



UIC SUSTAINABILITY
LOWNOISEPAD Annex A
Graphic Reference Guide for Infrabel (Part 2)

October 2023



Citation style

International Union of Railways (UIC), Sustainability, *LOWNOISEPAD Annex A: Graphic Reference Guide for Infrabel (Part 2)*, 2023.

ISBN 978-2-7461-3337-2

Warning

No part of this publication may be copied, reproduced or distributed by any means whatsoever, including electronic, except for private and individual use, without the express permission of the International Union of Railways (UIC). The same applies for translation, adaptation or transformation, arrangement or reproduction by any method or procedure whatsoever. The sole exceptions - noting the author's name and the source - are "analyses and brief quotations justified by the critical, argumentative, educational, scientific or informative nature of the publication into which they are incorporated" (Articles L 122-4 and L122-5 of the French Intellectual Property Code).

© International Union of Railways (UIC) - Paris, 2023

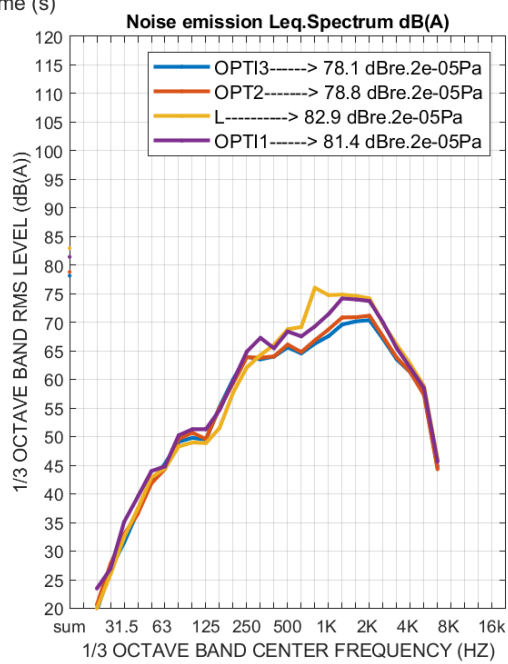
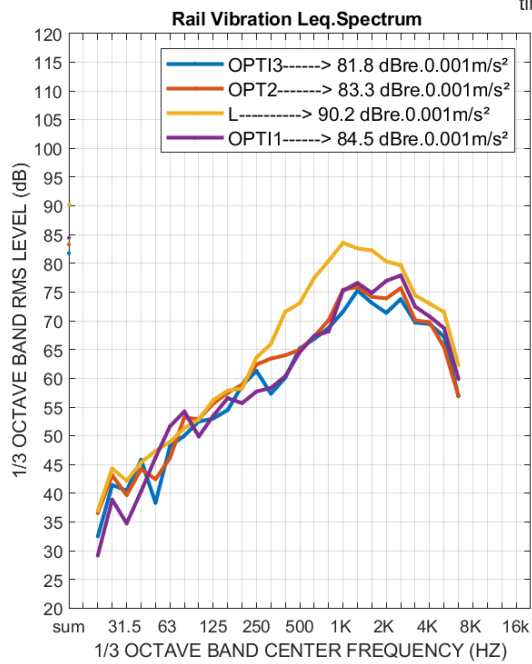
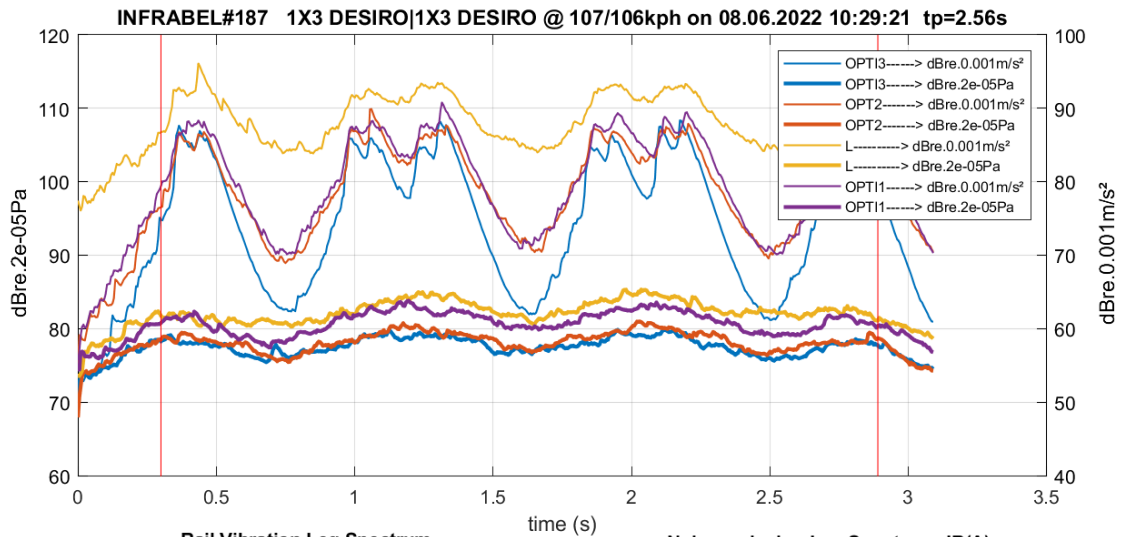
This annex, provided in a separate document, gives a detailed and graphic overview of the pass by data collected from each project member throughout the project. All results showing the noise reduction and detailed pass-by analysis, calculated on the basis of the data available in the LOWNOISEPAD software tool, are shown in a graph format for each type of rolling stock, given in an individual section for each PP (alongside Chapter 7 of this report). This annex should be used alongside the information gathered as part of the project carried out by UIC and the 12 project participants. It is not recommended to carry out analysis without first having reviewed the LOWNOISEPAD final report and the **Annex B**, and also without consulting and receiving authorisation from the project participants and UIC.

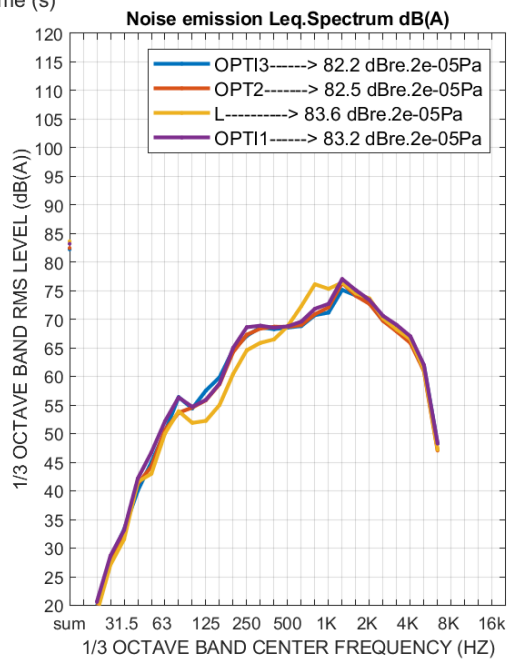
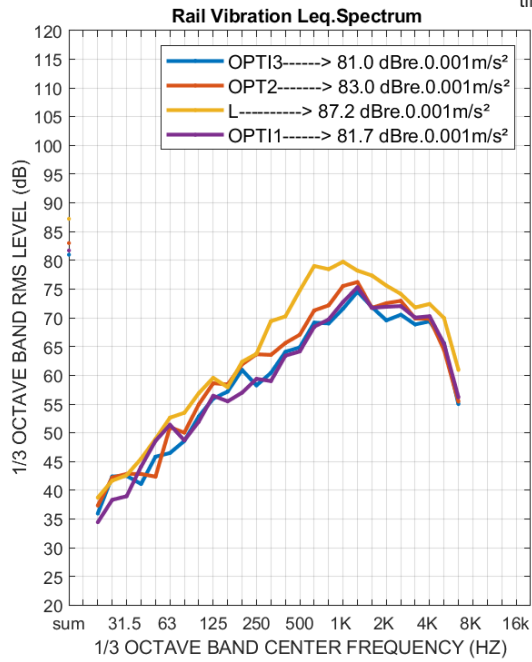
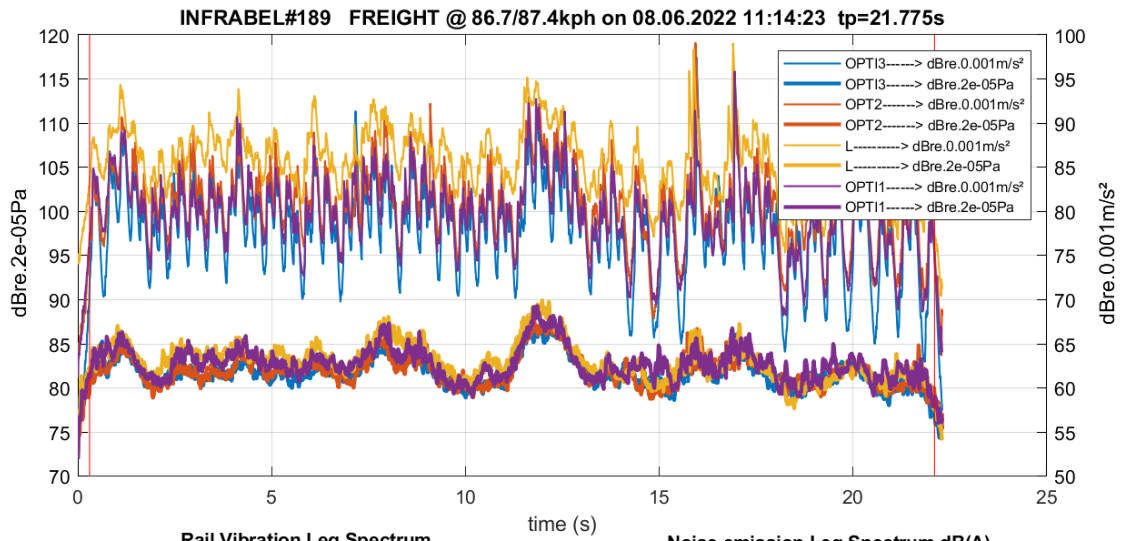


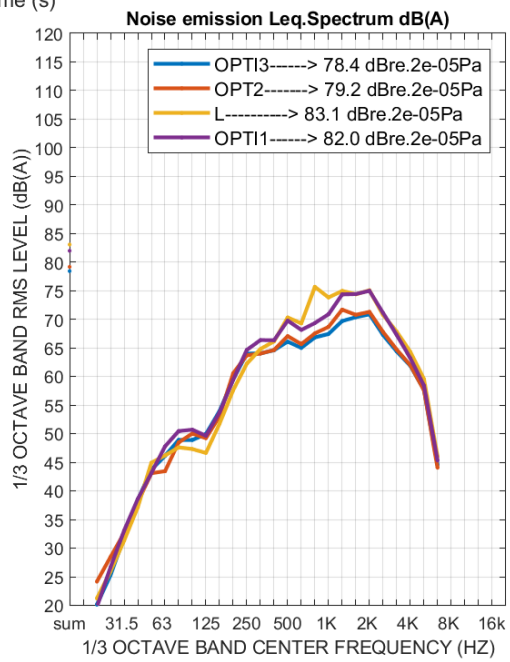
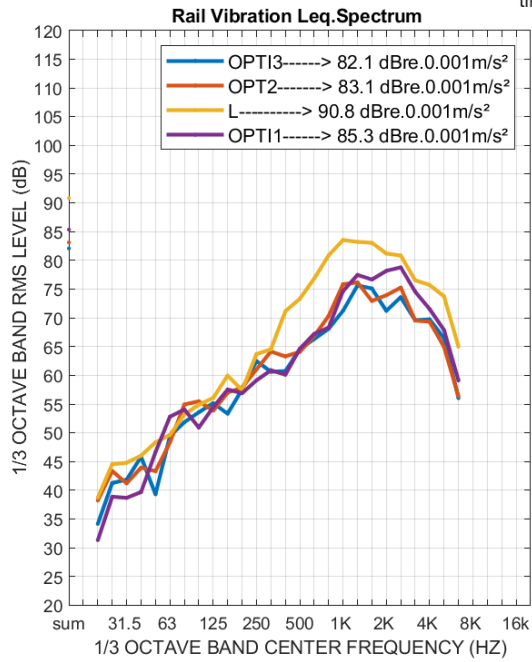
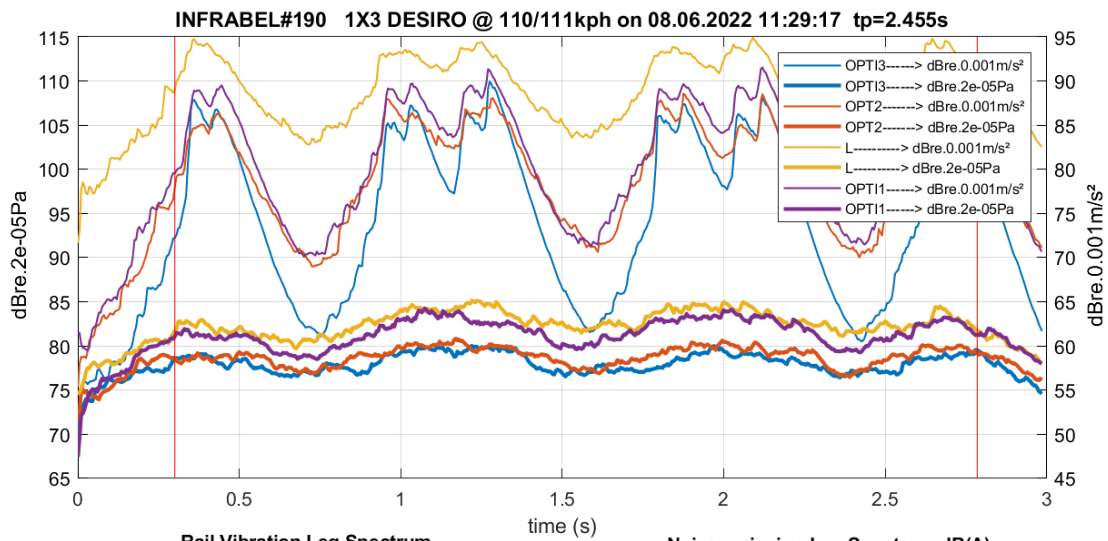
CONTENTS

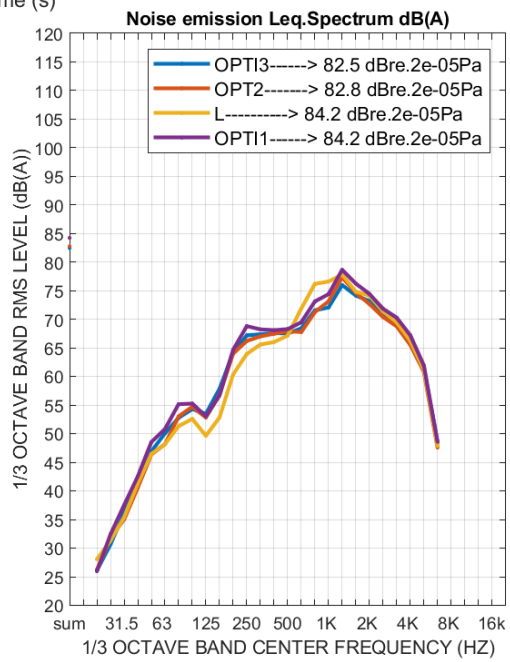
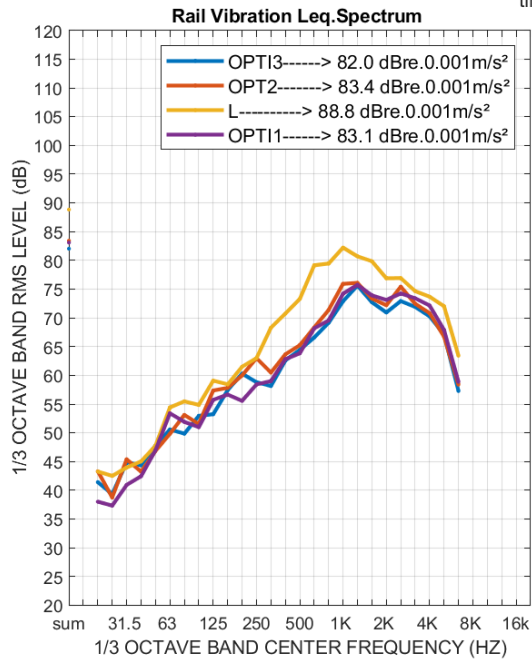
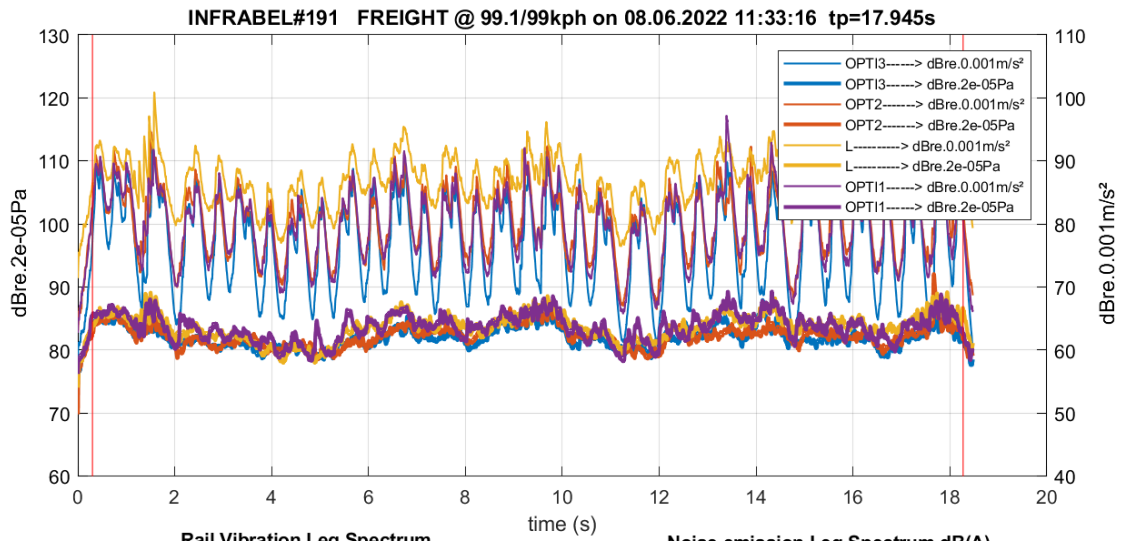
1. INFRABEL, BELGIUM - DETAILED PASS-BY PLOTS	3
--	----------

1. INFRABEL, BELGIUM - DETAILED PASS-BY PLOTS

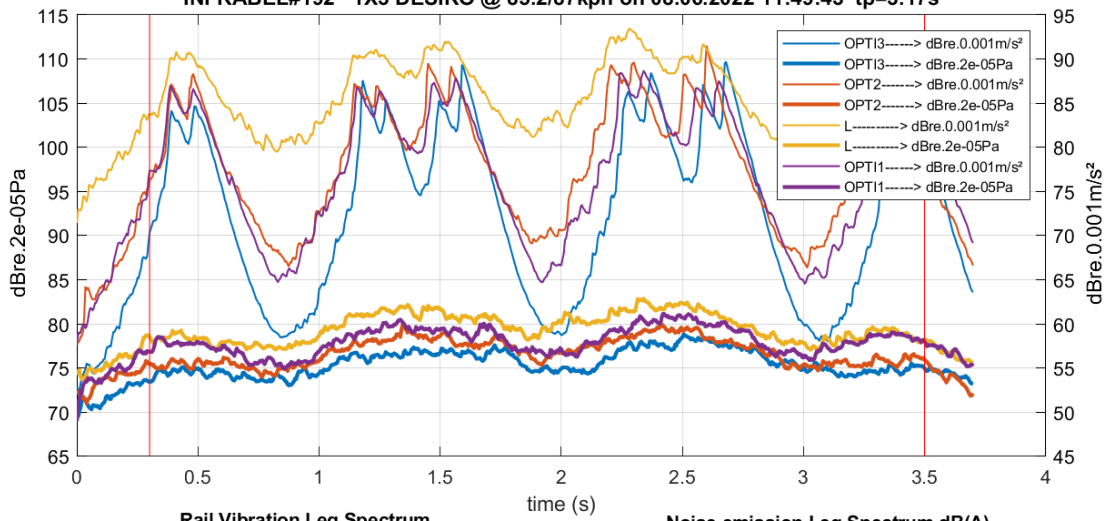




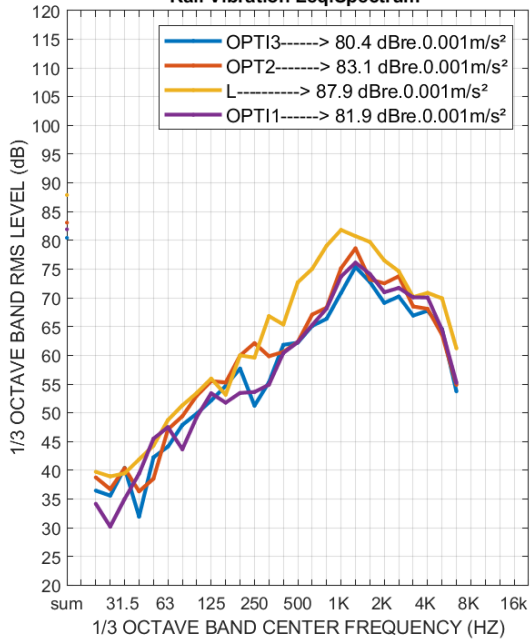




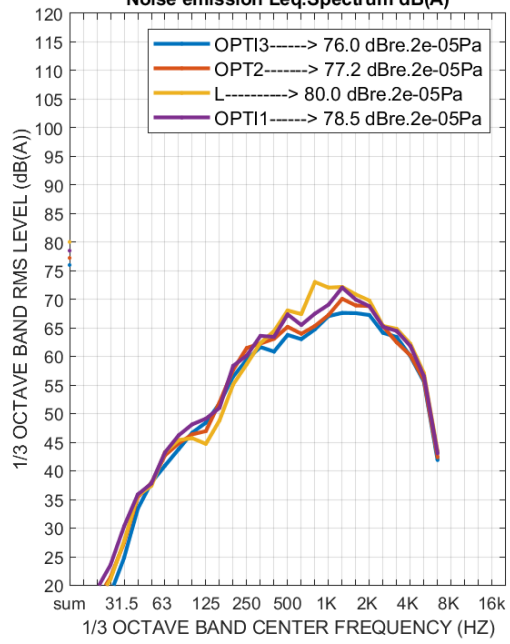
INFRABEL#192 1X3 DESIRO @ 85.2/87kph on 08.06.2022 11:49:43 tp=3.17s

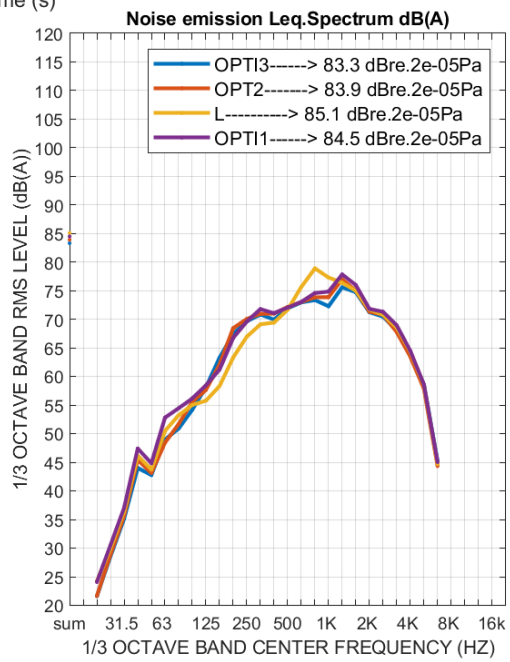
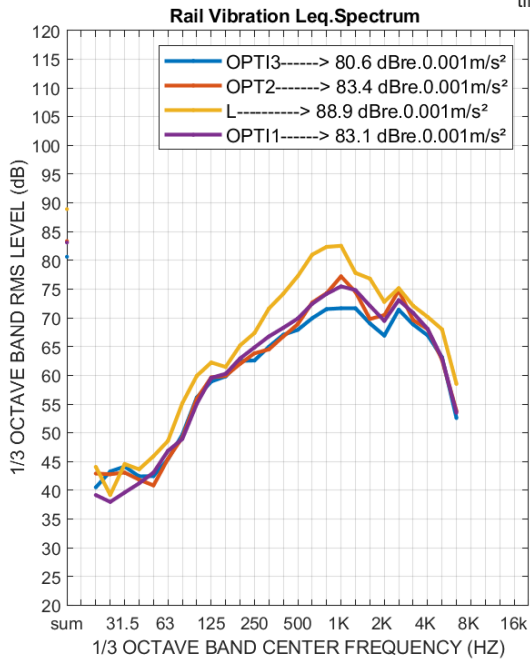
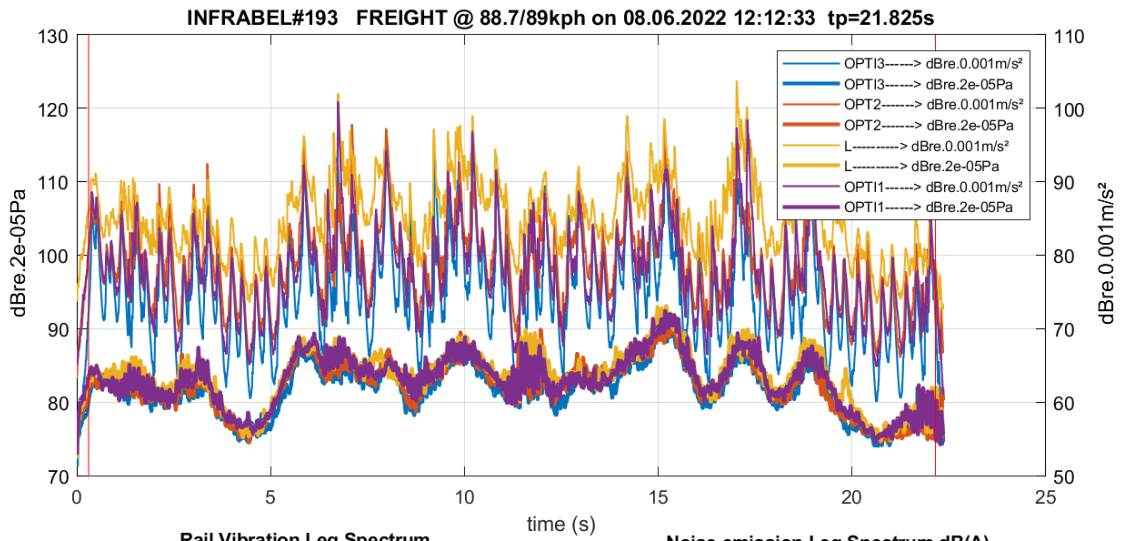


