

Project: **Component Approval of Fitch Fuel Catalyst Housing  
Manufactured by Advanced Power Systems International  
Inc. 558 Lime Rock Road, Lakeville, CT 06039 USA**

Client: **Fuel Harmonics Plc.  
Atlantic House  
Imperial Way  
Reading**

Office: **Southampton**

Clients Order Number: **Request for Services. Tim Rhodes**

Date: **06 June 2008**

Order Status: **Complete**

Inspection Dates

First: **22 April 2008**

Final: **06 June 2008**

This certificate is issued to **Fuel Harmonics Plc** to certify that the undersigned Surveyors to Lloyd's Register EMEA did at their request attend the premises of **Testbank, Southampton** and onboard the m.v **Aurora**, on and between the above dates for the purpose of witnessing the manufacture, testing and installation of the items listed below.

<u>ITEM</u>	<u>No. OFF</u>	<u>DESCRIPTION</u>
Fitch Fuel Catalyst	One (1)	F HD 120
Fitch Fuel Catalyst	One (1)	F HD 40

Scope of Inspection

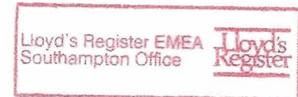
1. Witness pressure testing of the Catalysts and associated pipework and valves to 1.5 X working pressure.
2. Review manufacturer's documentation for all components.
3. Witness installation onboard the Aurora.
4. Witness operational test at working pressure onboard the Aurora.

All the above was carried out satisfactorily.

One Fuel catalyst, Type F HD 120, was fitted to the fuel oil supply line to the two forward main engines.  
One Fuel catalyst, Type F HD 40, was fitted to the fuel oil supply line to the forward boiler.  
Shut off valves were fitted to the inlet and outlet of the catalyst housings  
A Bypass line with suitable shut off arrangements has been fitted on the pipework for both catalyst housings.

All welding was carried out by suitably qualified welder to approved procedures.

P Short for self and C Magee  
Surveyor to Lloyd's Register EMEA



A member of the Lloyd's Register Group



# Marine Design Appraisal Document

Lloyd's Register EMEA  
Engineering Systems  
71 Fenchurch Street  
London  
EC3M 4BS

Date  
**27th November 2007**

Quote this reference on all future communications  
**LDSS/ENG/PAS/87036**

## Component Approval

for: Fuel Harmonics Plc

Catalyst unit housing

The plans and documents listed in the attached appendix have been examined for compliance with the piping and system arrangement requirements of LR's Rules and Regulations for the Classification of Ships, Part 5, Chapters 12 and 14 and are assigned an appraisal status as indicated subject to the following comments :-

1. The unit is to be pressure tested before installation to 1.5 x design pressure.
2. Shut off valves are to be fitted at the inlet and outlet of the Catalyst Housing. A by pass line with suitable shut off arrangements is to be provided.
3. This approval is valid for a design pressure of 350 p.s.i. @ 300deg.F and relates only to the pressure retention capabilities of the unit. The shell is to be manufactured from seamless carbon steel pipe to ASTM A105.
4. The unit is considered suitable for installation on ships classed or intended to be classed with Lloyd's Register.

Paul Stanney  
Lead Specialist  
Engineering systems  
London Plan approval  
Lloyd's Register EMEA  
Tel: 020 7423 1917

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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