INCH-POUND

MIL-PRF-87819/4A
30 September 2009
SUPERSEDING
MIL-PRF-87819/4(USAF)
30 January 1997

PERFORMANCE SPECIFICATION SHEET

HEADSET-MICROPHONE, HEARING PROTECTIVE TYPE MODERATE AMBIENT NOISE LEVELS, UP TO 105 dB, INFLIGHT AIRCREW HEADSET-MICROPHONE, M87819/4-01

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-PRF-87819.

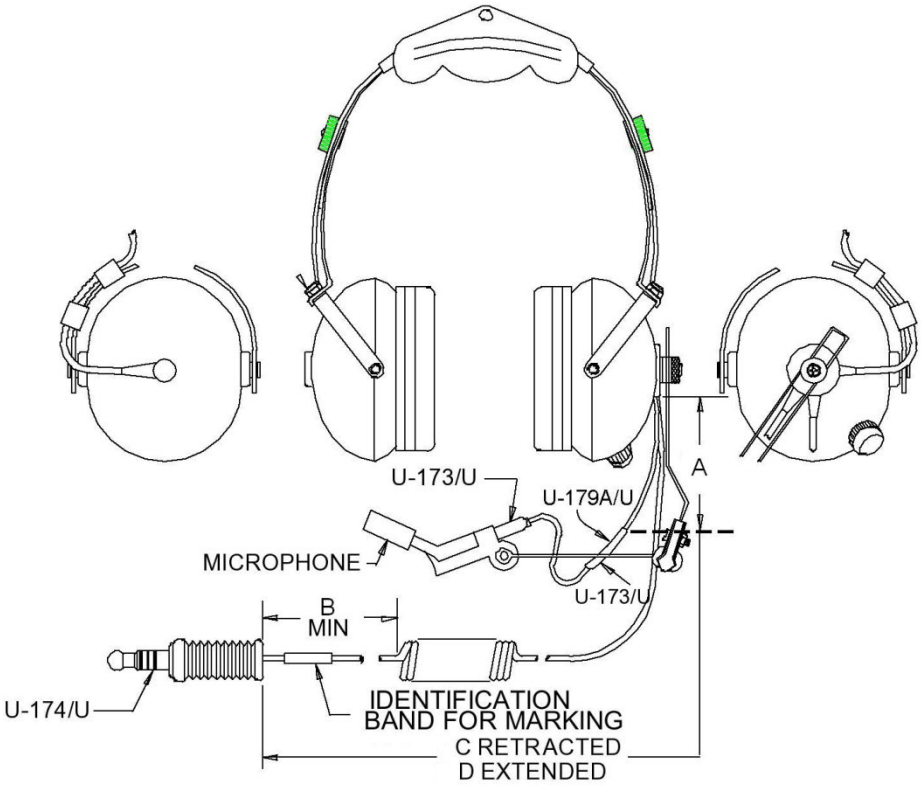

FIGURE 1. Headset-microphone M87819/4-01, typical configuration.

Letter	Inches		mm	
	Design dimension	Tolerances	Design dimension	Tolerances
A	1.500	+ 1.0 – 0.00	38.1	+ 25.4 – 0.0
B	4.00	Minimum	101.6	Minimum
C (Retracted)	19.0	± 4.0	482.6	± 101.6
D (Extended)	60.0	Minimum	1,524.0	Minimum

NOTES:

1. The “A” cord, and Part or Identifying Number (PIN) U-179A/U plug, shall provide interface to emergency oxygen mask connectors.
2. Cord “C/D” shall have the retracted and extended lengths shown, for movement around the console.
3. Cord “C/D” shall include a 4.00 inch (101.6 mm) section “B”, shown as a grasping location during removal from the console.
4. Dimensions are in inches. Unless otherwise specified, tolerance is ± 0.015 inch. Metric equivalents are given for information only.

FIGURE 1. Headset-microphone M87819/4-01, typical configuration – Continued.

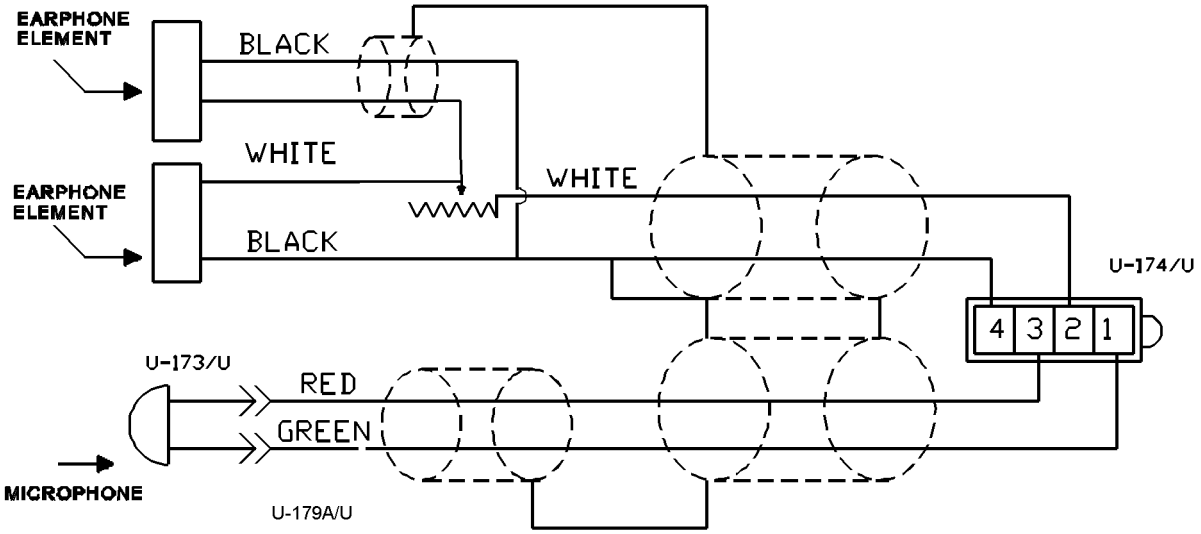

FIGURE 2. Wiring diagram.