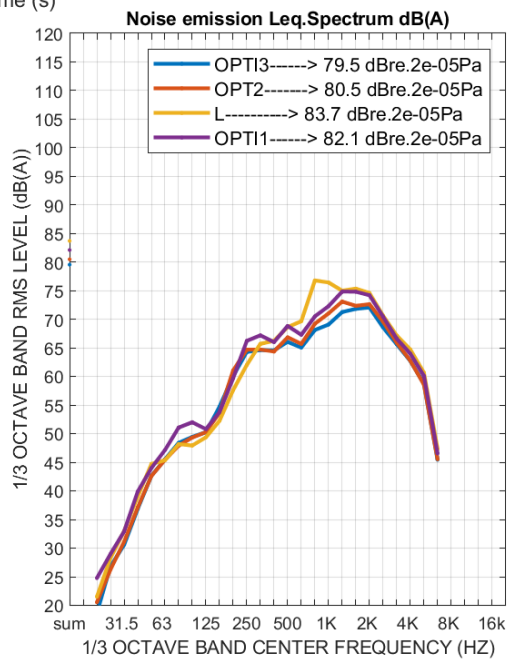
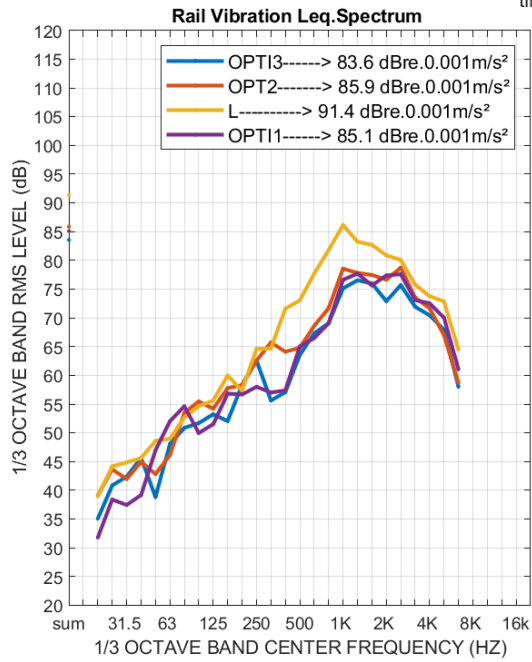
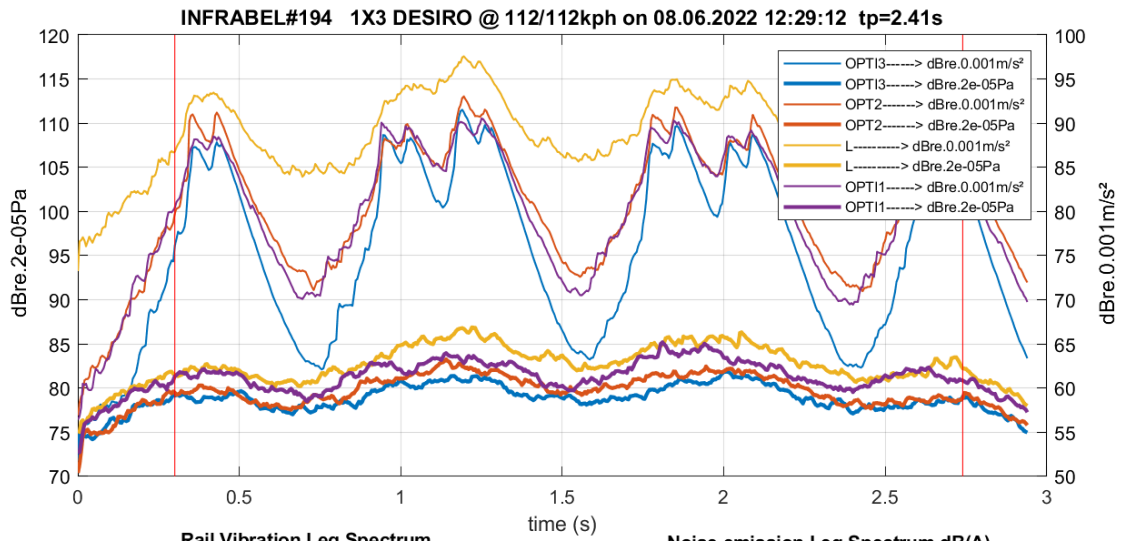
Rail Vibration Leq.Spectrum

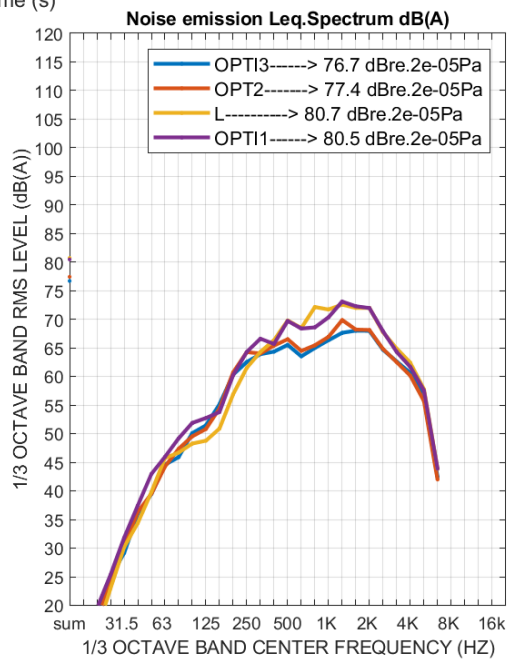
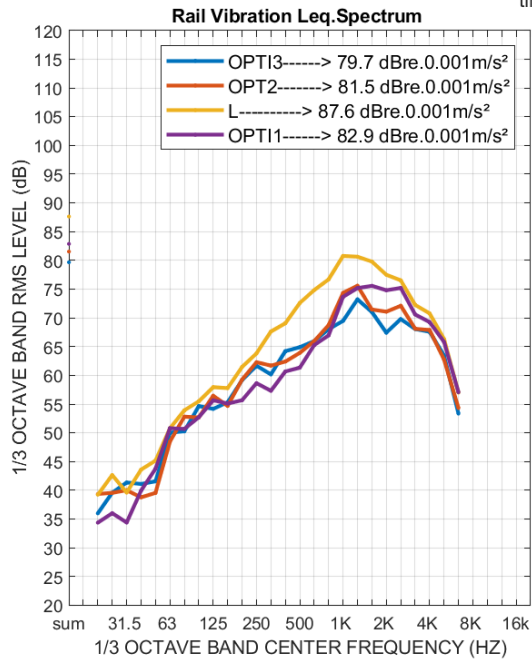
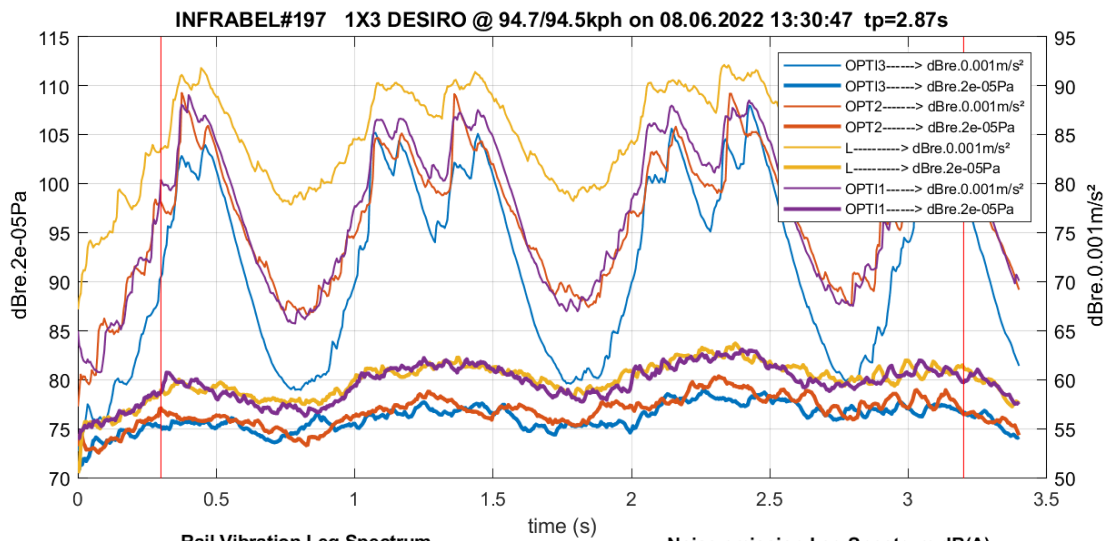


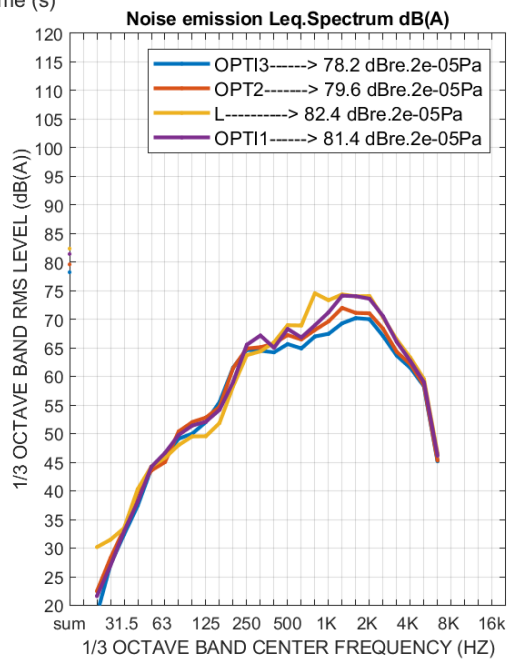
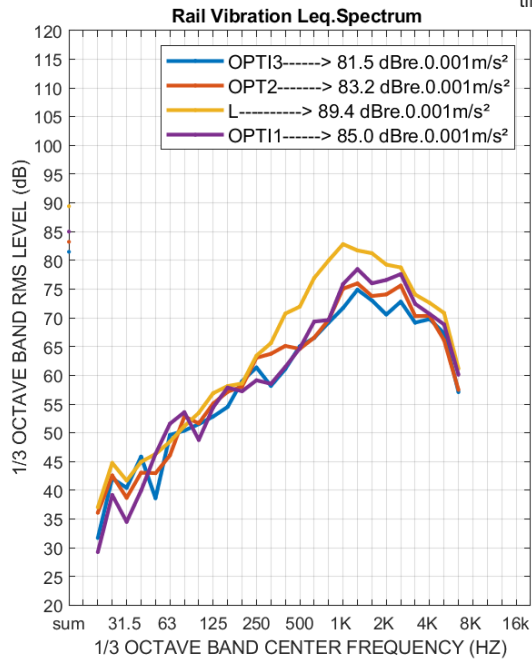
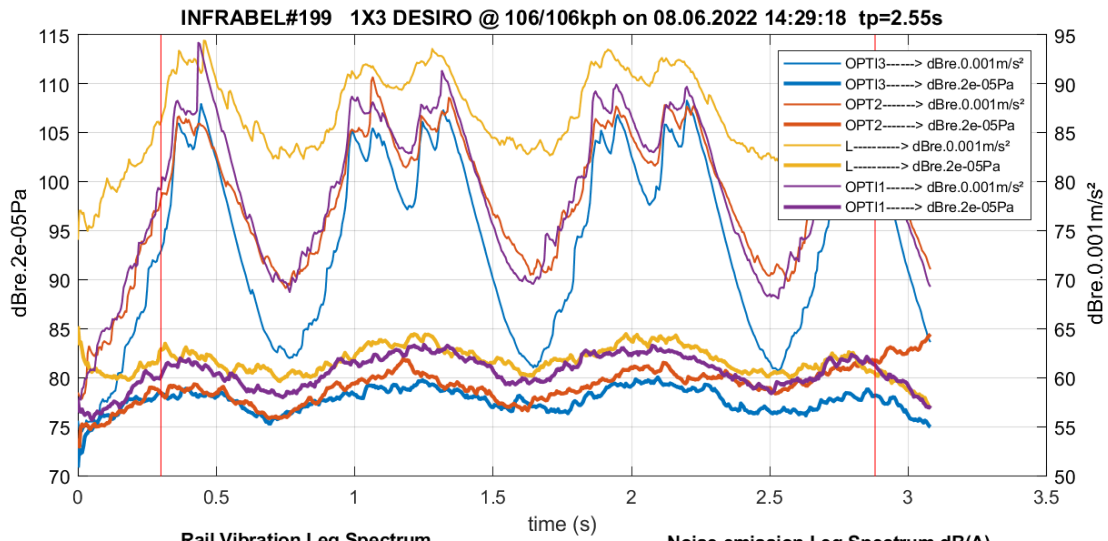
Noise emission Leq.Spectrum dB(A)

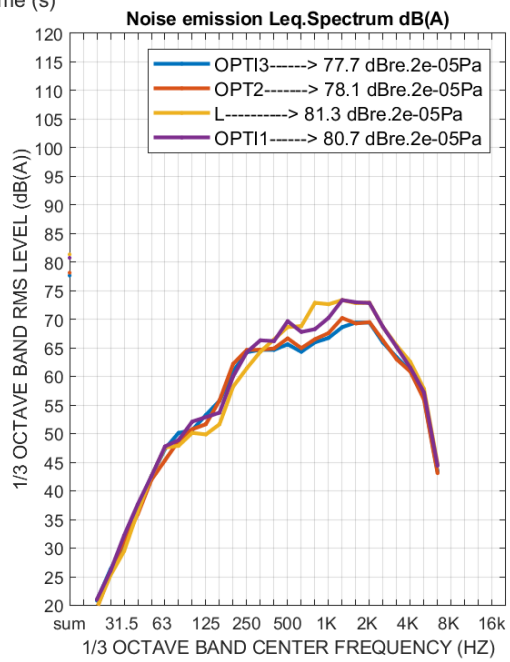
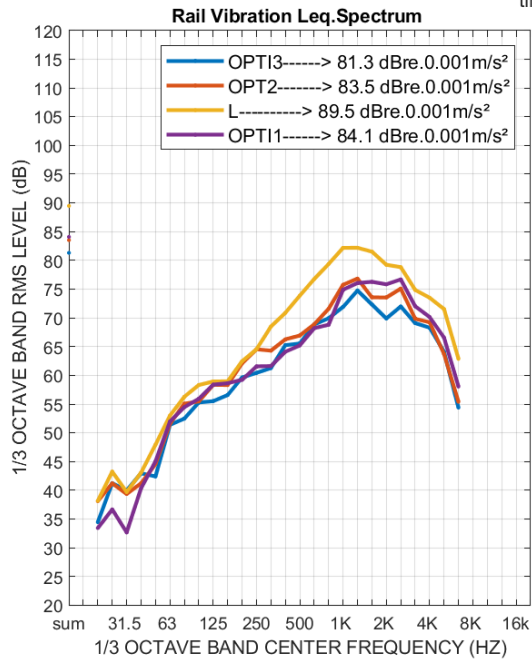
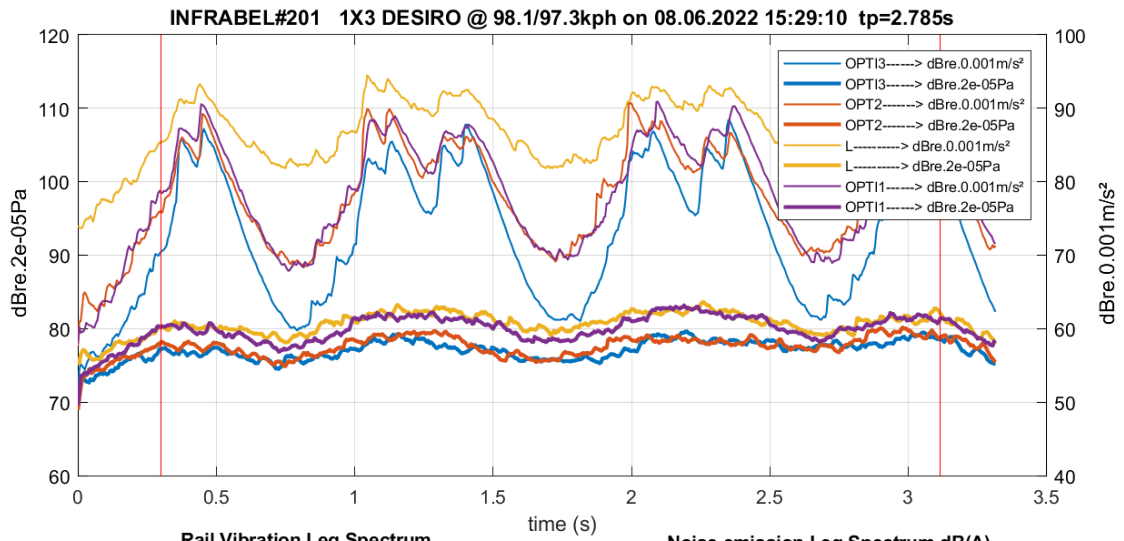


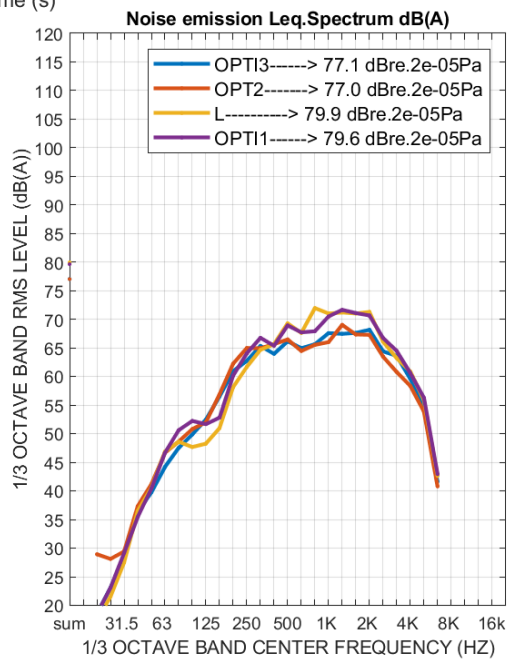
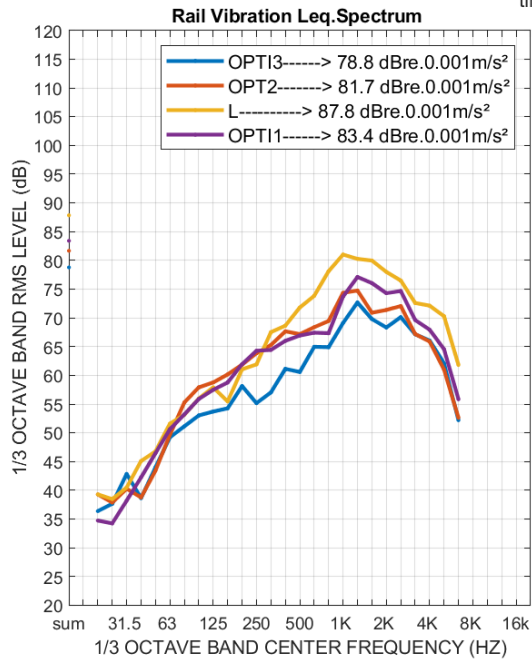
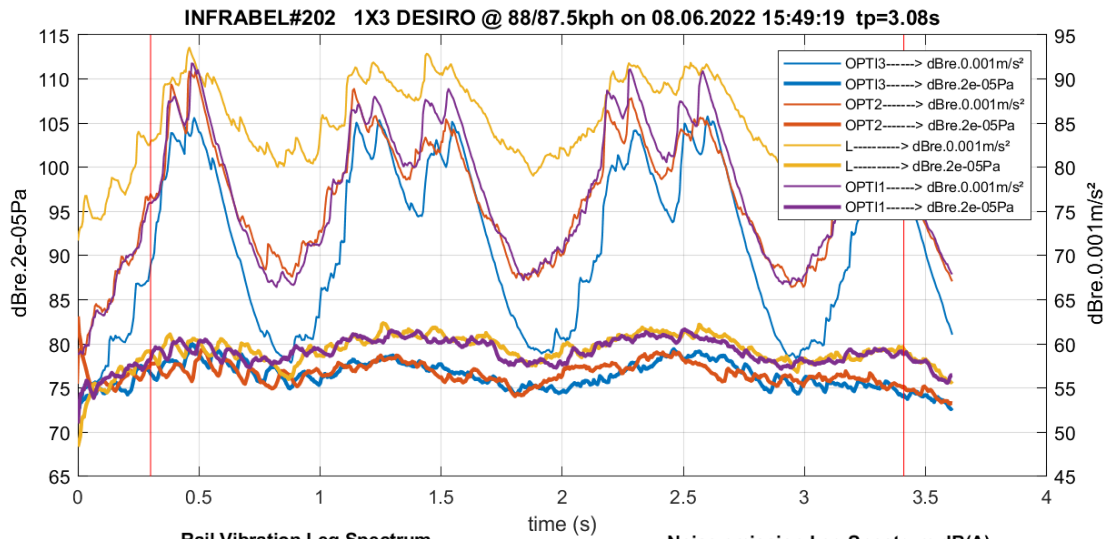


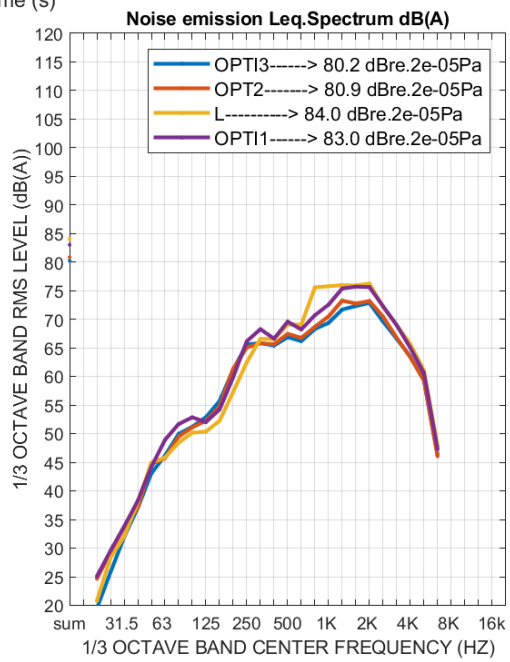
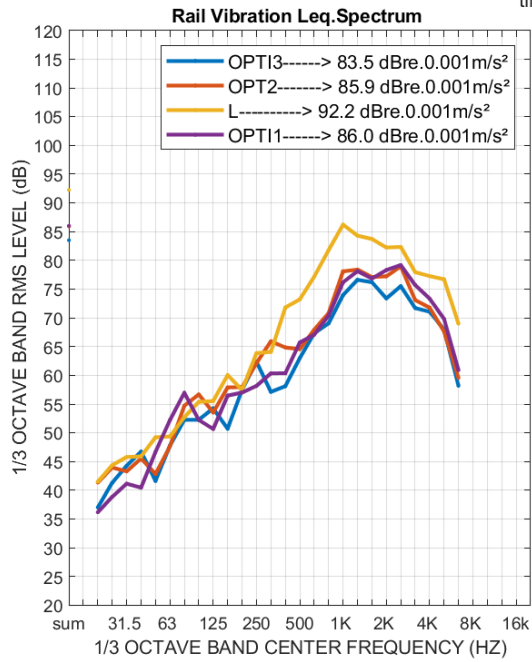
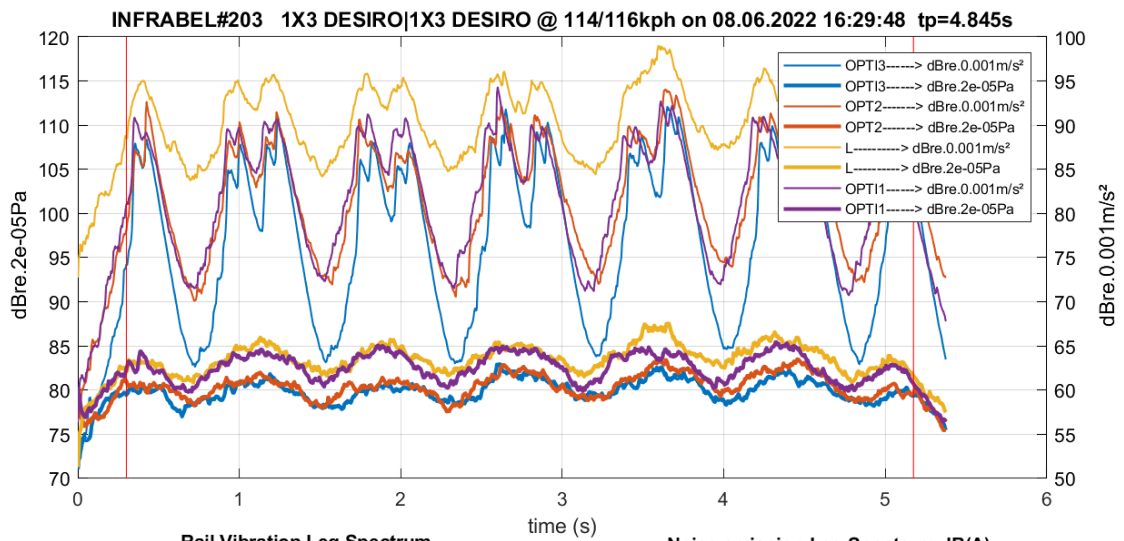


