercial and Civilian Pilots, Military forces, Special Operations, Fire & Police and other high end COM headsets
- Designed for the NR, WP & EK elements series

Model	*Rating	Microphone Element	Directivity	Boom Length Tip-To-Tip (mm)	Exit Wire Length (mm)	Nominal Boom Diameter (mm)	Microphone Configuration
FB-DR-30366-000	1m	NR-60367-000	Noise Canceling	165	150	4.2	2-WIRE
FB-KR-30713-000	1m	NR-60367-000	Noise Canceling	130	150	4.2	2-WIRE

*Rating done to IP67 test criteria

F Series



- *Designed for ruggedized panel mounted applications for outdoor microphone and sensor applications*
 - Available in Omni Directional
 - Waterproof options from 1m down to 20m (per IP67, IP68 and MIL-STD-810)
- *Police and Military forces, Special Operations, personalized shot detection systems*
 - Sensor arrays for vibration acoustic signatures and triangulation systems
- *Designed for the EK, NR and WP elements series*

Model	*Rating	Microphone Element	Directivity	Exit Wire Length (mm)	Sensor Diameter (mm)	Microphone Configuration
VEK-F-30350-000	1m	EK-23132-C36	Omni-directional	200	16	3-WIRE
VEK-F-30351-000	10m	EK-23132-C36	Omni-directional	200	16	3-WIRE
VEK-F-30352-000	20m	EK-23132-C36	Omni-directional	200	16	3-WIRE
VEK-F-30460-000	1m	EK-23132-C36	Omni-directional	10	16	3-WIRE
VEK-F-30300-000	20m	EK-23132-C36	Omni-directional	8	16	3-WIRE
VEK-F-30470-000	1m	EK-26899-P58	Omni-directional	174 (Shielded)	16	3-WIRE
VWP-F-30609-000	3m	WP-30113-000 †	Omni-directional	100	16	4-WIRE
VWP-F-31161-000	3m	WP-30113-000 †	Omni-directional	200	16	3-WIRE

*Rating done to IP67 test criteria † WP-Series elements are waterproof

H Series



- *Designed for ruggedized fixed position and mounted applications for outdoor sensor arrays for vibration, acoustic signatures and triangulation systems*
 - Available in Omni Directional
 - Waterproof options from 1m down to 20m (per IP67, IP68 and MIL-STD-810)
- *Conductive plastic housing designed to pass MIL-STD-810F EMI shielding housing with shielded cable assembly*
 - Available with extra high SPL circuit design
 - Custom PCBA options available within the housing cavity
- *Military, homeland security, border patrol, Police and local municipality applications*
 - Electronic fence, ground sensor / vibration sensor technology, human, light and heavy armored vehicle, helicopter sensors
- *Designed for EK, NR, GH and WP series elements*

Model	*Rating	Microphone Element	Directivity	Sensor Length (mm)	Sensor Diameter (mm)	Exit Wire Length (mm)	Microphone Configuration
VWP-H-30109-000	3m	WP-30113-P03 †	Omni-directional	21	12.7	211	3-WIRE
VEK-H-30320-000	1m	EK-30436-P03	Omni-directional	21	12.7	211	3-WIRE
VEK-H-30108-000	1m	EK-26899-P03	Omni-directional	21	12.7	211	3-WIRE

*Rating done to IP67 test criteria † WP-Series elements are waterproof

Elements

Series		Size (mm)	Directivity	Port Location	Sensitivity @ 1kHz	Input-Referred Noise Level (typical)
FG		2.59 dia. x 2.59	Omni	Front	-53dB	27dB
DFG		2.59 dia. x 2.59	Noise Canceling Uni	Front Side	-69dB -71dB -73dB	N/A
VFG		3.00 dia. x 3.50	Omni	Front	-55dB	28dB
EM		3.61 x 3.61 x 2.21	Omni	Front	-52dB	24.5dB
NR		4.00 x 5.59 x 2.28	Noise Canceling	Front Top/Bottom	-52dB	N/A
EA		5.56 x 3.98 x 2.21	Omni	Front Top/Bottom	-59dB	25dB
EK/EL		5.56 x 3.98 x 2.21	Omni (EK) Uni (EL)	Front Top/Bottom	-53dB -52dB	24dB N/A
BJ		7.87 x 5.59 x 4.01	Omni Noise Canceling	Front Top/Bottom	-75dB	0
WP		4.00 x 5.59 x 2.28	Omni Noise Canceling	Top/Bottom Top/Bottom	-53dB -54dB	24dB N/A

Options

Bulkhead / Boom End Connectors

- 4mm & 6mm with washers and Teflon threaded lock nuts
- Soldered on housing capture / anchors for mechanical design and/or boom over molding

Cable Assemblies

- Ultra thin 36 AWG "Litz" cable (multiple color configurations available)
- Standard hook up wire 28 to 34 AWG (multiple color configurations available)
- RFI / EMI shielded in 2 and 3 conductor + shield configurations (UL-758) 26 to 32 AWG
- Custom electrical end terminations / connectors (male and female configurations)

Upgrades

- Moisture resistant wind shields / screens (treated)
- Custom Logo Marking options
- Up-graded Flexible Metal Gooseneck Material

Additional custom design options are available. Please contact your local sales representative for further information.

Booms

FB-F I -30026-000



1
Product Description
FB: Flexible Boom

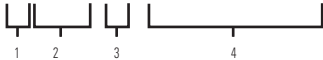
2
Boom Diameter
A: 2.3mm OD Positionable Cable
B: 2.7mm OD Gooseneck (w/shrink tube)
D: 4.2mm OD Gooseneck (w/shrink tube)
E: 5.4mm OD Gooseneck (w/shrink tube)
F: 5.9mm OD Gooseneck (w/shrink tube)
H: 5.0mm OD Gooseneck (w/shrink tube)
M: 1.0mm OD Positionable Tube

3
Head Series
I: BJ Housing
M: NR/WP Waterproof Housing
O: Original Housing
R: Conductive Plastic Housing
U: FG/DFG Micro Housing
W: Plastic Housing w/ Sinter Disc

4
Model #
Knowles Internal
Reference Only

Sensors

VWP-F-30109-000



1
Product Description
V: Value Added

2
Element Series
EK, EA, WP

3
Housing Series
B: Over Molded
C: Custom Design
F: Plastic Fixed Housing
H: Conductive Plastic Housing

4
Model #
Knowles Internal
Reference Only



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