REQUIREMENTS:

Design and construction:

Dimensions and configuration: See figure 1.

Headband pressure: Headband pressure shall be sufficient to meet the noise attenuation requirements of this specification, without compromising comfort, not to exceed 3.5 pounds.

Microphone assembly: Microphone shall be PIN M-87/AIC, as specified in MIL-PRF-26542/2 (1 required), or electrically compatible, light-weight microphone element with equivalent or superior noise-canceling, environmental, altitude and ground-level, and shock (drop) performance, as approved by the qualifying activity.

Boom: If the boom is supplied separately, it shall provide equivalent mechanical interface to the microphone element, as well as equivalent or superior adjustability (fine and coarse), durability of finish, stability of operation, and high-strength, rust-resistant material performance.

Earphone element: Earphone element shall be PIN H-143/AIC, as specified in MIL-PRF-25670/2 (2 required), or electrically compatible part having equivalent or superior noise-canceling, environmental and frequency response at ground level and altitude, meeting United States Air Force hazardous noise exposure standards, as approved by the qualifying activity.

Volume control: Volume control shall be a 100-ohm, non-switched, variable resistor, having a slotted shaft to accept the control knob as specified below. It shall be electrically compatible with PIN RV6NAYSA101A, for interface with flight console electronics.

Control knob: The volume control knob shall be easily adjustable and replaceable. It shall have a low profile which does not interfere with the headband yoke, not to exceed 0.438 inch (12.3 mm) in height and 0.813 inch (20.7 mm).

Wiring diagram: Wiring diagram shall be specified on figure 2.

Connectors: Connectors shall be a PIN U-174/U as specified in MIL-DTL-9177/2, PIN U-173/U as specified in Air Force drawing 57B12662, and PIN U-179A/U type connector, or electrically and mechanically compatible parts as approved by the qualifying activity. See figure 1.

Color: Color shall be as specified in MIL-PRF-87819.

Weight: Weight shall be sufficient to meet the noise-attenuation requirements of this specification, without compromising comfort, not to exceed 1.65 lbs.

PIN: M87819/4-01.

Performance characteristics: See table I, table II, and MIL-PRF-87819.

Attenuation: Testing for attenuation shall be as specified in MIL-PRF-87819 with exception; use table I specified herein for attenuation values.

TABLE I. Attenuation values. 1/ 2/ 3/

Frequency (Hz)	63	80	100	125	160	200	250	135
Minimum attenuation (mean - 2xSD)	3	3	4	5	7	9	12	14
Minimum attenuation (mean - 2xSD) with Eyeglasses	1	1	2	3	4	6	8	11
Frequency (Hz)	400	500	630	800	1,000	1,250	1,600	
Minimum attenuation (mean - 2xSD)	16	18	19	20	21	21	22	
Minimum attenuation (mean - 2xSD) with Eyeglasses	13	15	16	17	19	20	21	
Frequency (Hz)	2,000	2,500	3,150	4,000	5,000	6,300	8,000	
Minimum attenuation (mean - 2xSD)	22	22	22	22	21	21	20	
Minimum attenuation (mean - 2XSD) with Eyeglasses	22	22	22	21	20	19	14	

1/ Eyeglasses PIN HGU-4/P shall be as specified in MIL-PRF-87819.
2/ See “Attenuation“ in MIL-PRF-87819, with above exceptions to attenuation values.
3/ “SD” is Standard Deviation for the actual attenuations at each frequency. See ANSI S12.42.

TABLE II. Performance characteristics.

Inspection 1/	Qualification test	Group A	Group B	Group C
Subgroup 1				
Visual and mechanical	X	X		X
Acoustic quality	X	X		X
Attenuation (Qualification)	X			
Attenuation (Conformance)				X
Speech intelligibility	X			
Headset system sensitivity	X			X
Subgroup 2				
Headband pressure	X		X	
Headband flexing	X			X
Twist and pull	X			X
Shock (drop)	X			X
Fungus	X			
Vibration	X			X
Temperature	X			X
Subgroup 3				
Temperature shock	X			X
Humidity	X			X
Salt fog	X			X
Subgroup 4				
Cable isolation	X			X

1/ See MIL-PRF-87819 for inspection details.

Intended use. Headset-microphone PIN M87819/4-01 is a moderate ambient noise level headset-microphone designed for use by in-flight aircrews to provide communication under the noise conditions encountered in military aircraft. The use of earplugs in conjunction with the headset is recommended when this headset is worn in close proximity to aircraft engines or other high-noise maintenance equipment. For such ground-level applications, it is recommended that PIN M87819/1-01 be used. The noise attenuation requirements for this document were developed by U. S. Air Force (Air Force Research Laboratory (AFRL) 711th HPW/RHCB (Battlespace Acoustics) Wright-Patterson AFB OH 45433).

Changes from previous issue. The margins of this specification sheet are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Referenced documents. In addition to MIL-PRF-87819, this document references the following:

MIL-DTL-9177/2
MIL-PRF-25670/2
MIL-PRF-26542/2
57B12662
ANSI S12.42

CONCLUDING MATERIAL

Custodians:
Air Force - 85
DLA - CC

Preparing activity:
DLA-CC

(Project 5965-2009-006)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.