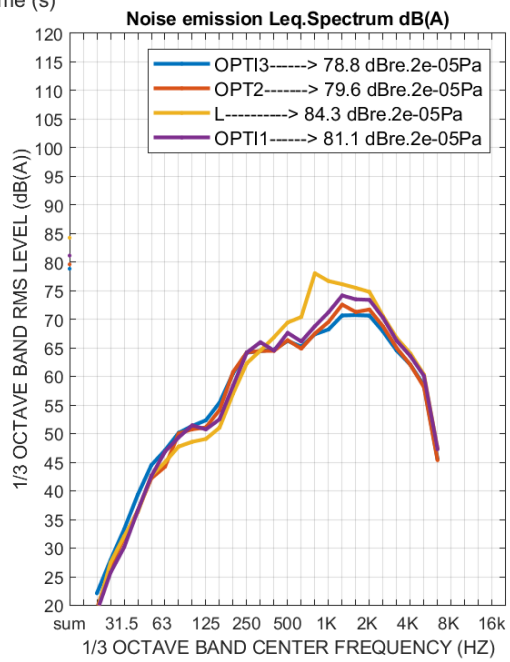
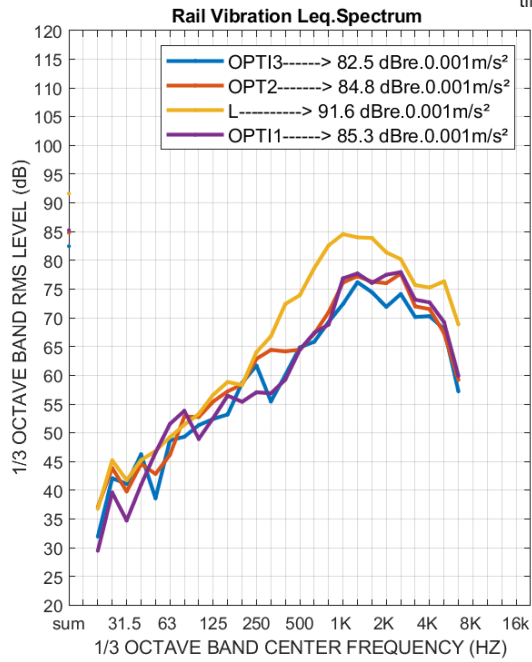
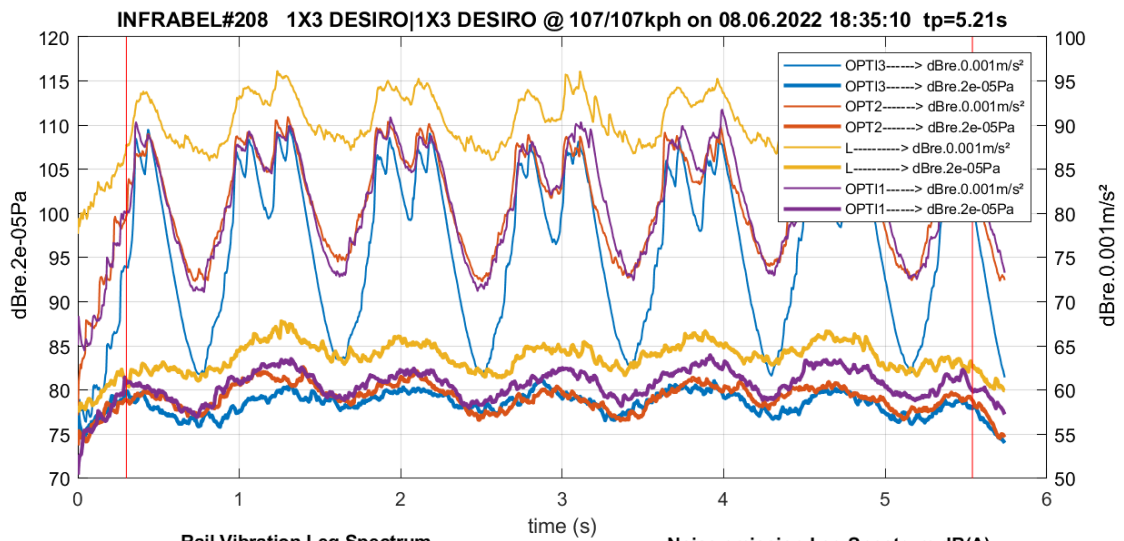


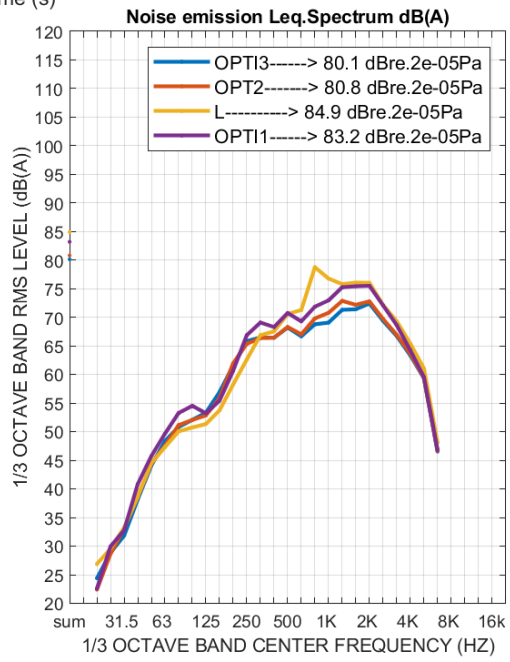
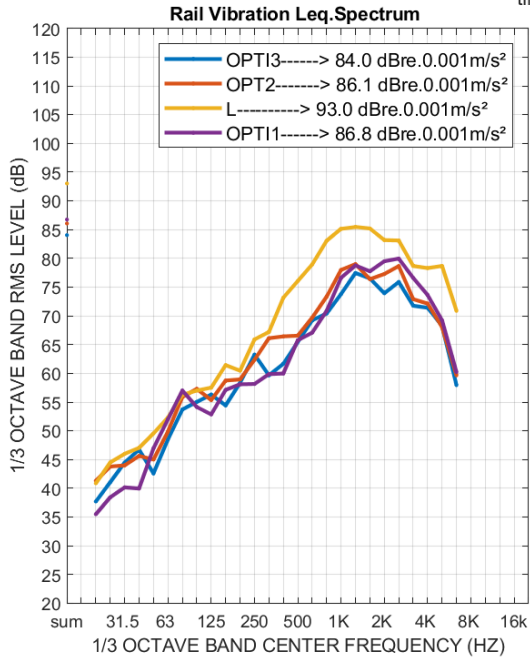
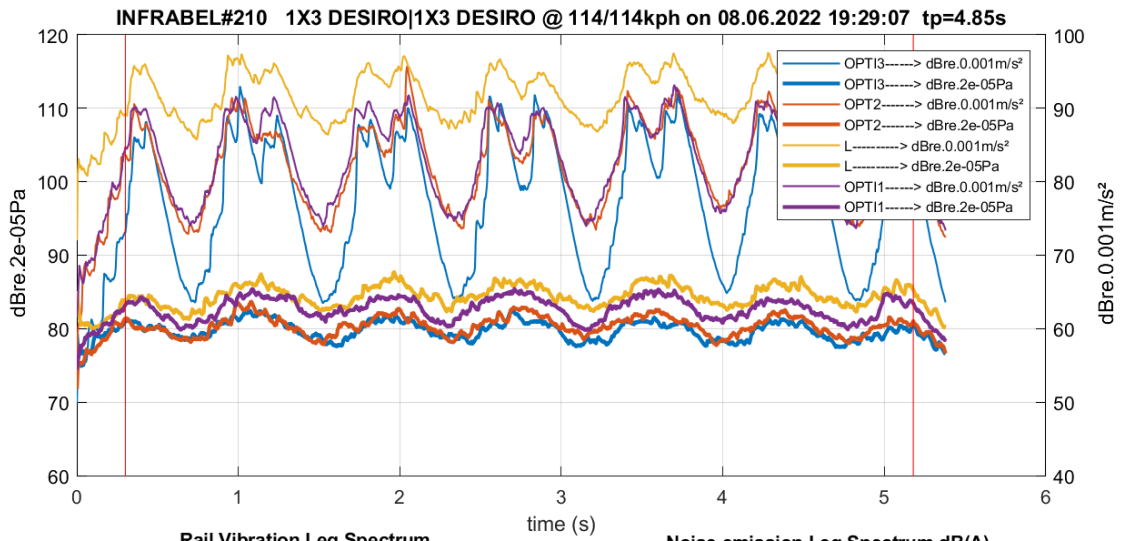


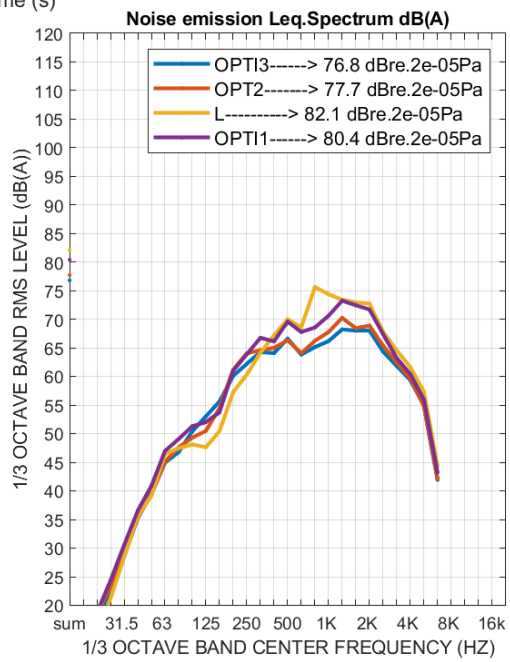
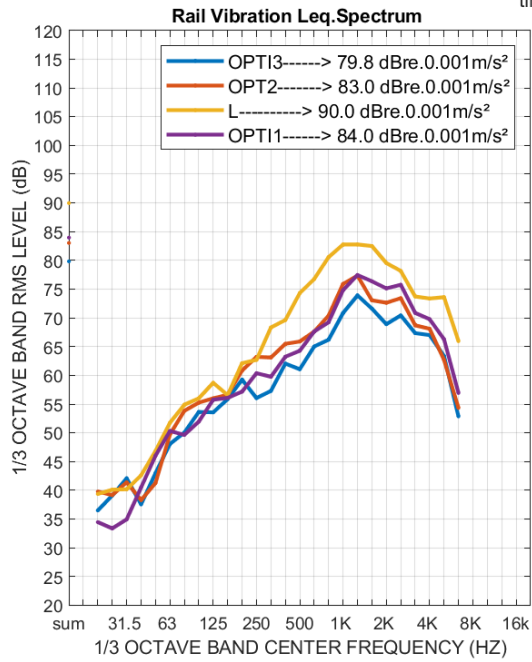
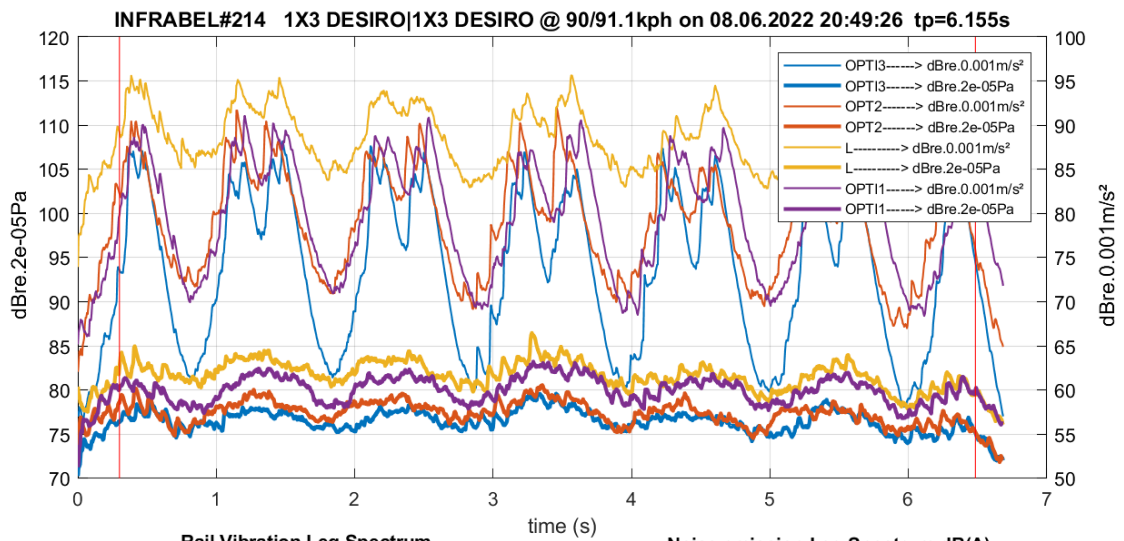


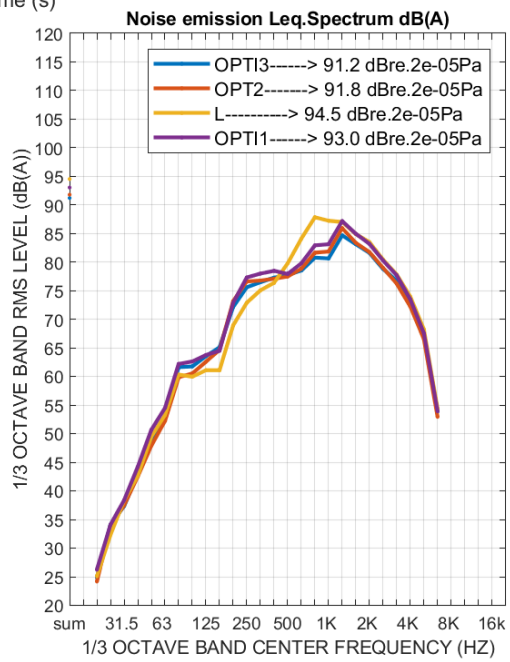
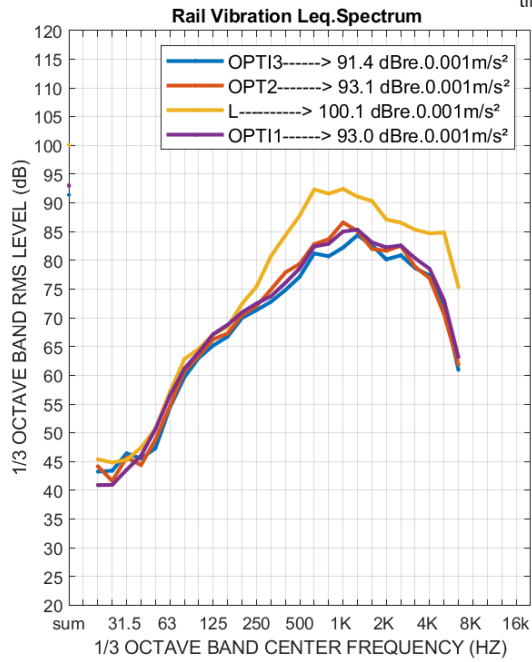
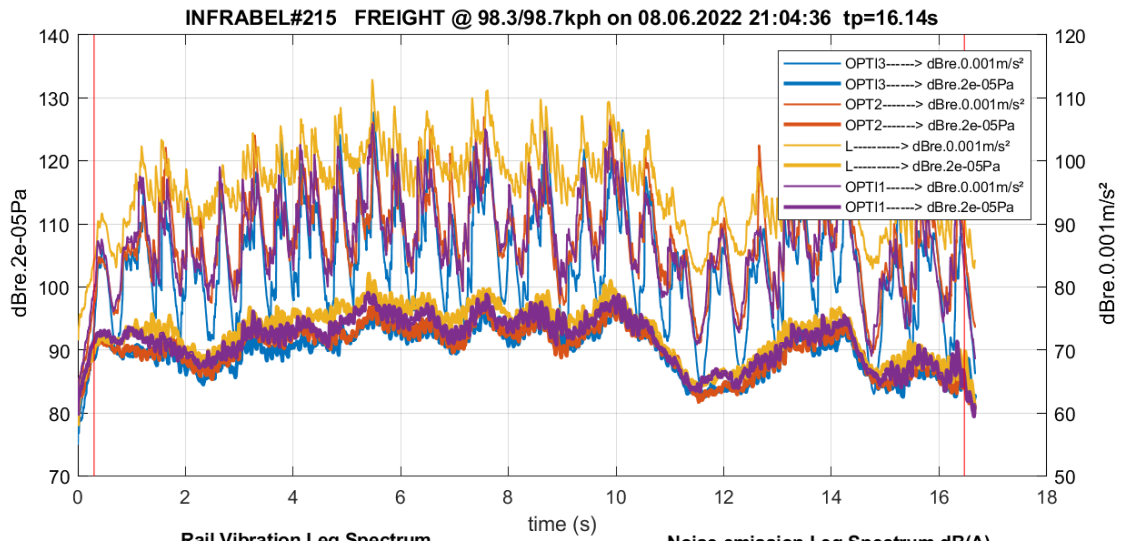


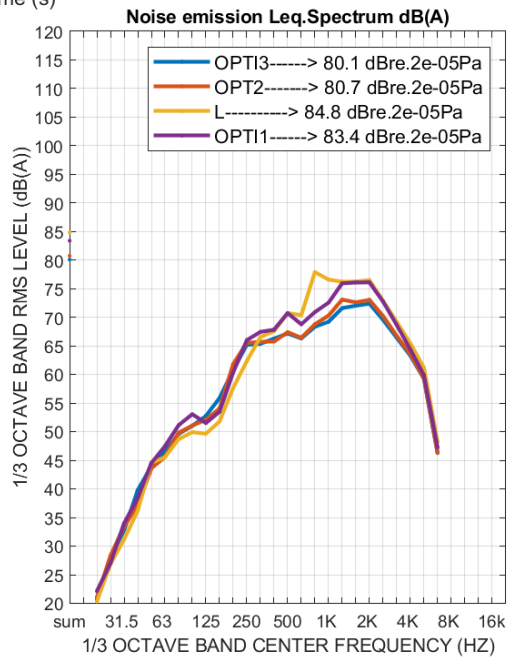
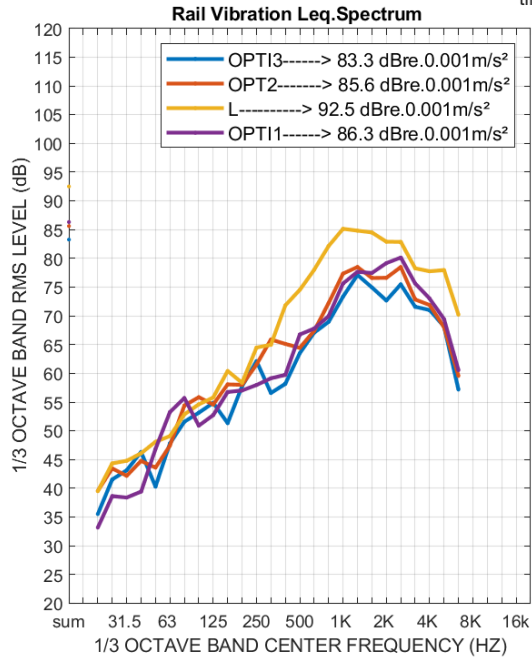
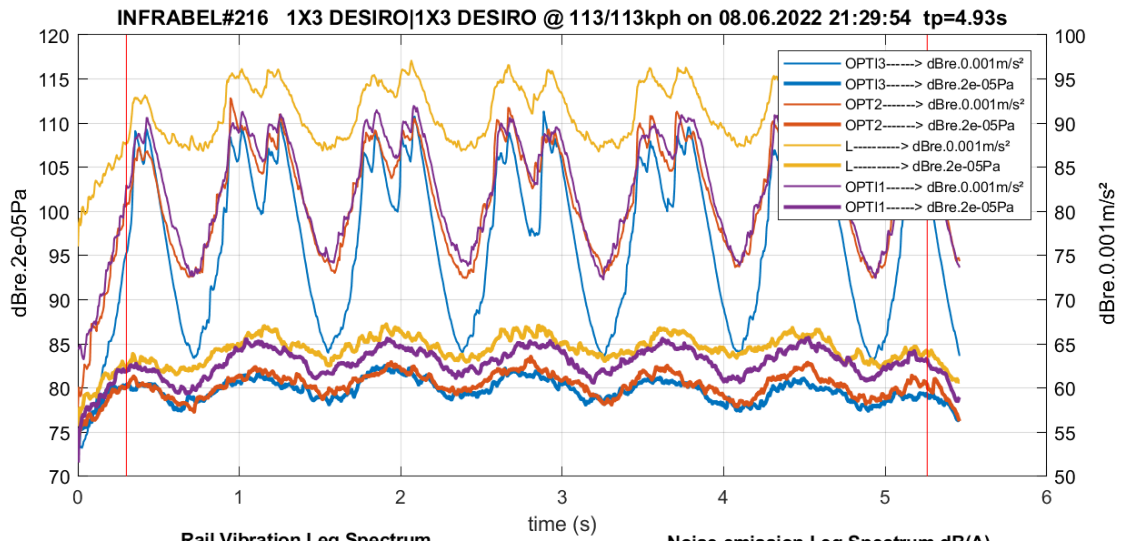




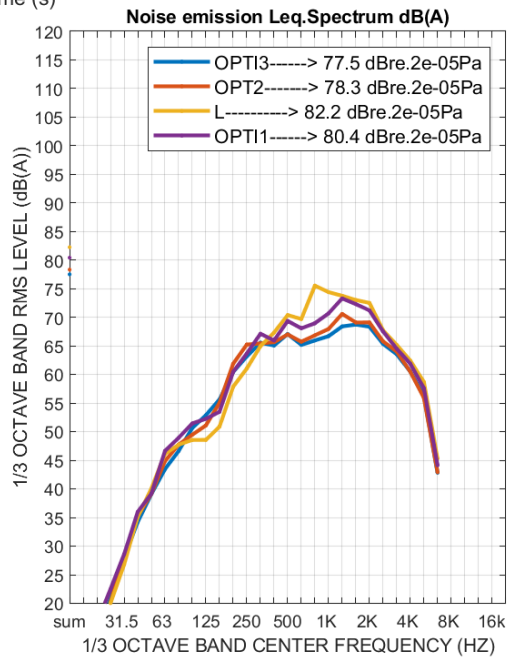
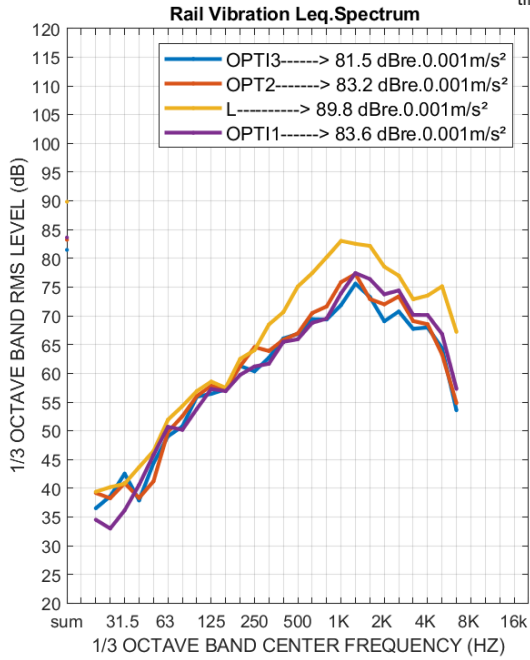
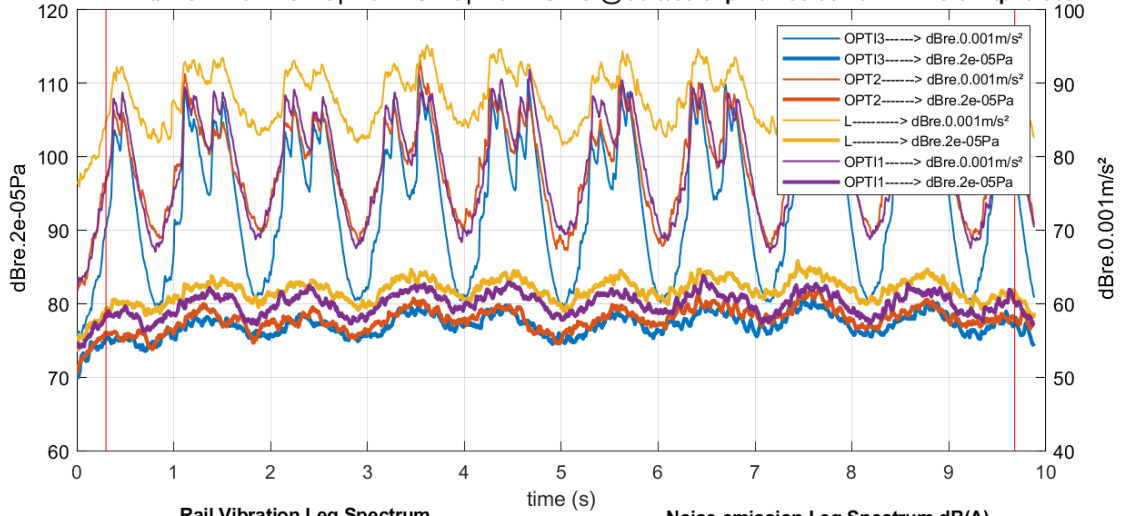


