


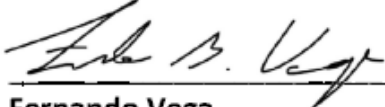

TEST REPORT  
GT -23-049  
4/25/2023



Glenair, Inc. 1211 Air Way, Glendale, California, 91201  
Tel: (818) 247-6000 Fax: (818) 247-7240

**TEST REPORT GT-23-049**  
**QUALIFICATION TEST REPORT FOR**  
**MIL-DTL-38999 SERIES I, II, III & IV HERMETIC CONNECTORS**  
**GROUP C 24 MONTH PERIODIC**

APPROVALS

 _____ (Prepared By) <b>David Donner</b> Test Engineer, Glenair, Inc.	<u>4/26/2023</u> Date
 _____ <b>Fernando Vega</b> Engineering Product Manager, Glenair, Inc.	<u>4/25/2023</u> Date
 _____ <b>Mike Ghara</b> Director of Engineering, Glenair, Inc.	<u>4/25/23</u> Date

TEST REPORT  
GT -23-049  
4/25/2023



**Glenair, Inc. 1211 Air Way, Glendale, California, 91201**  
**Tel: (818) 247-6000 Fax: (818) 247-7240**

---

**REVISION PAGE**

REVISION LETTER	DESCRIPTION OF REVISION	PAGE	DATE	APPROVAL
A	Initial Release	All	4/25/2023	-



**Glenair, Inc. 1211 Air Way, Glendale, California, 91201**  
**Tel: (818) 247-6000 Fax: (818) 247-7240**

---

**Contents:**

REVISION PAGE ..... 2  
Scope..... 4  
Summary of Results ..... 4  
APPENDIX A, QTP-1191 ..... 9  
APPENDIX B, NOTDs (Notice of Test Deviations) and Dispositions ..... 23  
APPENDIX C, Plating Thickness Certification ..... 29  
APPENDIX D, Environmental Associates Labs’ Report ..... ##

**NOTE:** For Applicable Documents, sample numbers and part numbers, see Appendix A, QTP-1191 (superseding QTP-558)



*Glenair, Inc. 1211 Air Way, Glendale, California, 91201*  
*Tel: (818) 247-6000 Fax: (818) 247-7240*

---

## Scope

This report documents results of the 24-month Group C Periodic Qualification testing of Glenair Hermetic **MIL-DTL-38999 Series I, II, III & IV** connectors, manufactured by Glenair, Inc. Said testing covers electrical, mechanical, and environmental performance, and was performed by Environment Associates, Inc.

## Summary of Results

Connector samples passed all the test requirements of QTP-1191 and MIL-DTL-38999M, except for one sample (SN 3-11R) which has not completed qualification due to damage from improper assembly and preparation. Explanations for these issues are detailed in Appendix B, NOTDs. Initial sample 3-11R did not complete Durability due to an assembly issue, see NOTD 3-1. Resulting disposition was approved by DLA. Replacement sample 3-11RA was damaged due to re-soldering issues, see NOTDs 3-2 and 3-1-G1. All other samples completed qualification testing without issue.



**Glennair, Inc. 1211 Air Way, Glendale, California, 91201**  
**Tel: (818) 247-6000 Fax: (818) 247-7240**

**GROUP 1**

TEST OR INSPECTION	MIL-DTL-38999M		TEST SAMPLES	RESULTS	
	REQUIREMENT	TEST			
Visual and Mechanical Examination	3.1, 3.3, 3.4, 3.5, 3.5.2 & 3.5.3	4.5.1	All (Group 1) Samples	Pass	
Magnetic Permeability (except finish D of series I and II)	3.3.4	4.5.48	All except 1-3R/P & 1-6R/P	Pass	
Thermal shock (hermetics only)	3.7	4.5.3	All Samples (Group 1)	Pass	
Air leakage (hermetics only)	3.10	4.5.6	All Samples (Group 1)	Pass	
Coupling and uncoupling torque	3.11	4.5.7		Pass	
Durability	3.12	4.5.8		Pass	
Insert retention	3.16	4.5.12		Pass	
Shell-to-shell conductivity (not applicable to class C and finish C)	3.29	4.5.25		Pass	
Salt spray (corrosion) (standard test applicable to series I and II finishes A, D, F, N, R, U, and series III and IV classes F, G, N only)	3.17	4.5.13.1		1-2R, 1-3R, 1-4R, 1-6R, 1-8R, 1-12R	Pass
Coupling and uncoupling torque	3.11	4.5.7		All Samples (Group 1)	Pass
Shell-to-shell conductivity (not applicable to class C and finish C)	3.29	4.5.25	Pass		
Contact resistance (hermetics with sockets only)	3.18.2	4.5.14.2	1-1R, 1-2R, 1-5R, 1-6R, 1-8R, 1-12R	Pass	
Electrical engagement	3.19	4.5.15	All Samples	Pass	
External bending moment	3.20	4.5.16		Pass	
Bayonet coupling pin strength (series I and II only)	3.21	4.5.17	1-1R THRU 1-6R	Pass	
Post Test Examination	3.52 & 3.53	4.5.49	All Samples (Group 1)	Pass	