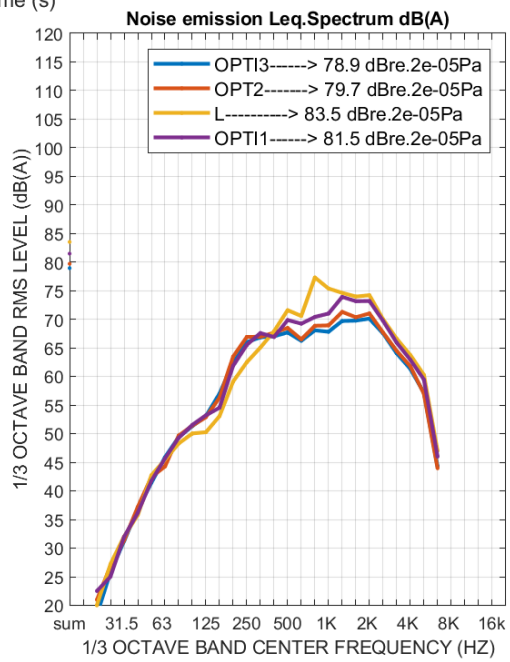
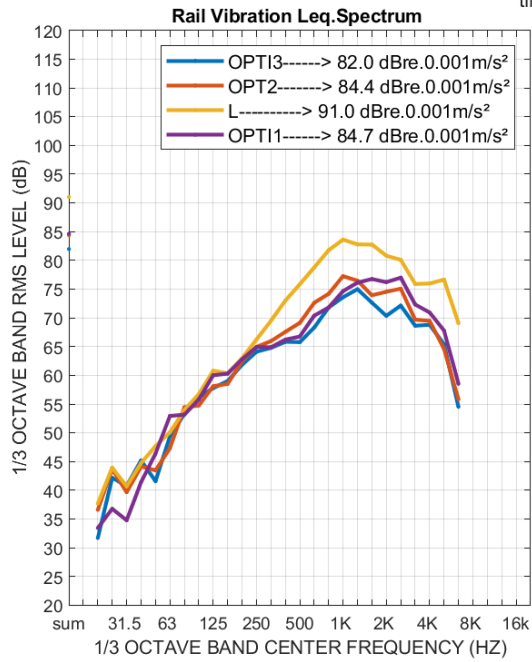
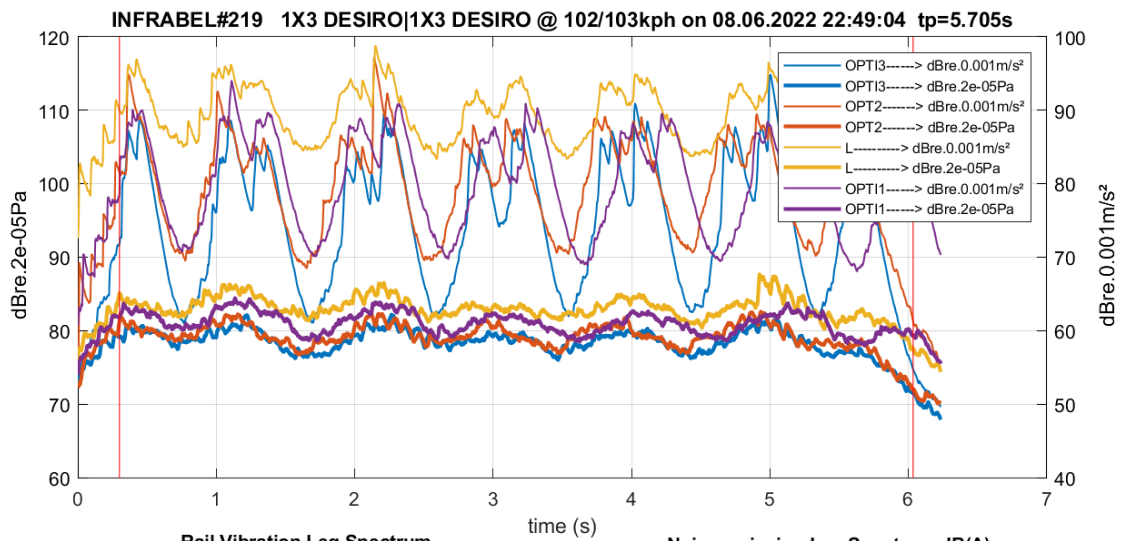


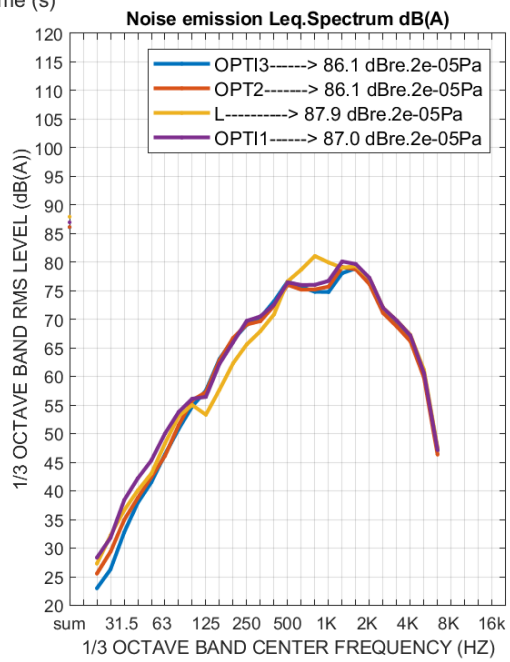
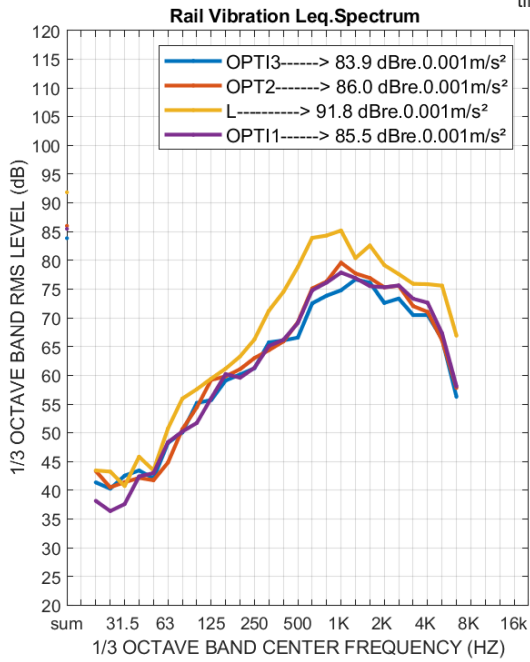
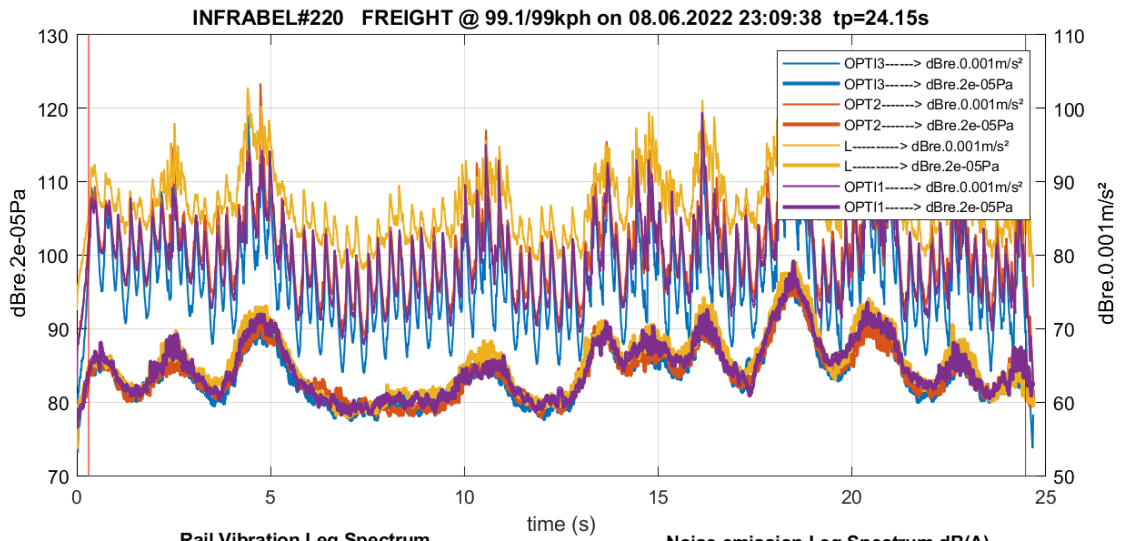


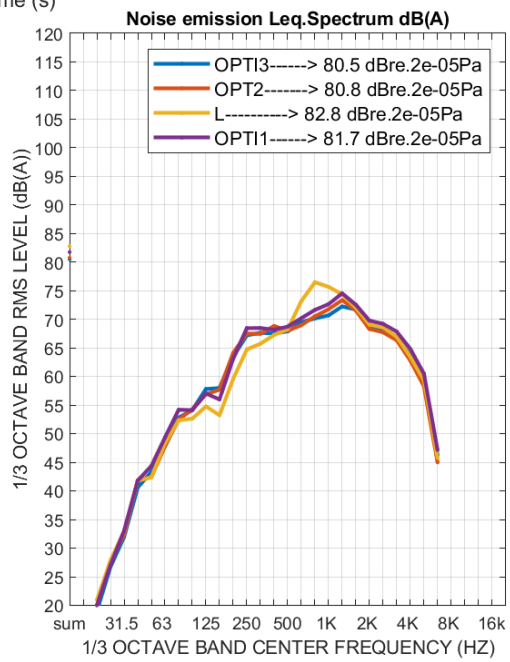
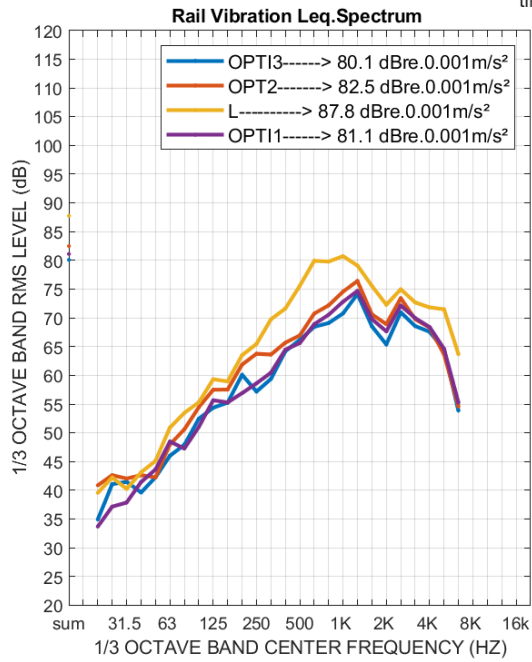
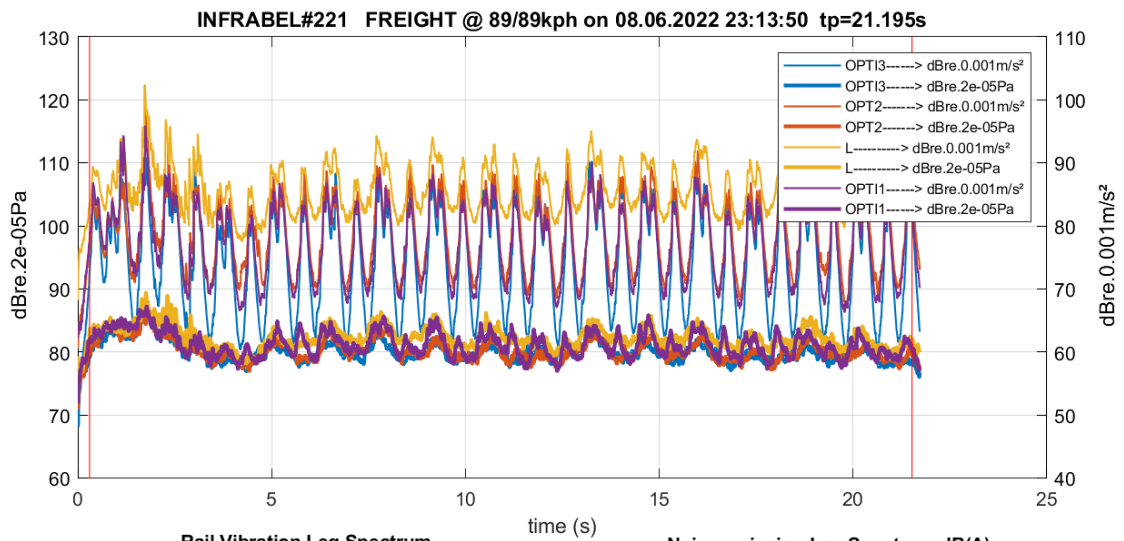


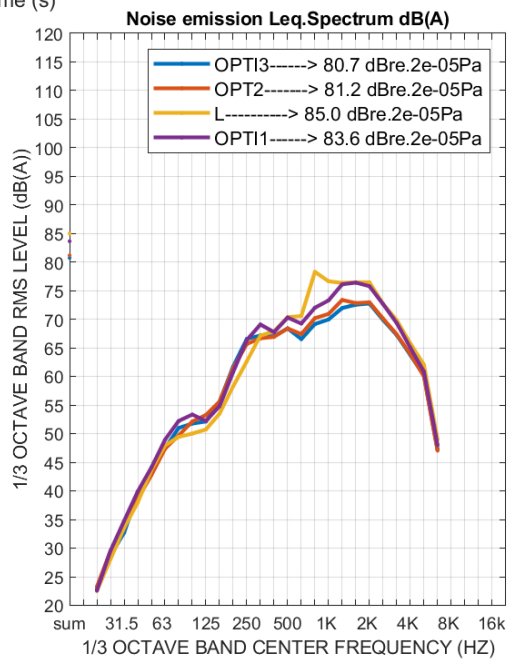
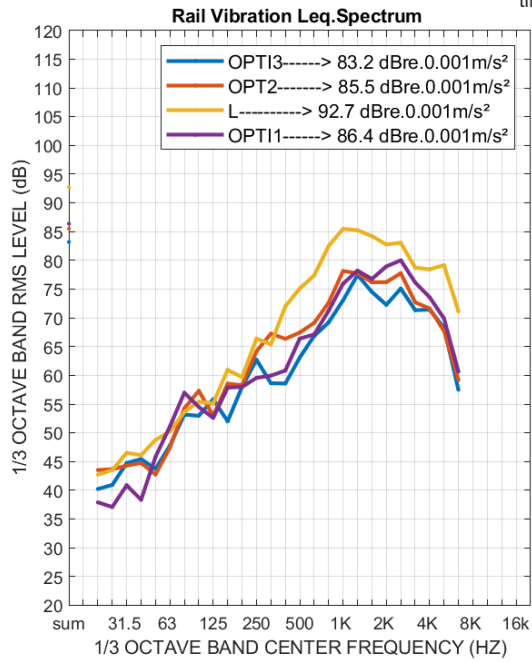
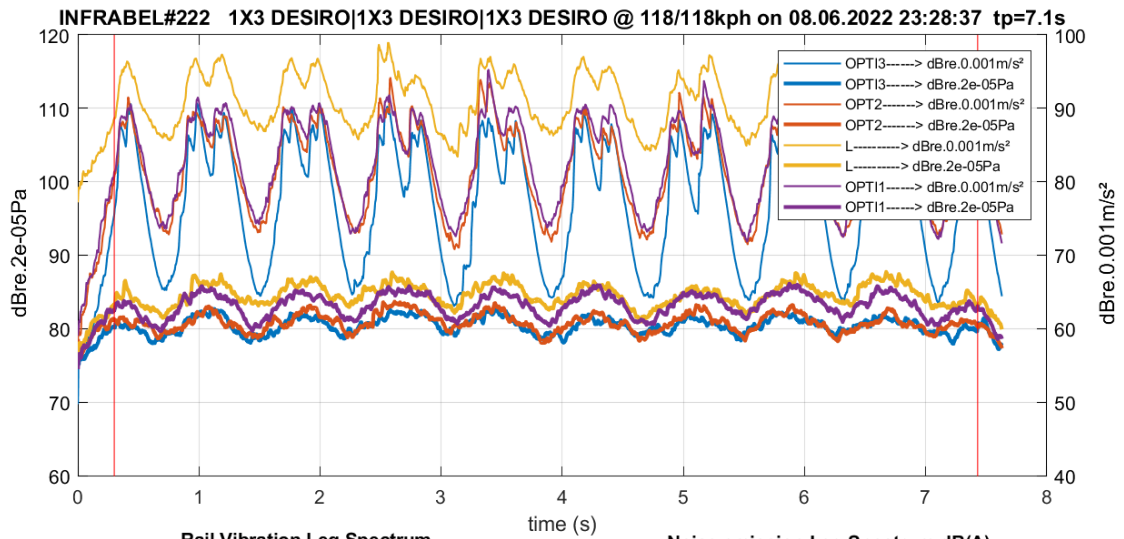
INFRABEL#218 1X3 DESIRO|1X3 DESIRO|1X3 DESIRO @ 90.3/89.8kph on 08.06.2022 22:29:32 tp=9.35s



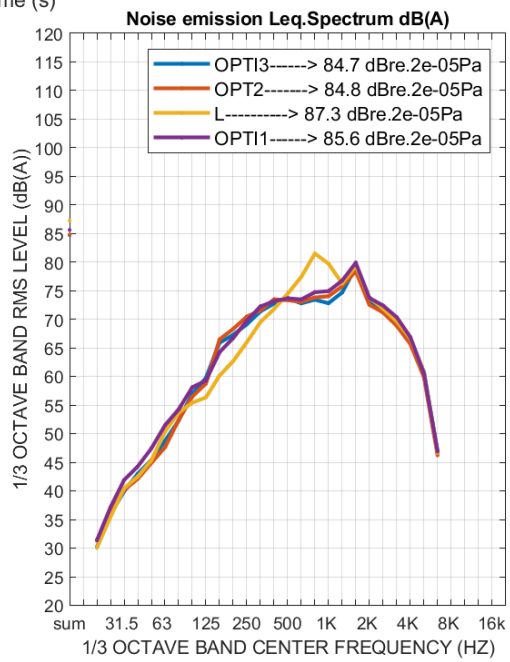
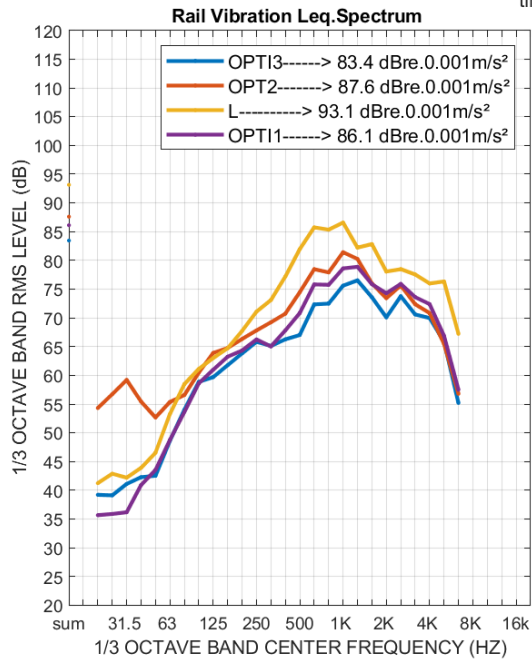
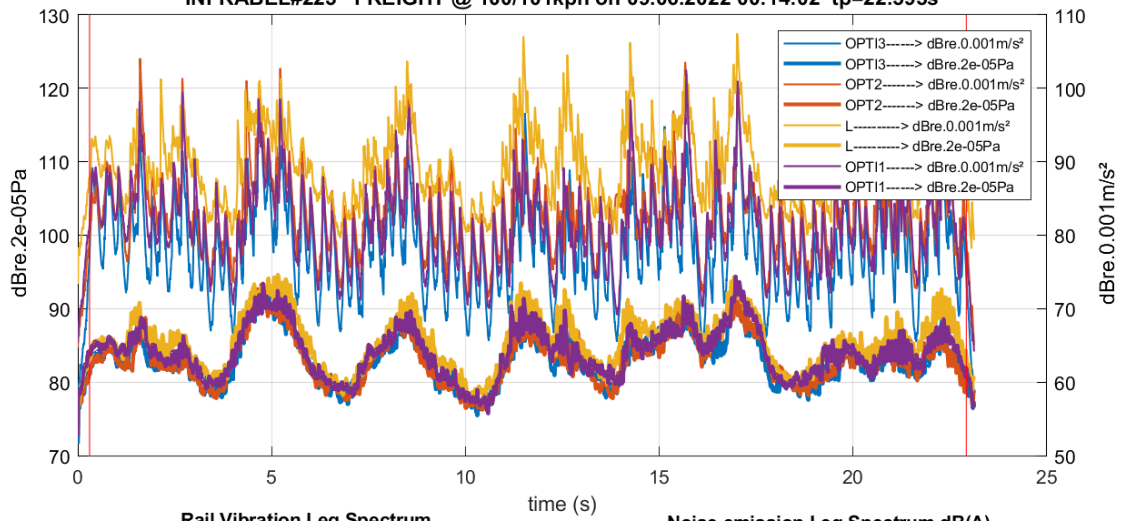


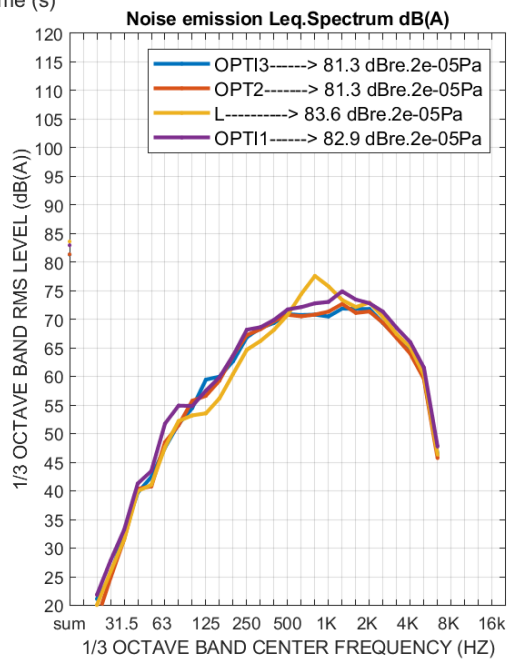
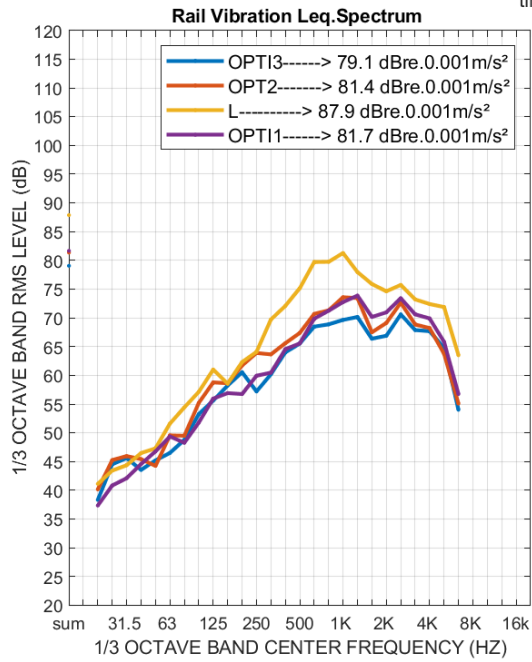
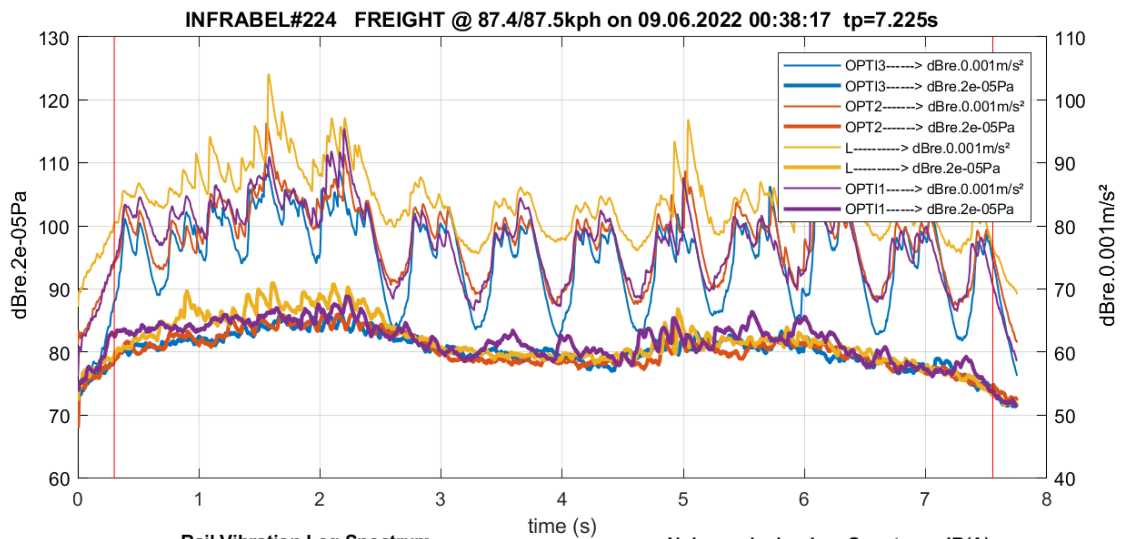




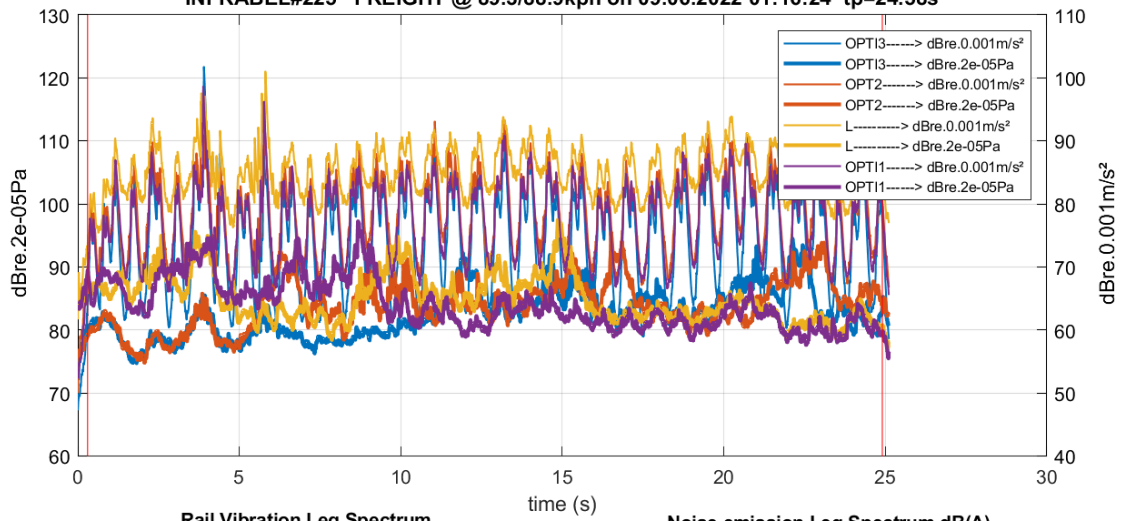


INFRABEL#223 FREIGHT @ 100/101kph on 09.06.2022 00:14:02 tp=22.595s

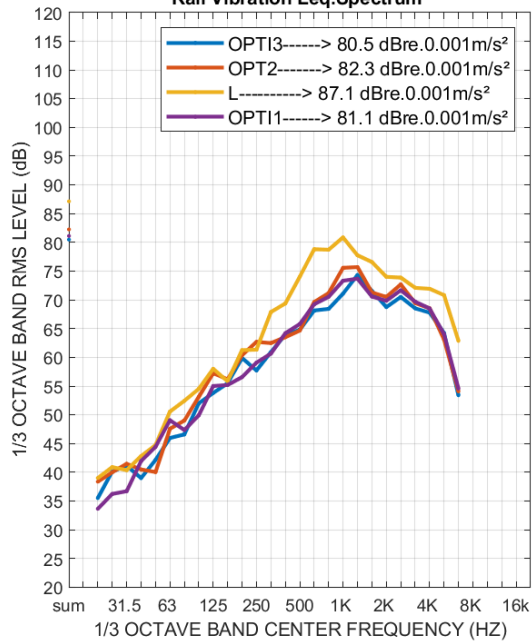




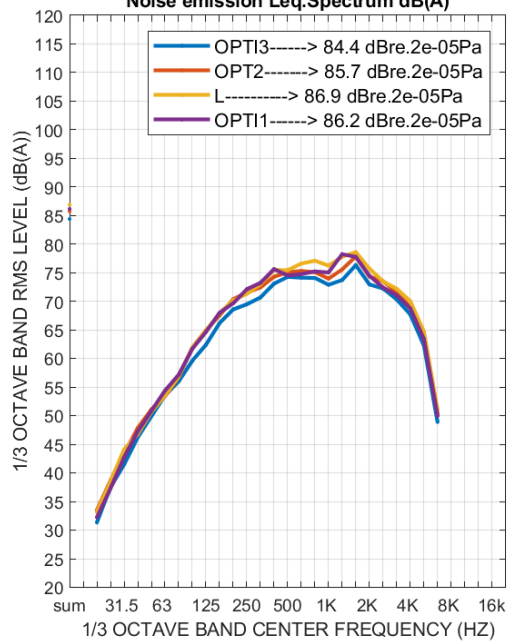
INFRABEL#225 FREIGHT @ 89.3/88.9kph on 09.06.2022 01:16:24 tp=24.58s

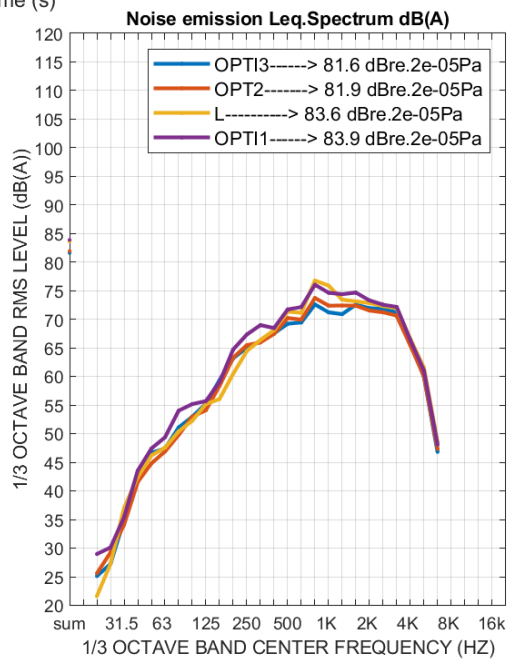
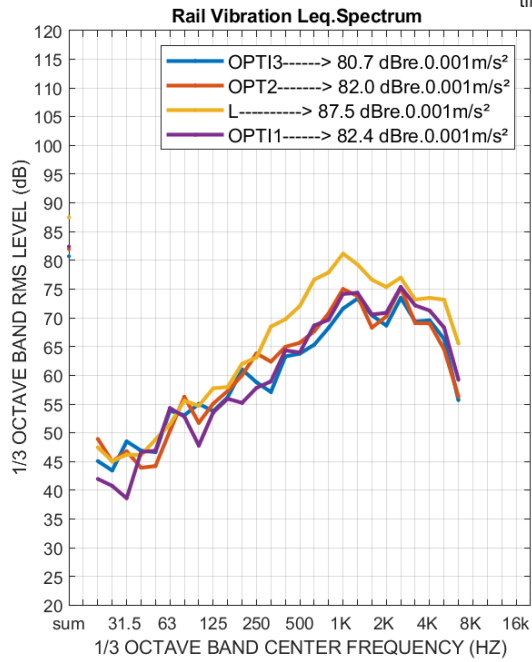
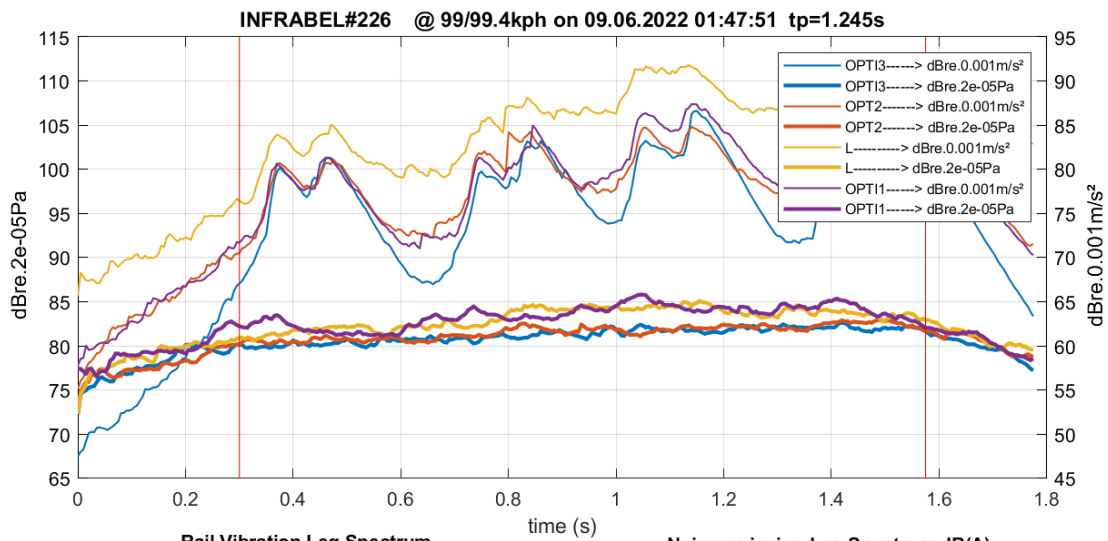


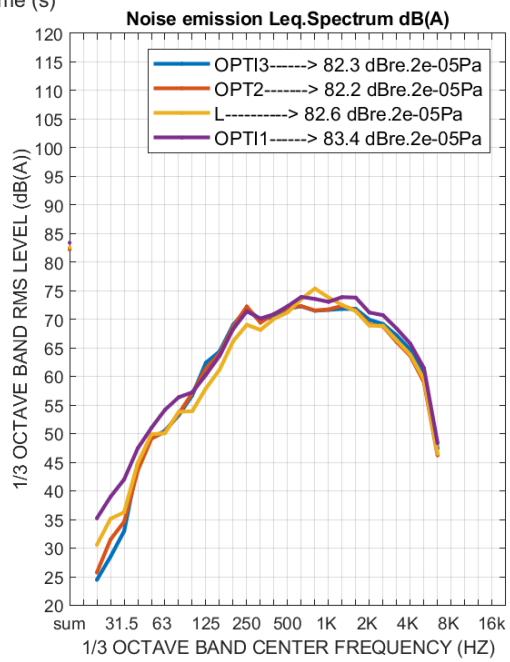
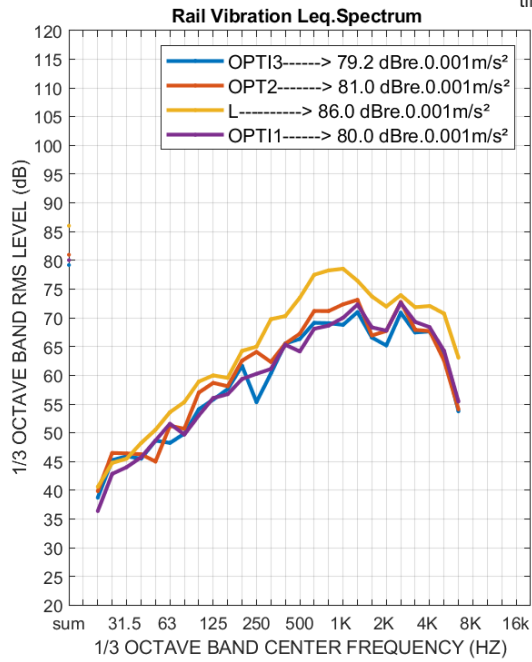
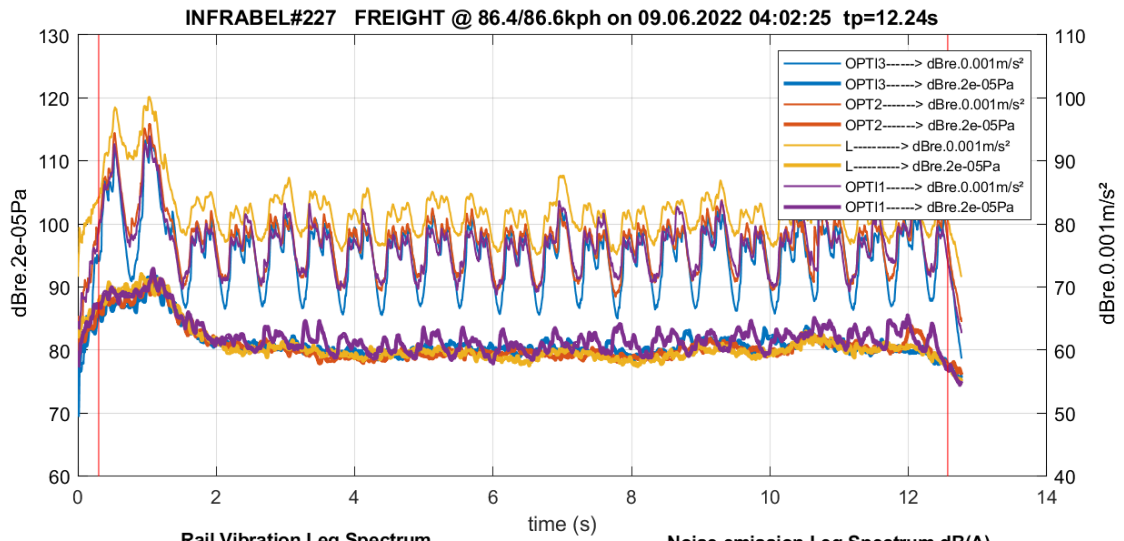
Rail Vibration Leq.Spectrum

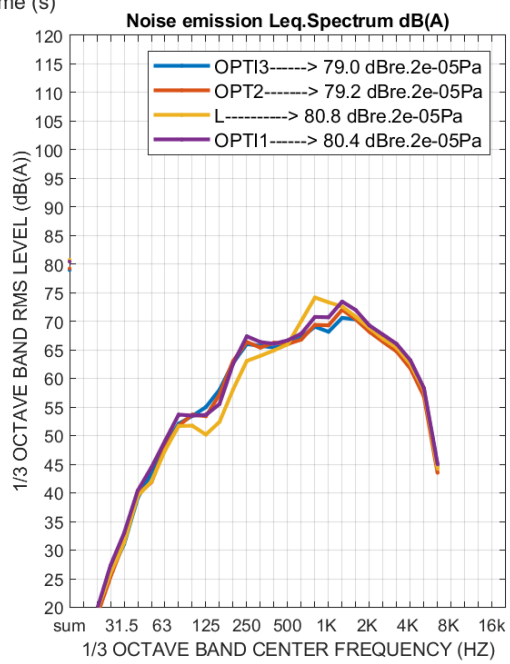
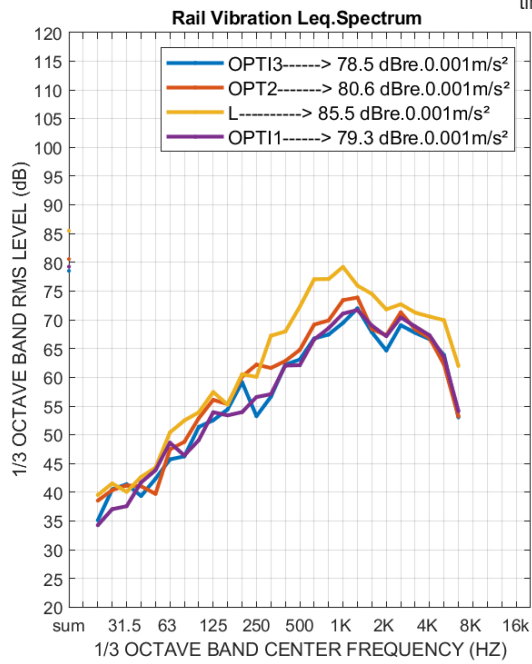
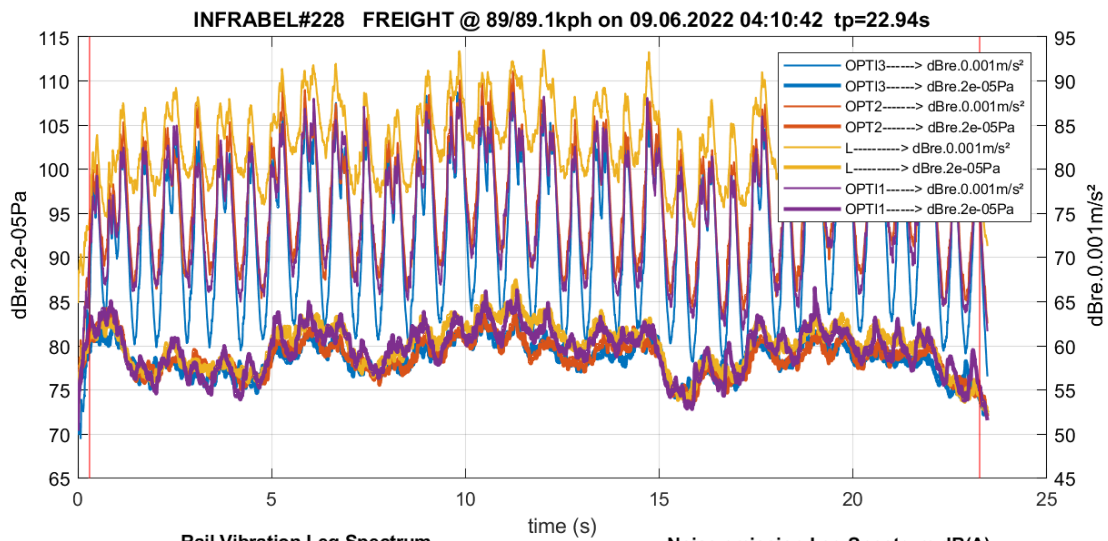


Noise emission Leq.Spectrum dB(A)

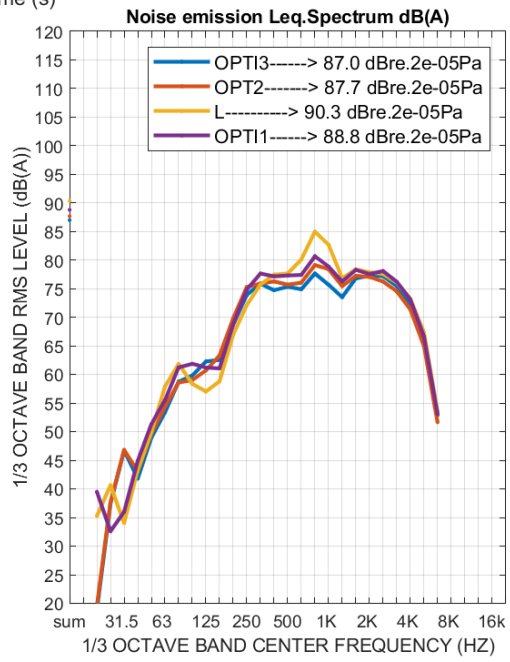
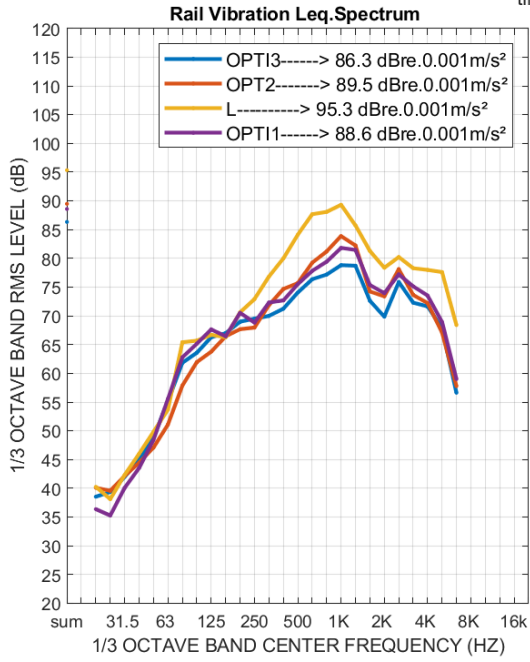
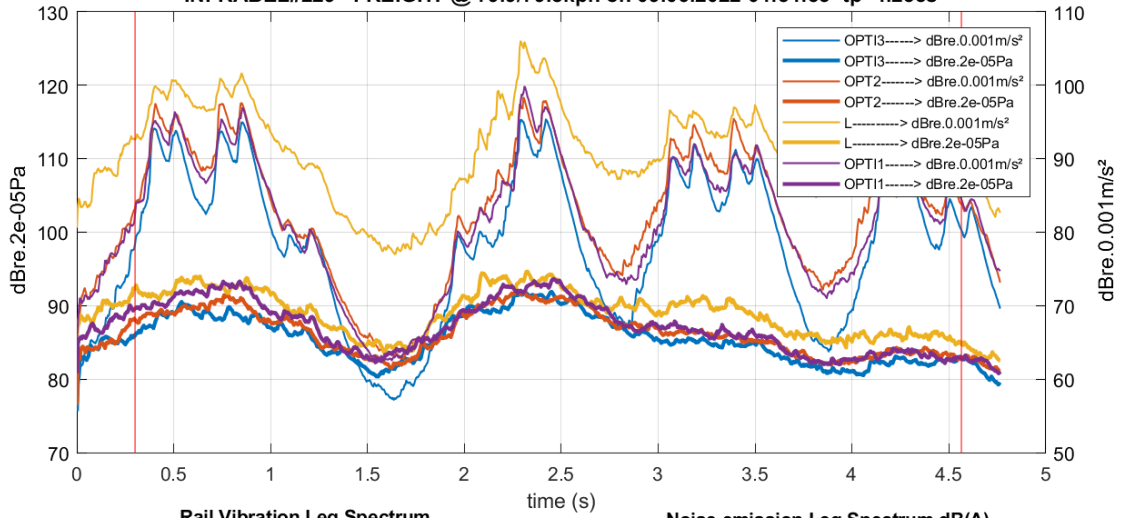




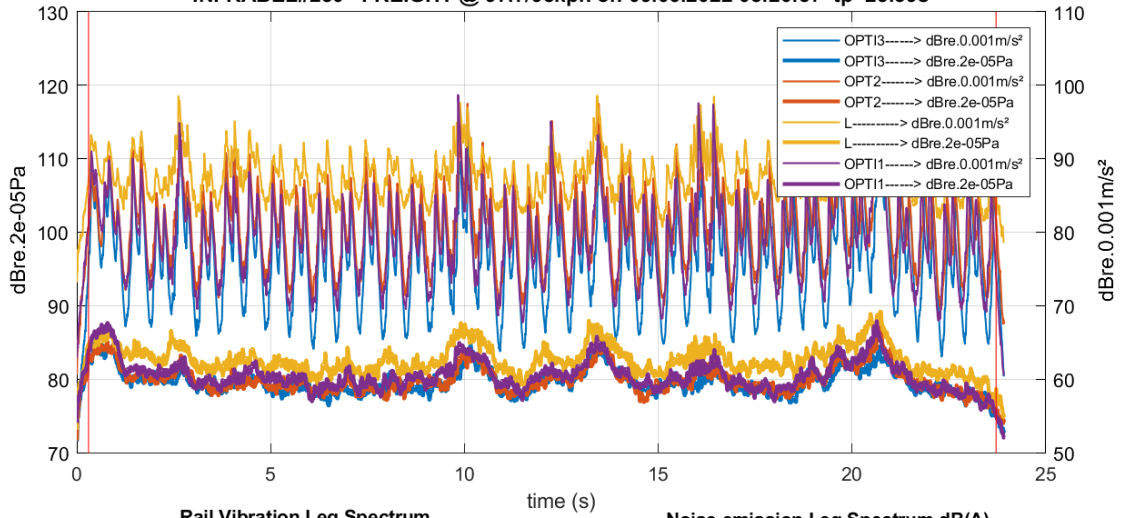




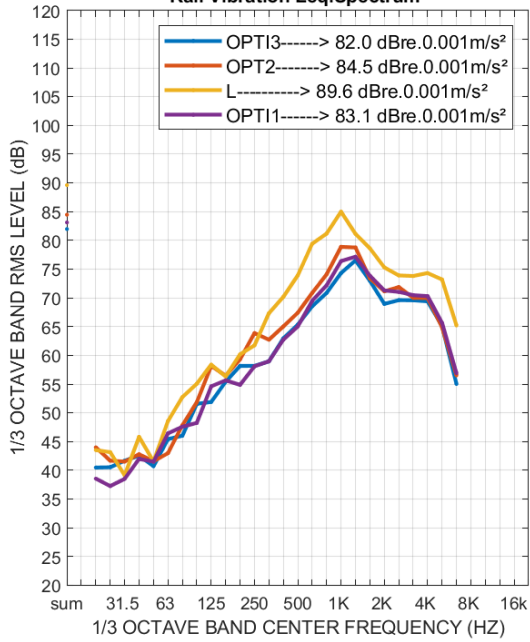
INFRABEL#229 FREIGHT @ 79.9/79.8kph on 09.06.2022 04:54:33 tp=4.235s



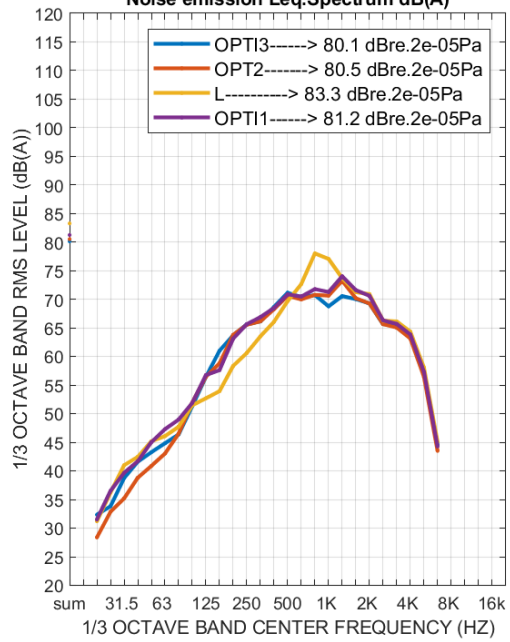
INFRABEL#230 FREIGHT @ 97.7/98kph on 09.06.2022 05:20:57 tp=23.39s