**Glenair, Inc. 1211 Air Way, Glendale, California, 91201**  
**Tel: (818) 247-6000 Fax: (818) 247-7240**

**GROUP 3**

TEST OR INSPECTION	MIL-DTL-38999M		TEST SAMPLES	RESULTS
	REQUIREMENT	TEST		
Visual and Mechanical Examination	3.1, 3.3, 3.4, 3.5, 3.5.2 & 3.5.3	4.5.1	All Samples (Group 3) excluding 3-11R See footnote /1	Pass
Thermal shock (hermetics only)	3.7	4.5.3		Pass
Air leakage (hermetics only)	3.10	4.5.6		Pass
Insulation resistance at elevated temperature	3.14.2	4.5.10.2		Pass <sup>/1</sup>
Durability	3.12	4.5.8		Pass <sup>/1</sup>
Coupling and uncoupling torque	3.11	4.5.7		Pass
Contact resistance (hermetics with sockets only)	3.18.2	4.5.14.2	3-3R, 3-4R, 3-7R, 3-8R, 3-12R	Pass
Shock	3.28	4.5.24.1	All Samples (Group 3) excluding 3-11R See footnote /1	Pass
Insulation resistance at ambient temperature	3.14.1	4.5.10.1		Pass
Dielectric withstanding voltage at sea level	3.15	4.5.11.1		Pass
Humidity	3.30	4.5.26	All Samples (Group 3) excluding 3-11R See footnote /1	Pass
Insulation resistance at ambient temperature	3.14.1	4.5.10.1		Pass
Dielectric withstanding voltage at sea level	3.15	4.5.11.1		Pass
Post Test Examination	3.52 & 3.53	4.5.49		Pass

/1: Reference NOTD 3-1, 3-2 and 3-1-G1



**Glennair, Inc. 1211 Air Way, Glendale, California, 91201**  
 Tel: (818) 247-6000 Fax: (818) 247-7240

**GROUP 8**

TEST OR INSPECTION	MIL-DTL-38999M		TEST SAMPLES	RESULTS
	REQUIREMENT	TEST		
Visual and Mechanical Examination	3.1, 3.3, 3.4, 3.5, 3.5.2 & 3.5.3	4.5.1	All Samples (Group 8)	Pass
Contact resistance (hermetics with sockets only)	3.18.2	4.5.14.2		Pass
Contact engagement and separating force	3.42	4.5.38	(Group 8) Samples with Socket Contacts Only	Pass
Resistance to probe damage	3.43	4.5.39		Pass
Contact engagement and separating force	3.42	4.5.38		Pass
Contact plating thickness (hermetic)	3.41	4.5.37	Validated via Certificate of Conformance	Pass
Post Test Examination	3.52 & 3.53	4.5.49	All Samples (Group 8)	Pass

**CORROSION GROUP**

TEST OR INSPECTION	MIL-DTL-38999M		TEST SAMPLES	RESULTS
	REQUIREMENT	TEST		
Visual and Mechanical Examination	3.1, 3.3, 3.4, 3.5, 3.5.2 & 3.5.3	4.5.1	All Samples (Corrosion Group)	Pass
Dynamic salt spray	3.17	4.5.13.2		Pass
Post Test Examination	3.52 & 3.53	4.5.49		Pass

**HUMIDITY GROUP**

TEST OR INSPECTION	MIL-DTL-38999M		TEST SAMPLES	RESULTS
	REQUIREMENT	TEST		
Humidity	3.30	4.5.26	All Samples (Humidity Group)	Pass

TEST REPORT  
GT -23-049  
4/25/2023



**Glenair, Inc. 1211 Air Way, Glendale, California, 91201**  
**Tel: (818) 247-6000 Fax: (818) 247-7240**

---



TEST REPORT  
GT -23-049  
4/25/2023



**Glenair, Inc. 1211 Air Way, Glendale, California, 91201**  
**Tel: (818) 247-6000 Fax: (818) 247-7240**

---

## **APPENDIX A**

**QTP-1191 (superseding QTP-558)**