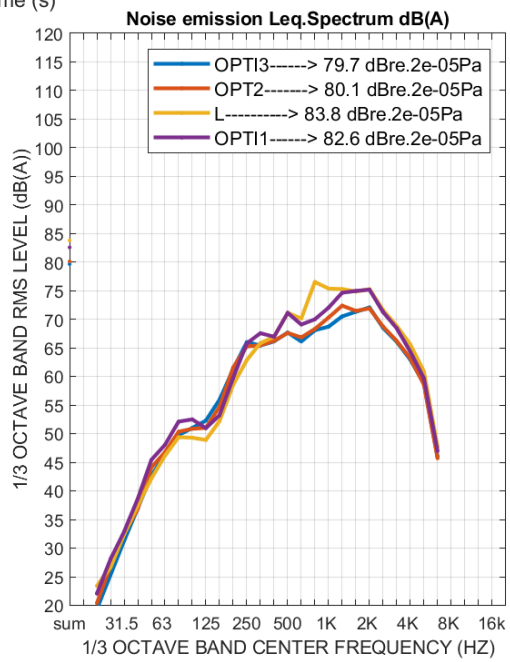
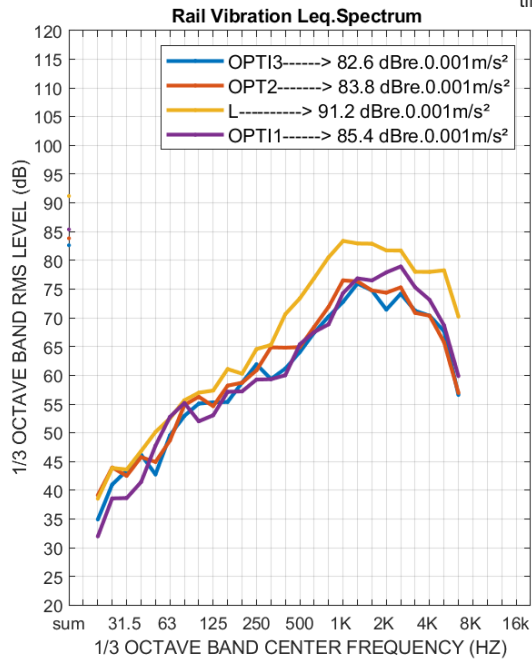
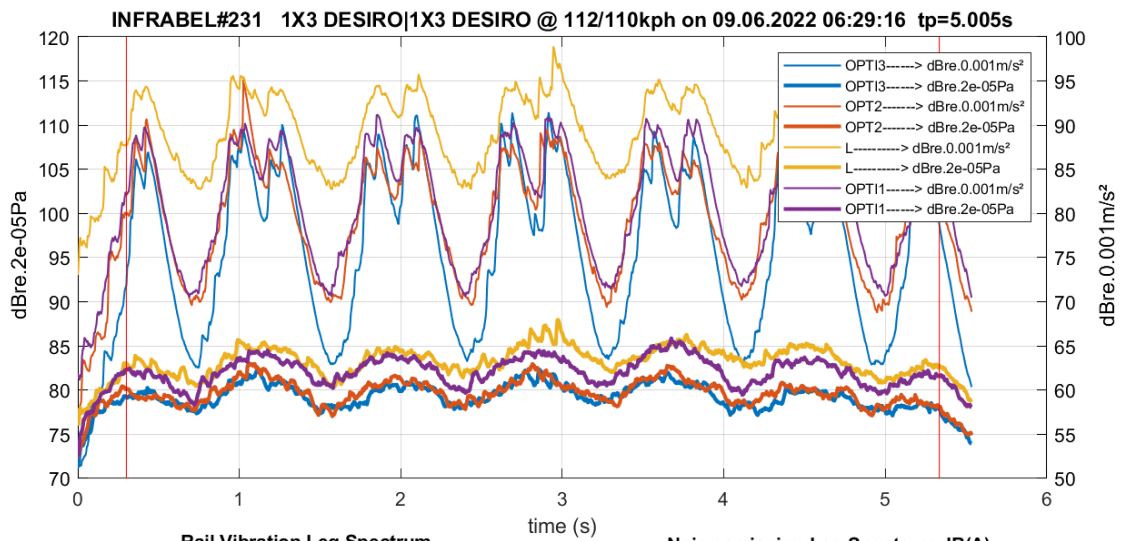


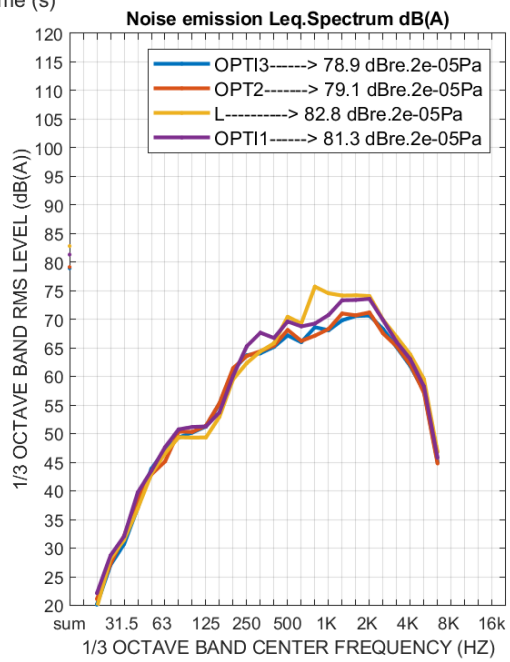
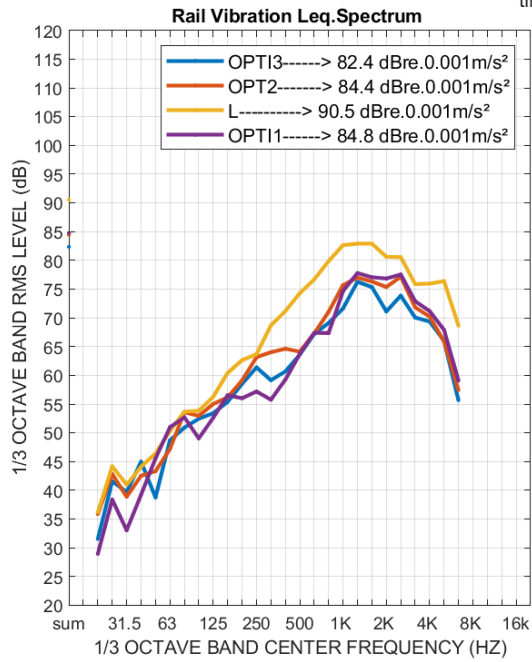
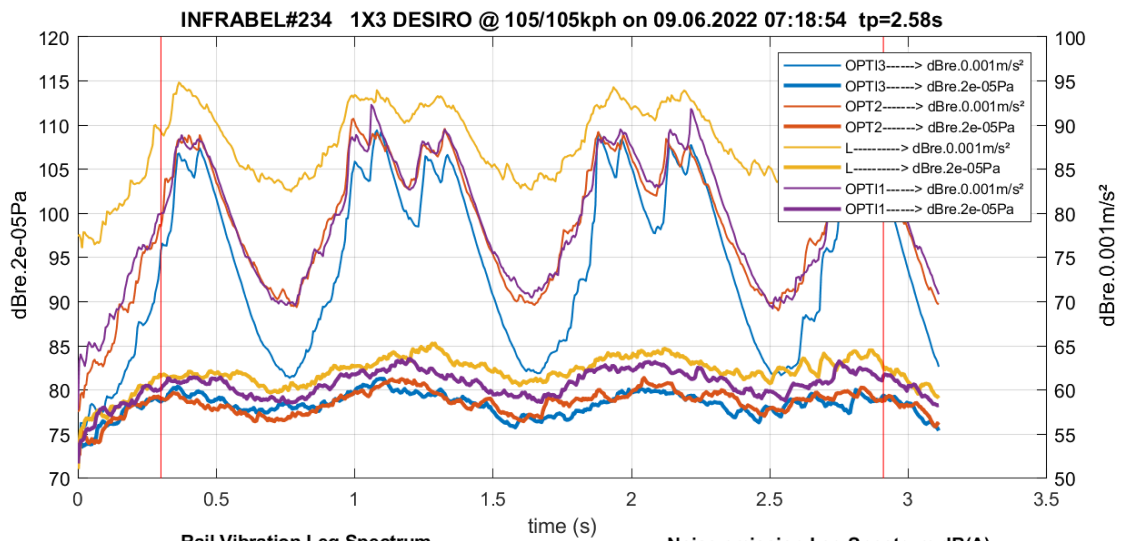
Rail Vibration Leq.Spectrum

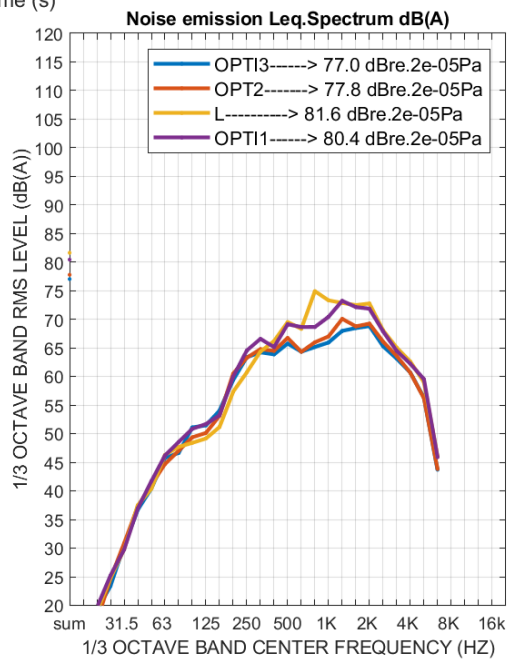
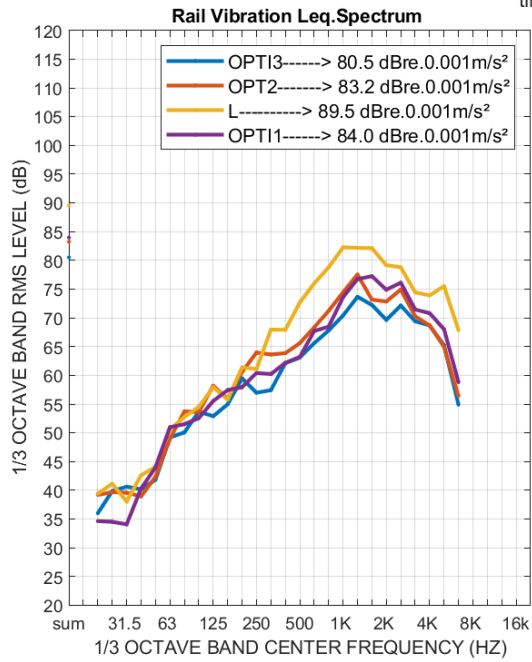
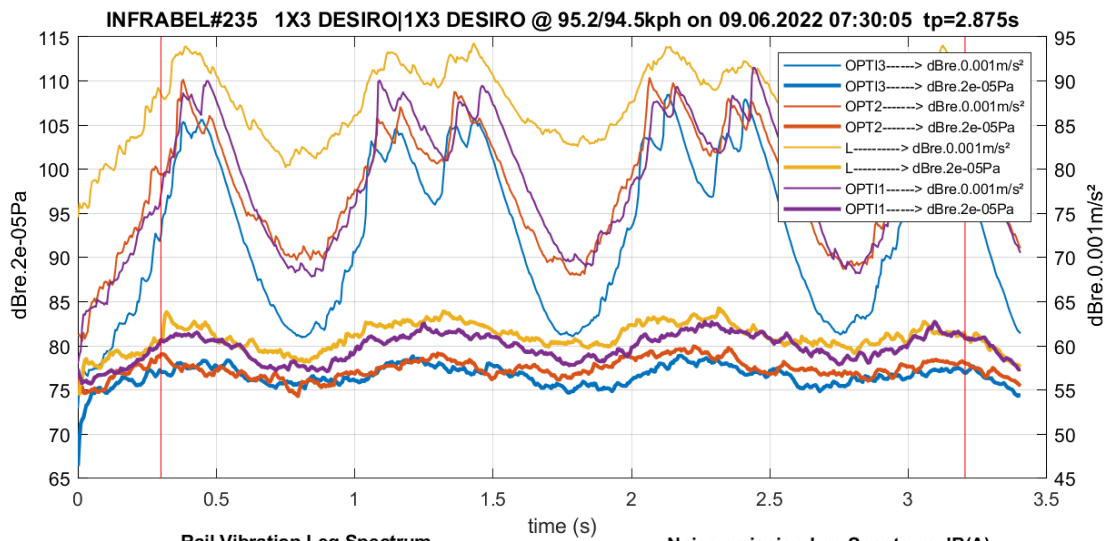


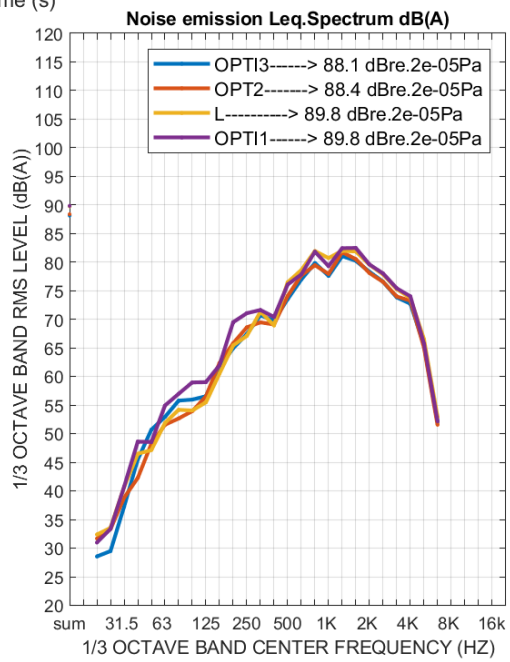
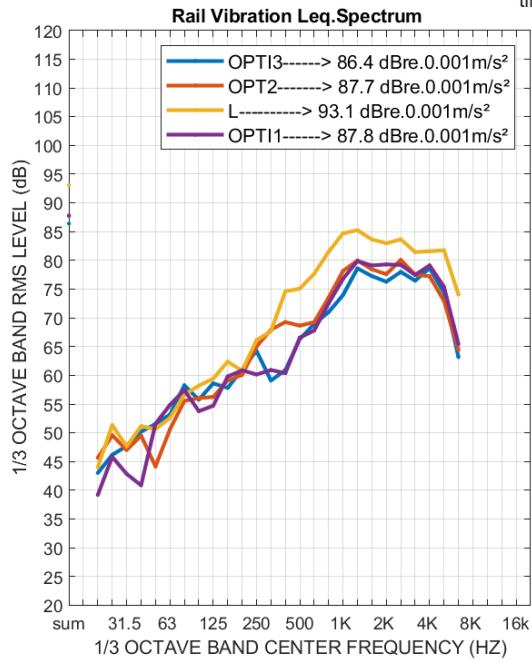
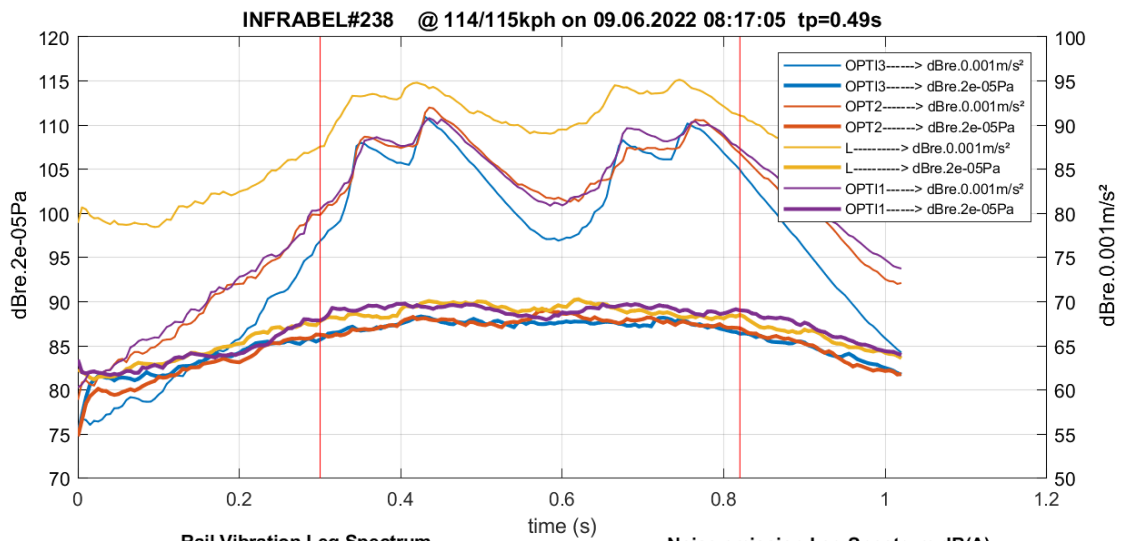
Noise emission Leq.Spectrum dB(A)



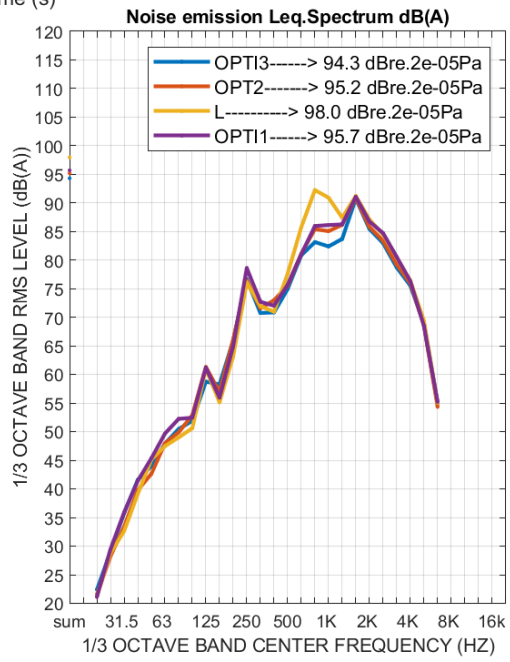
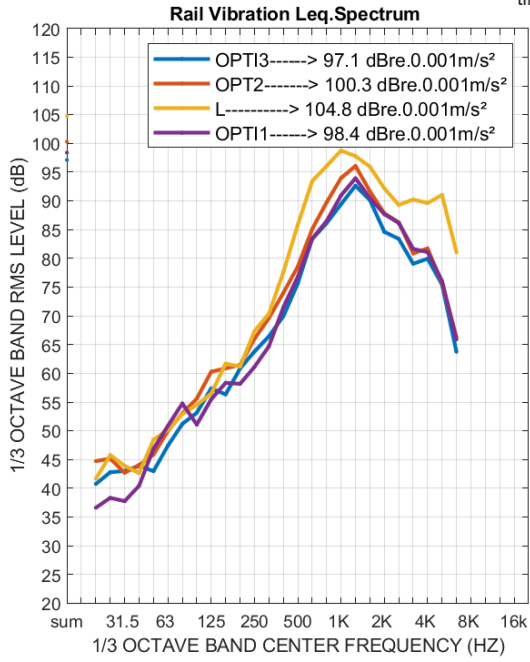
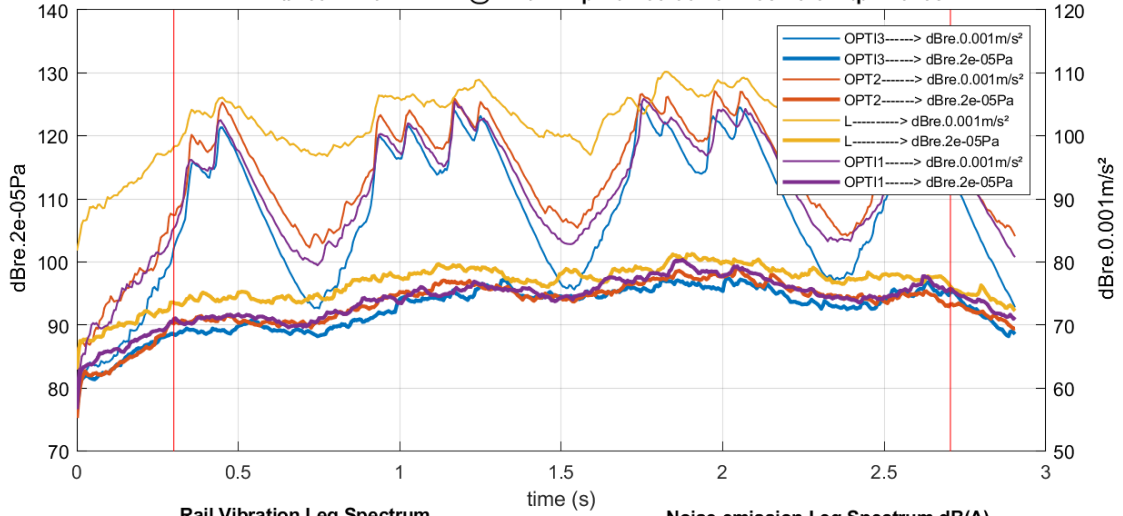


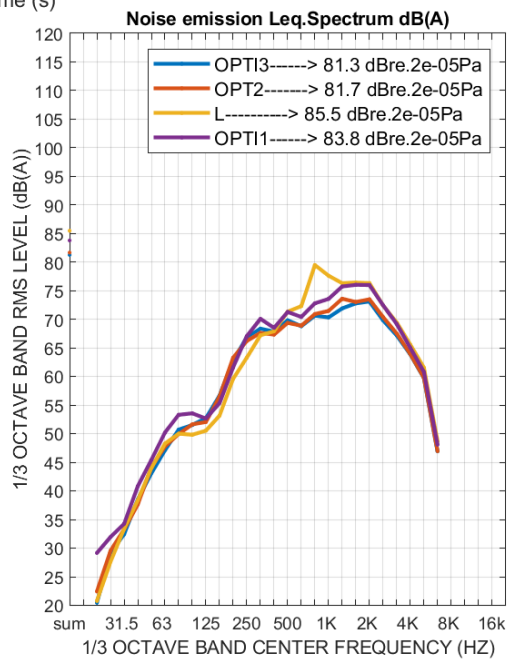
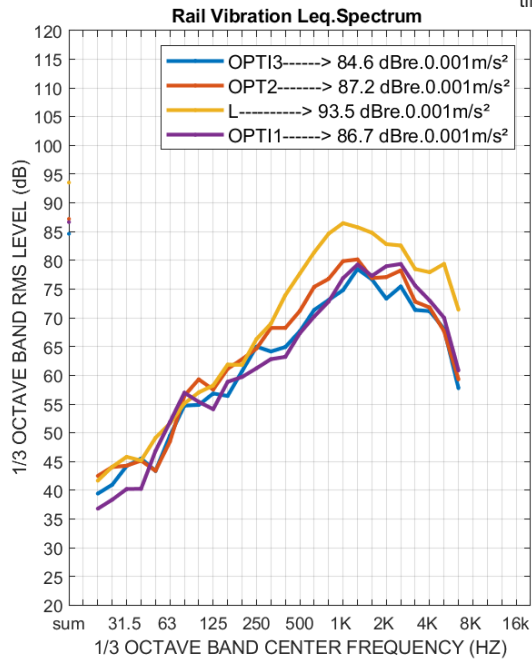
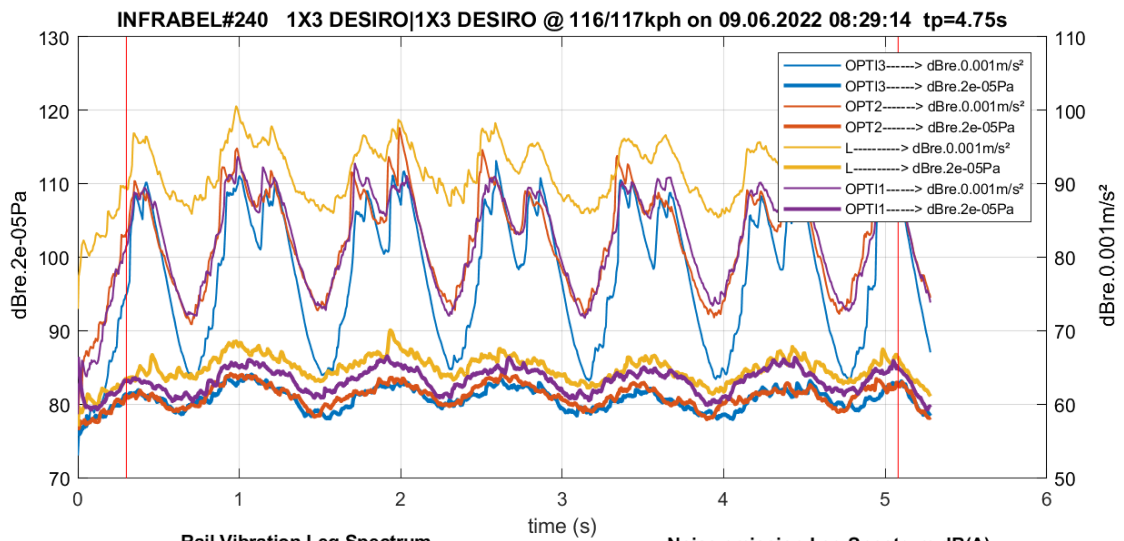


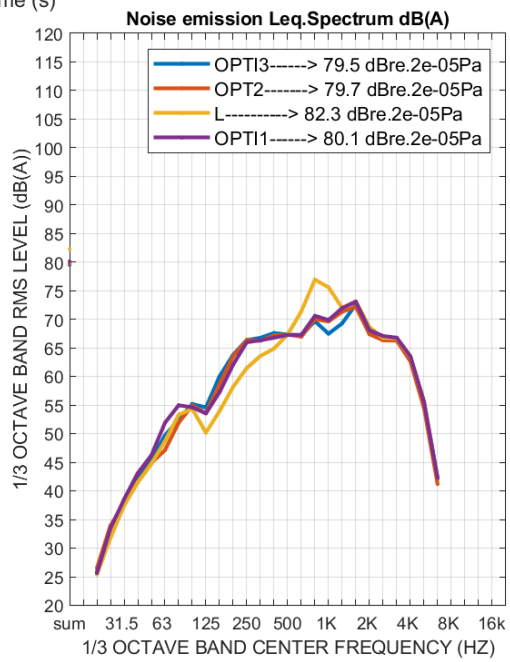
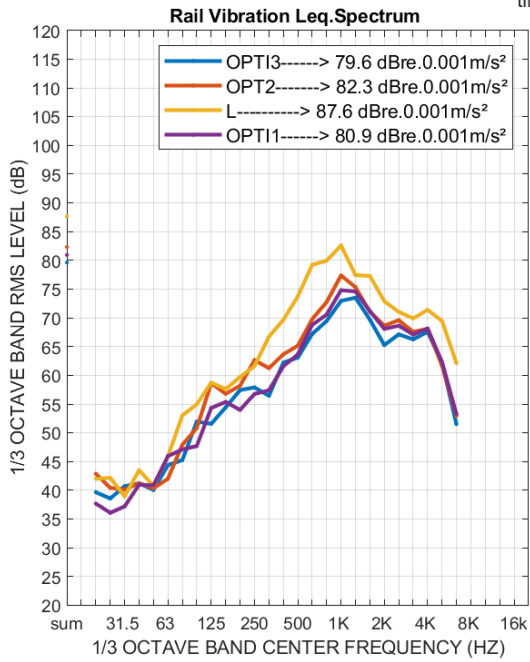
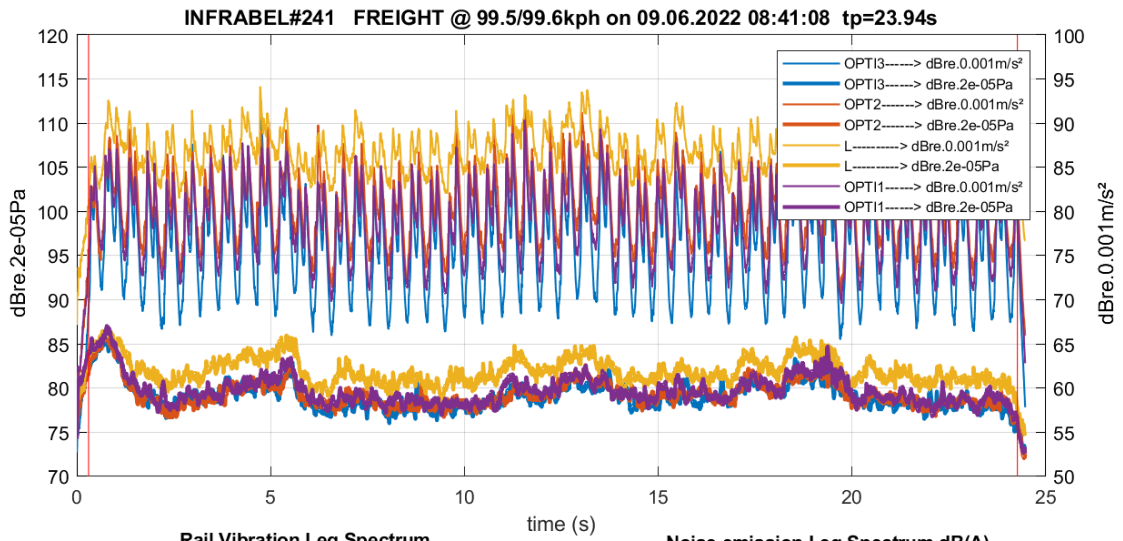


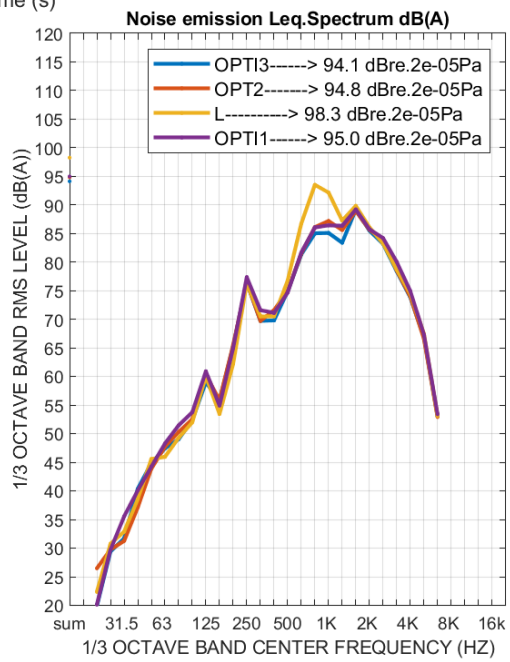
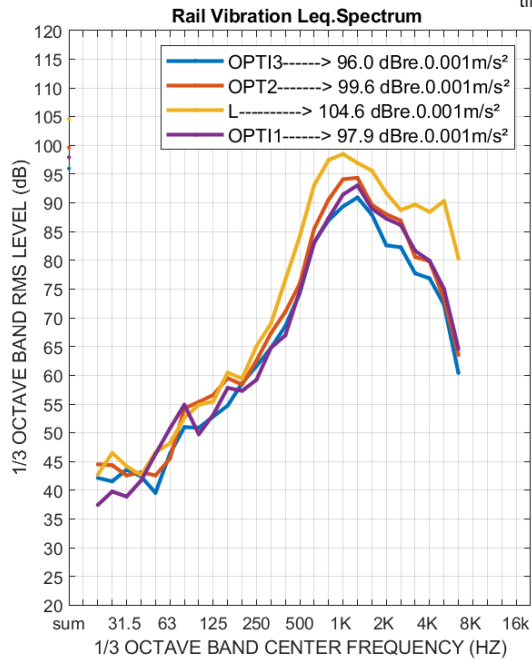
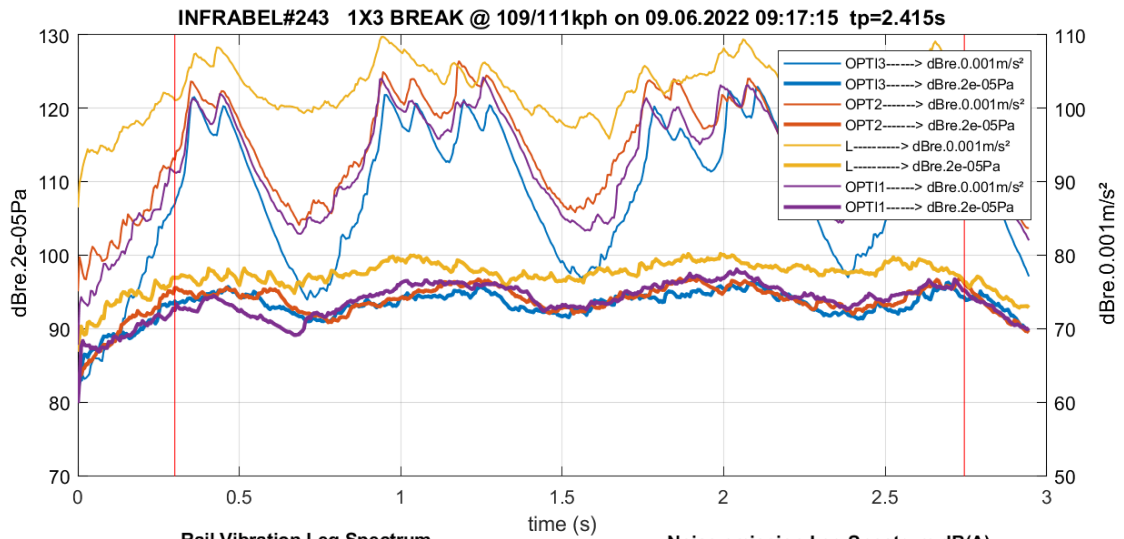


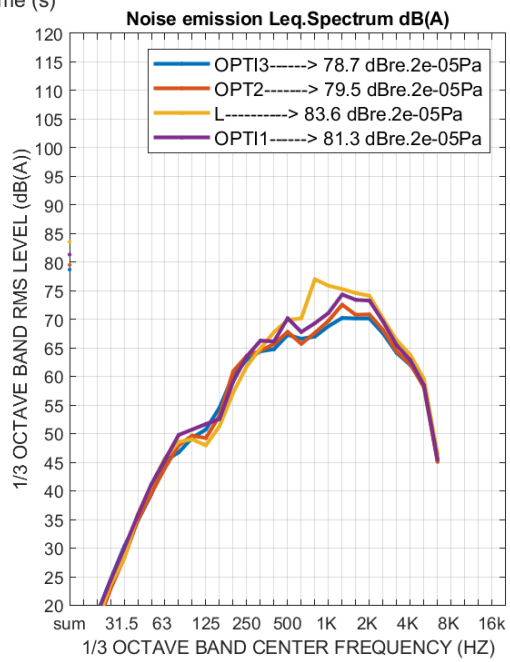
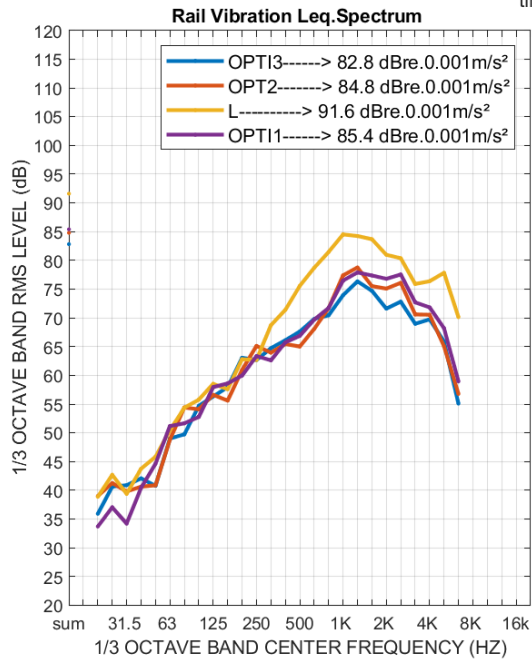
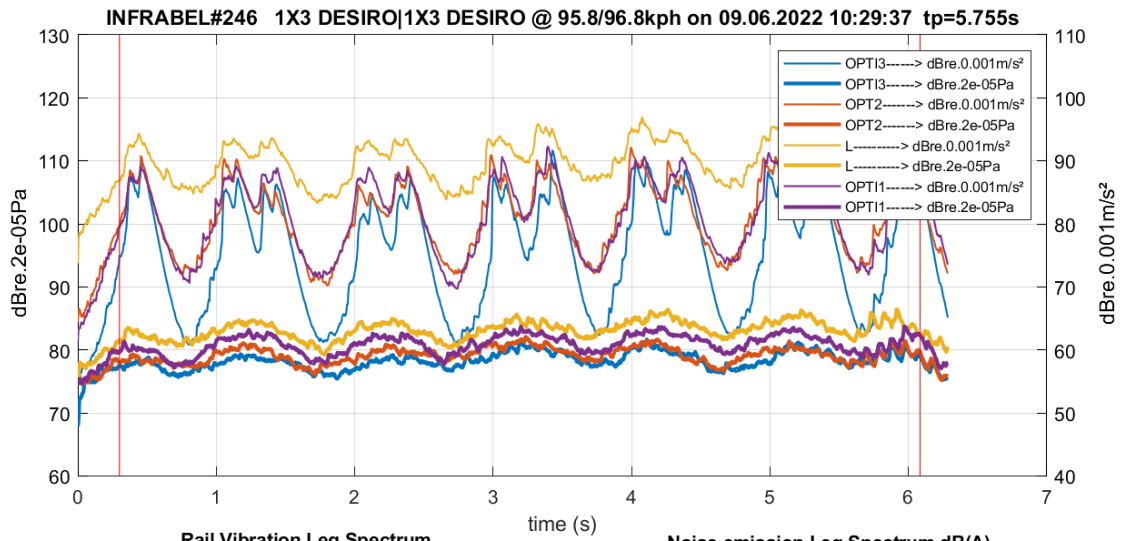
INFRABEL#239 1X3 BREAK @ 112/111kph on 09.06.2022 08:19:54 tp=2.375s

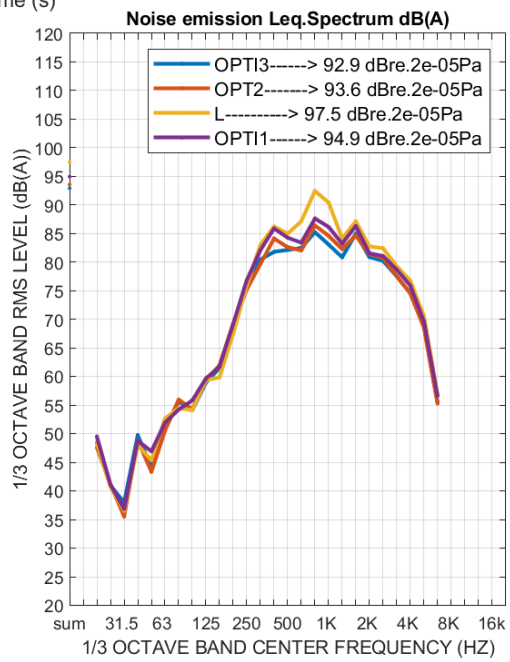
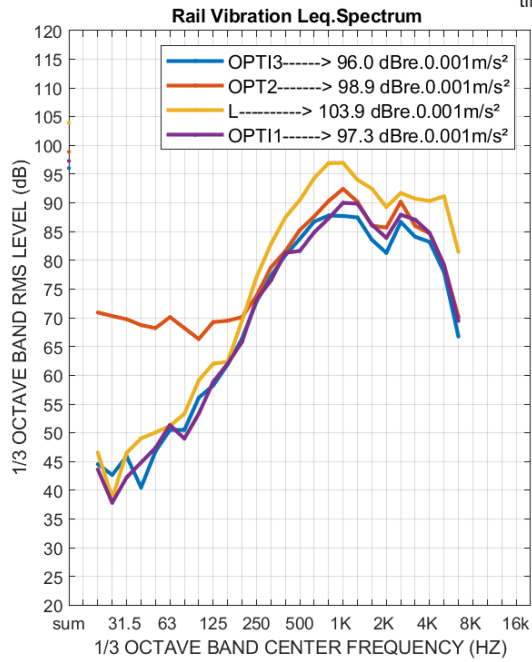
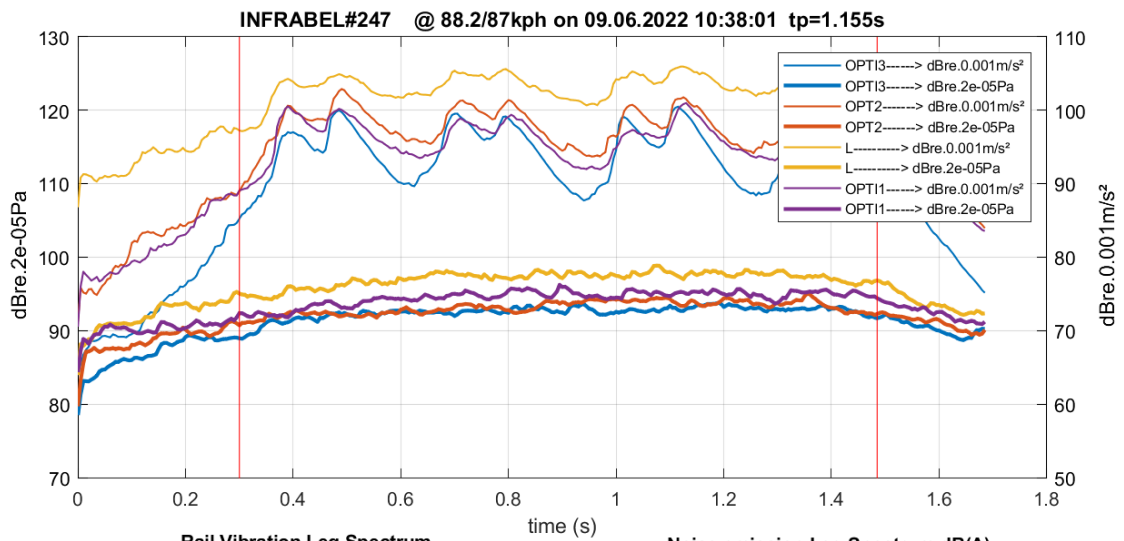


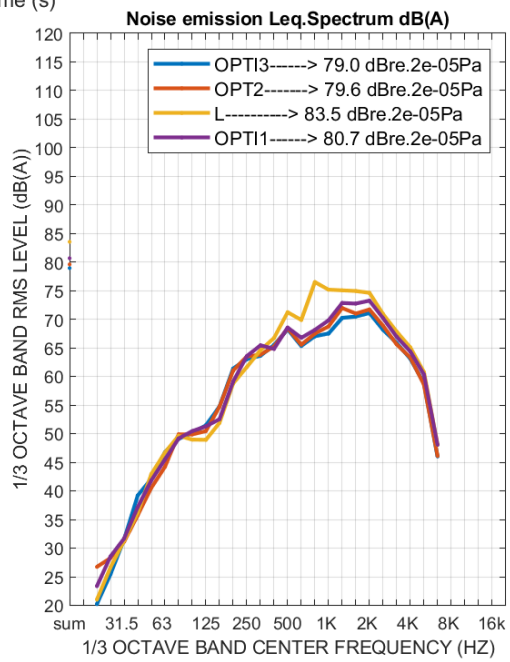
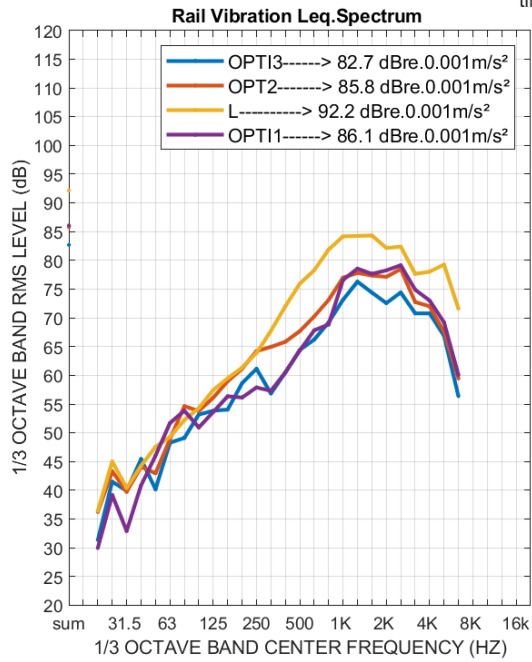
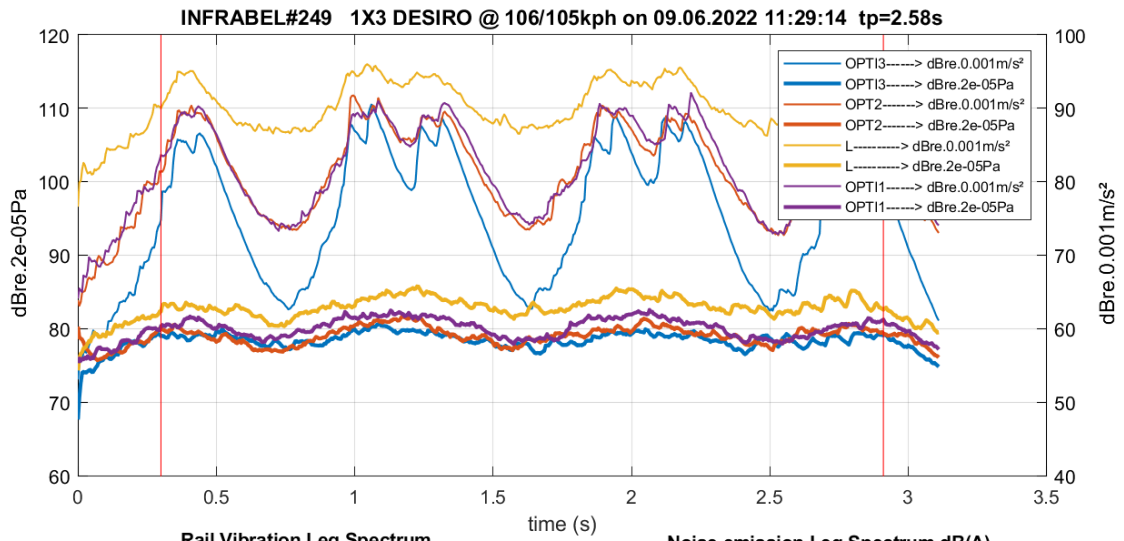


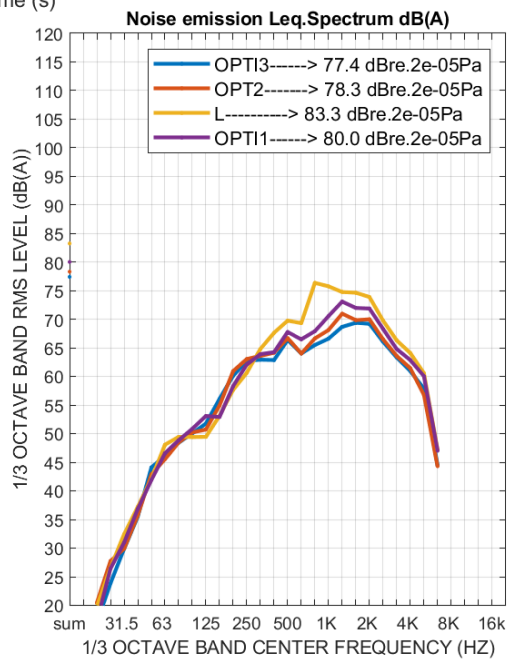
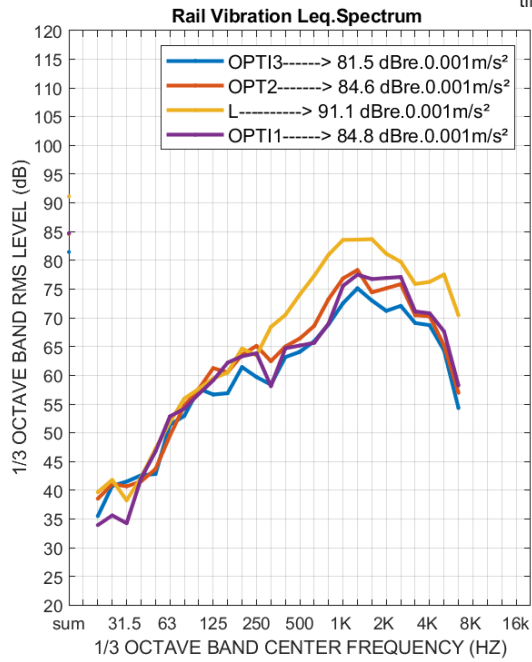
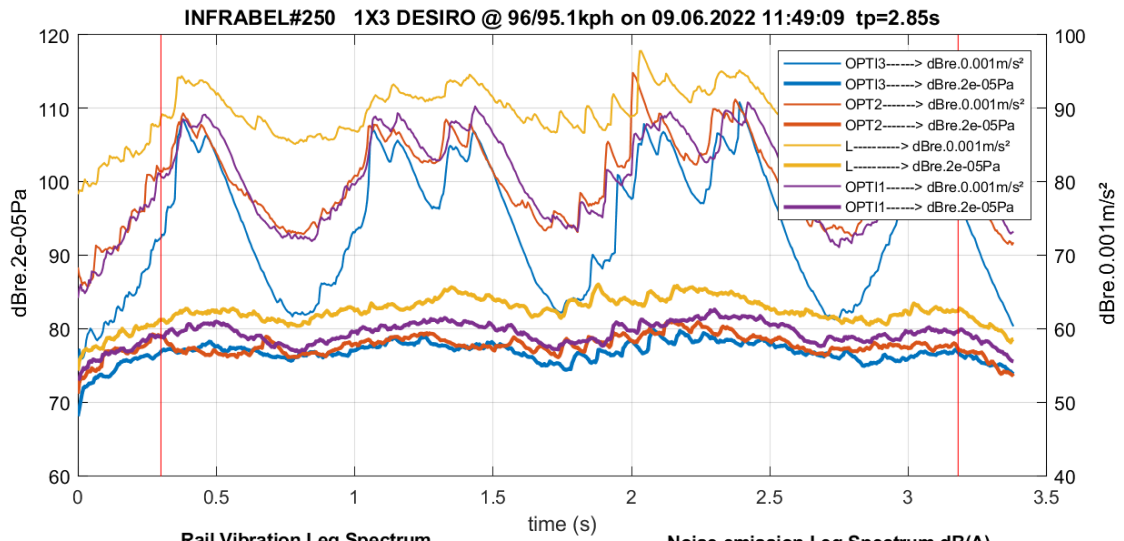


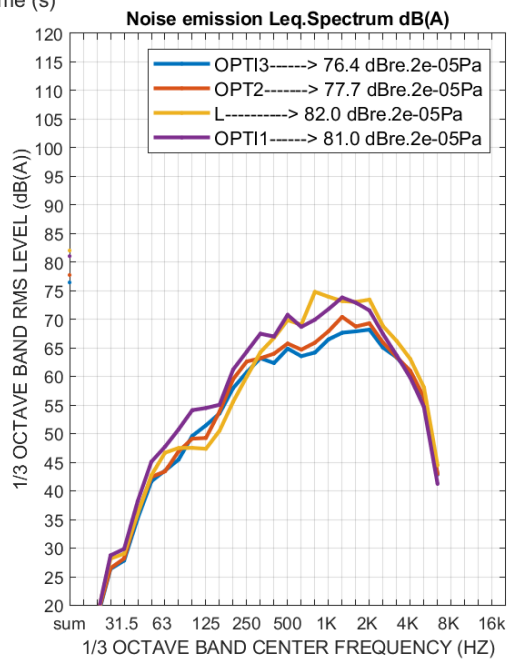
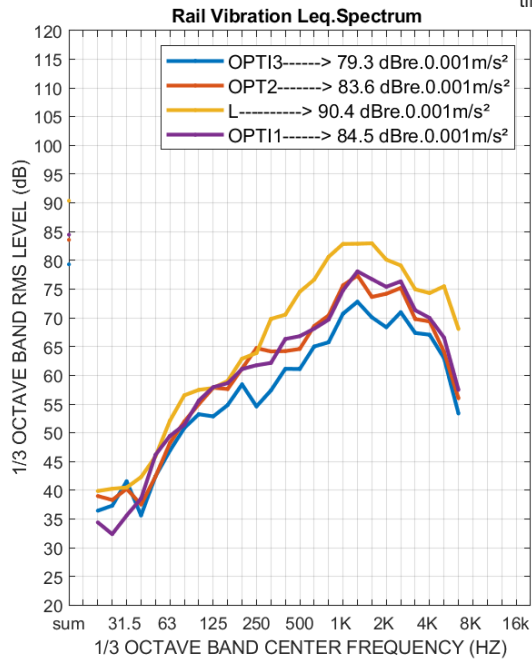
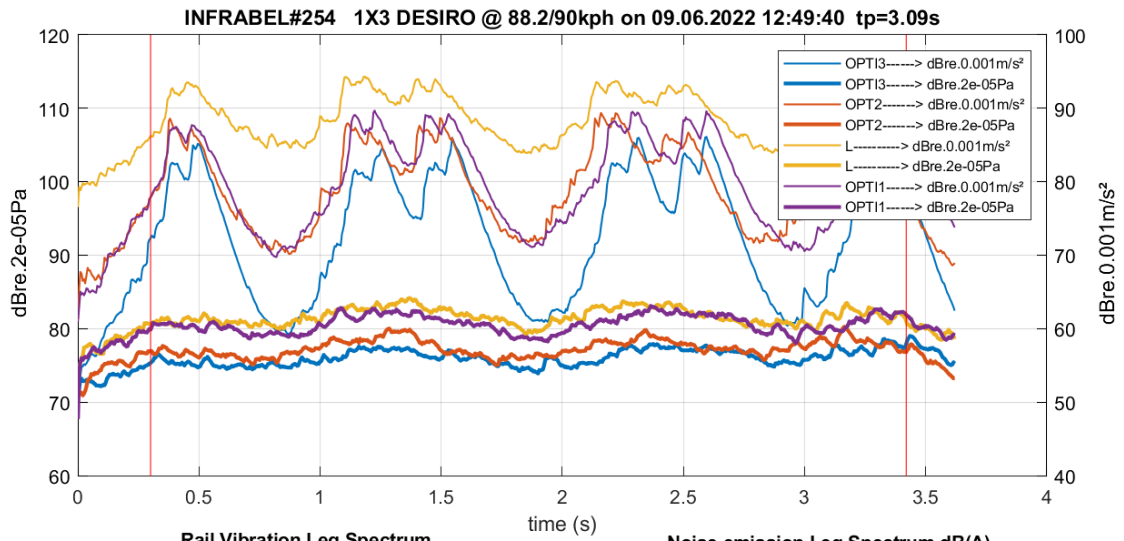


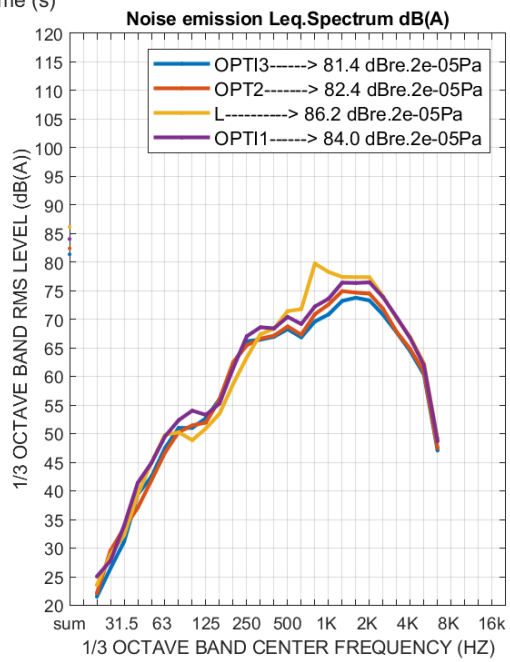
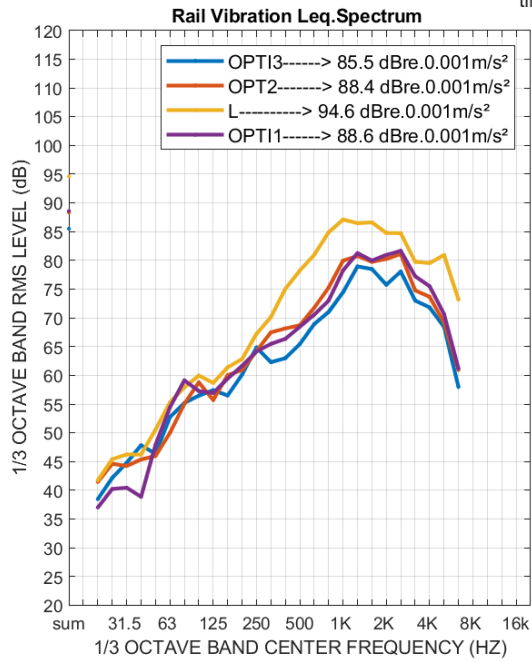
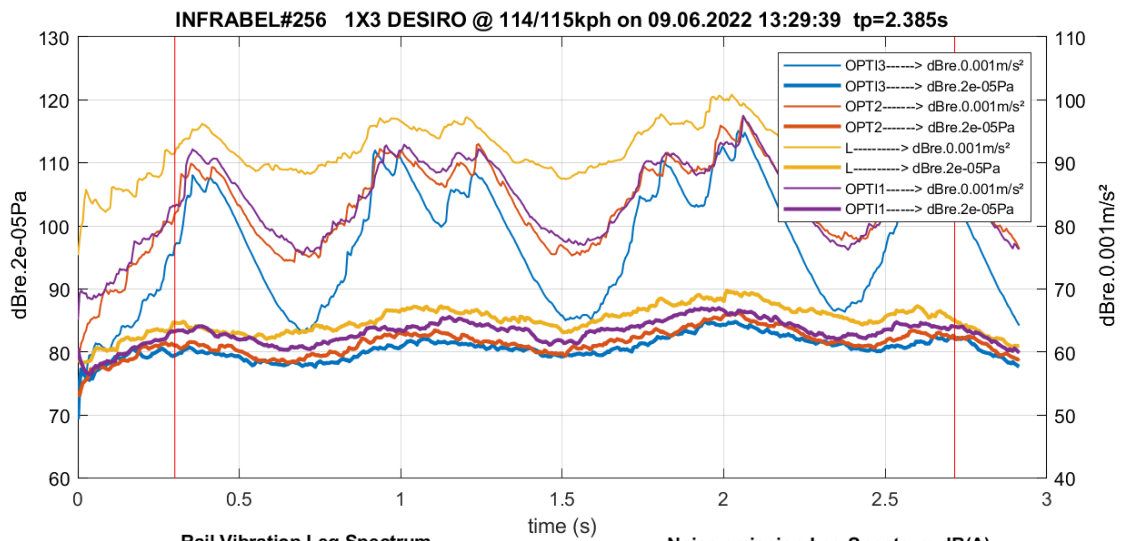


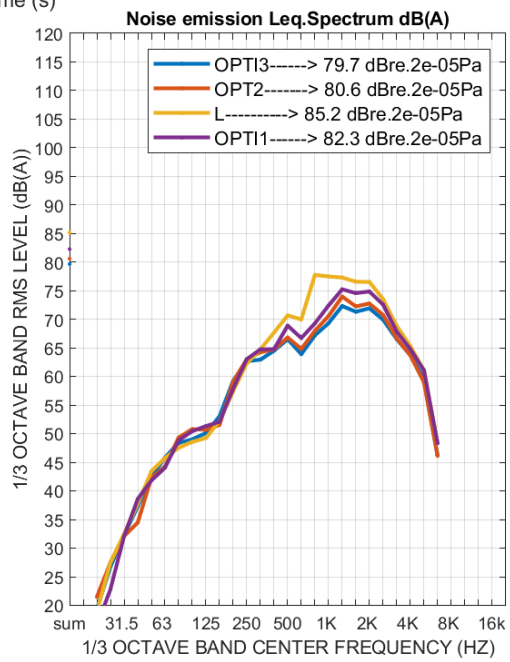
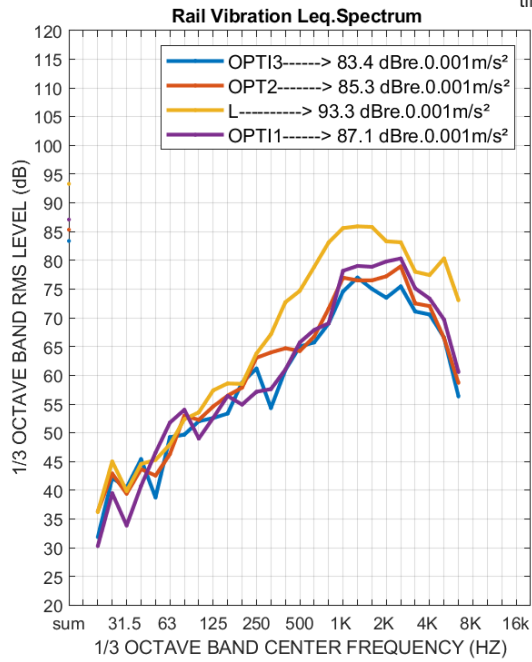
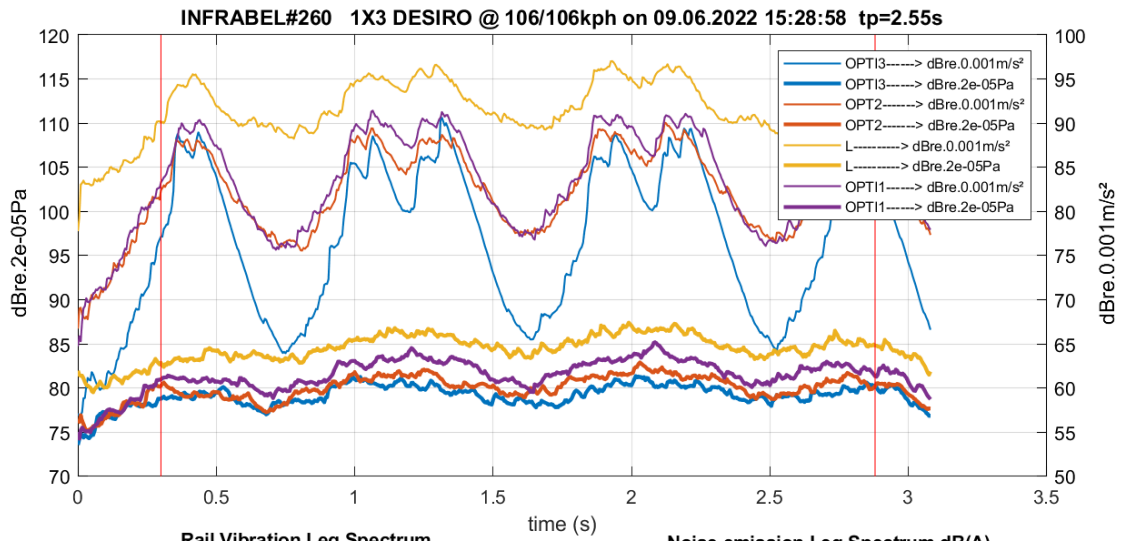


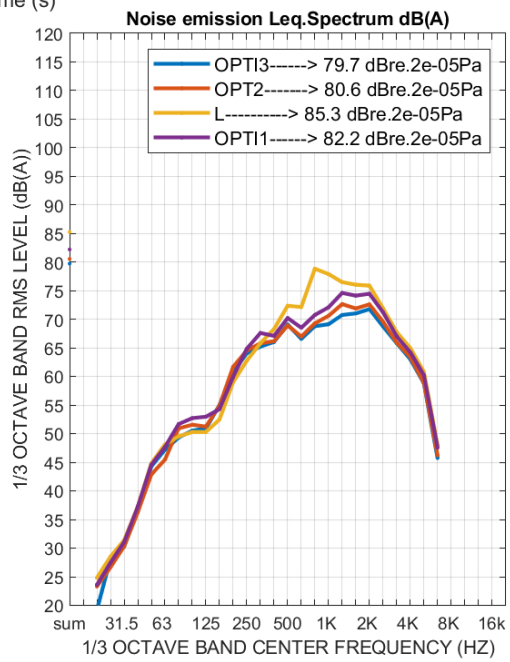
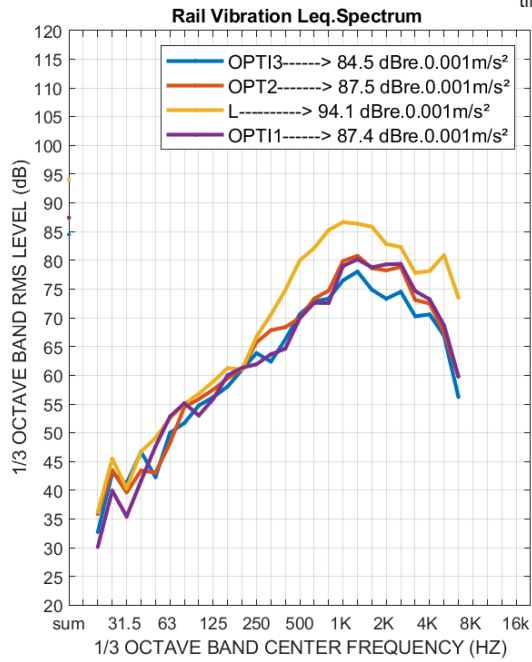
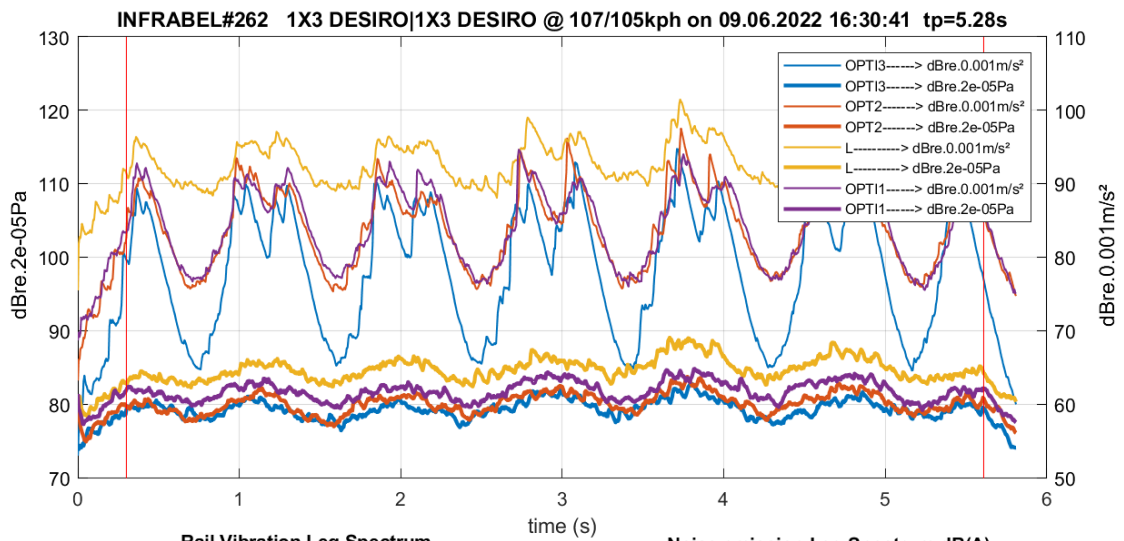


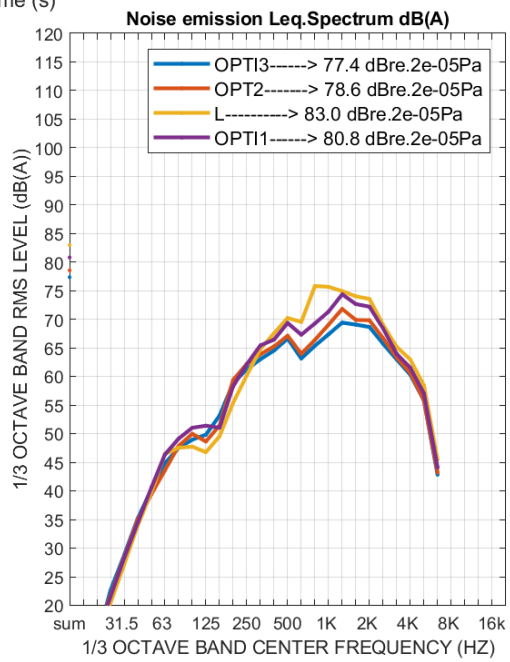
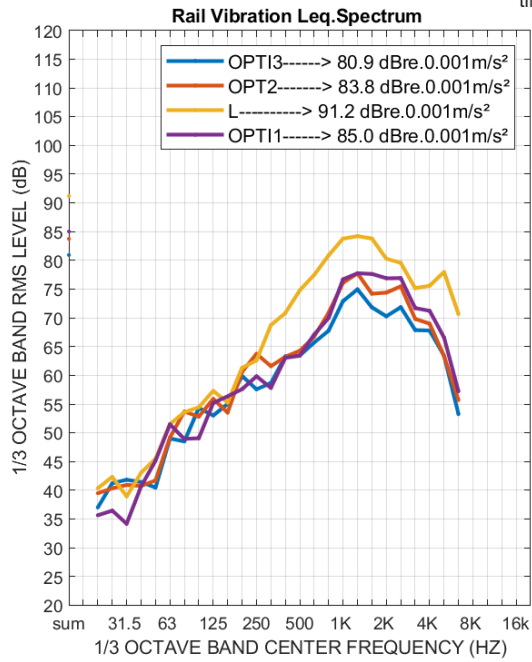
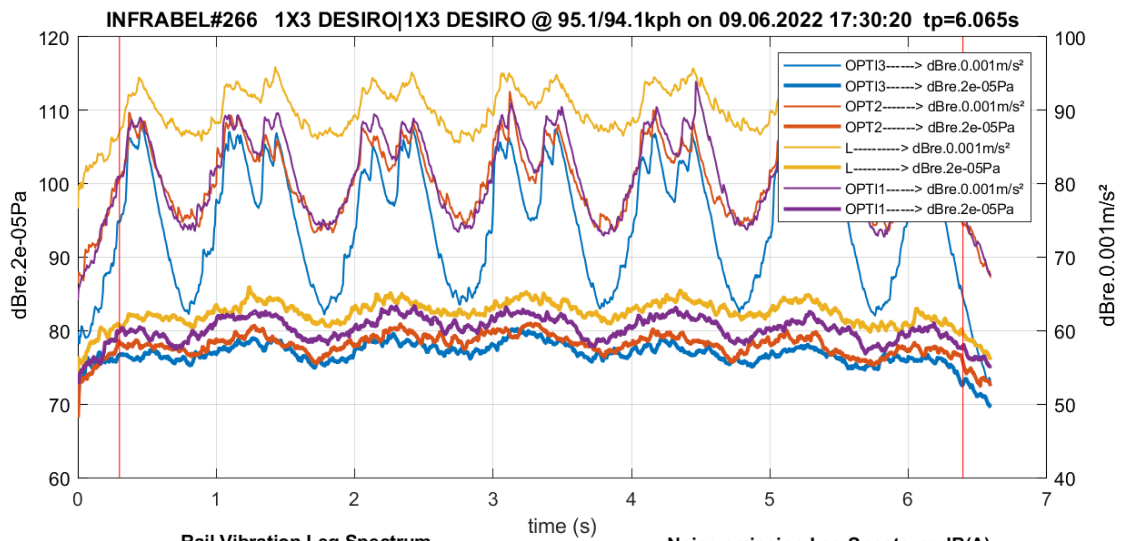


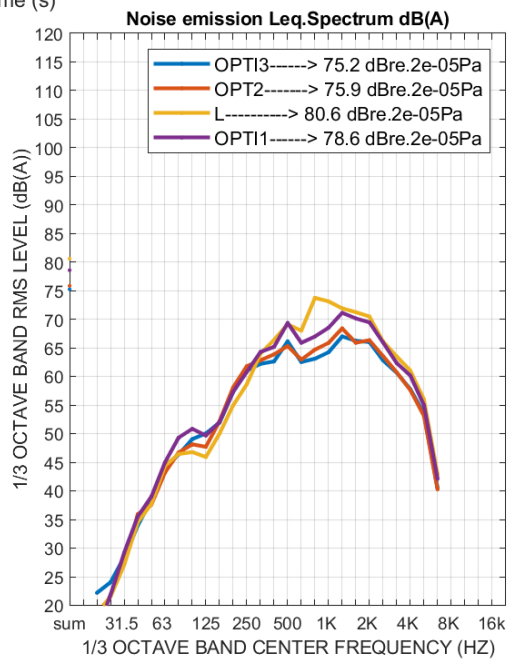
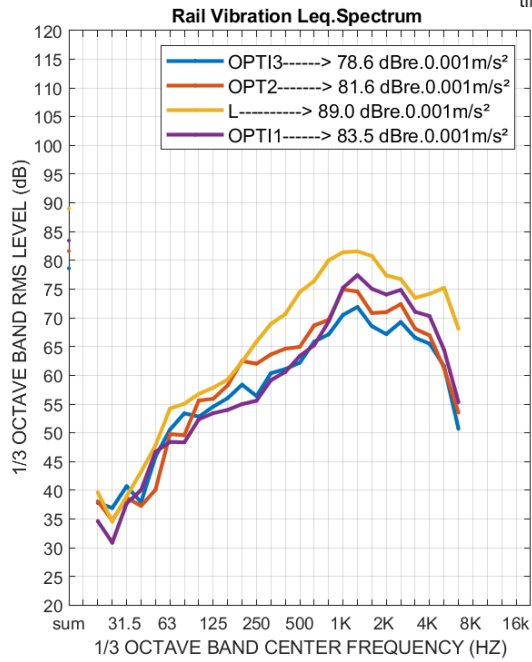
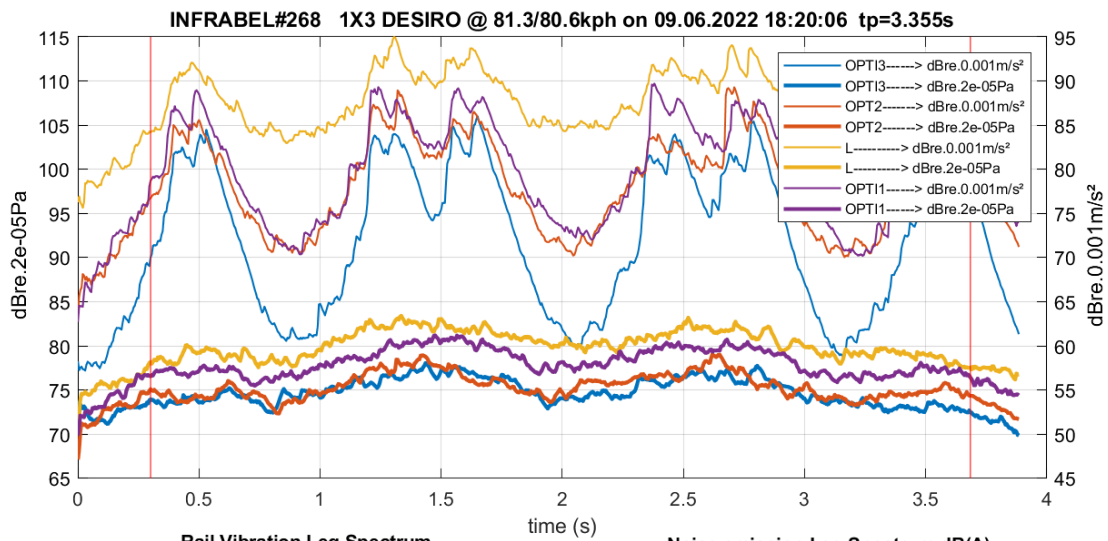


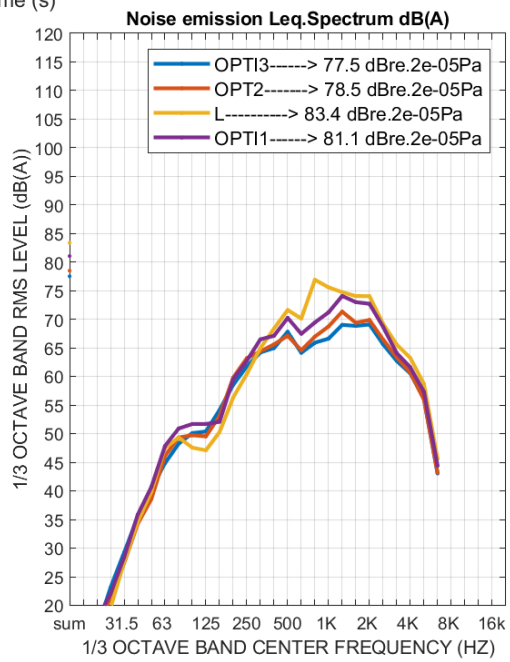
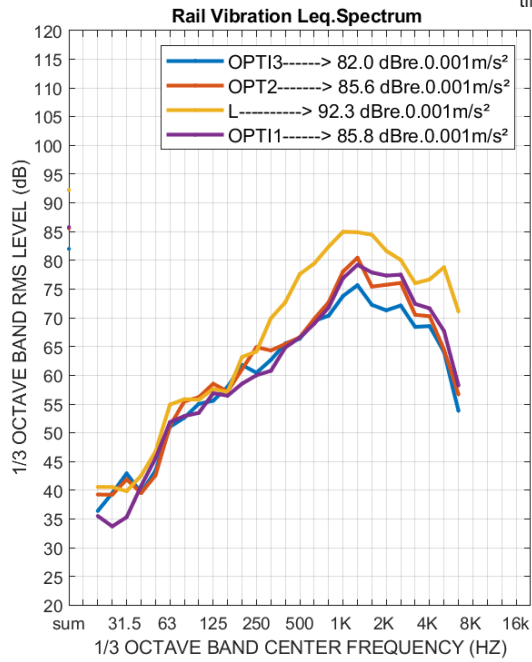
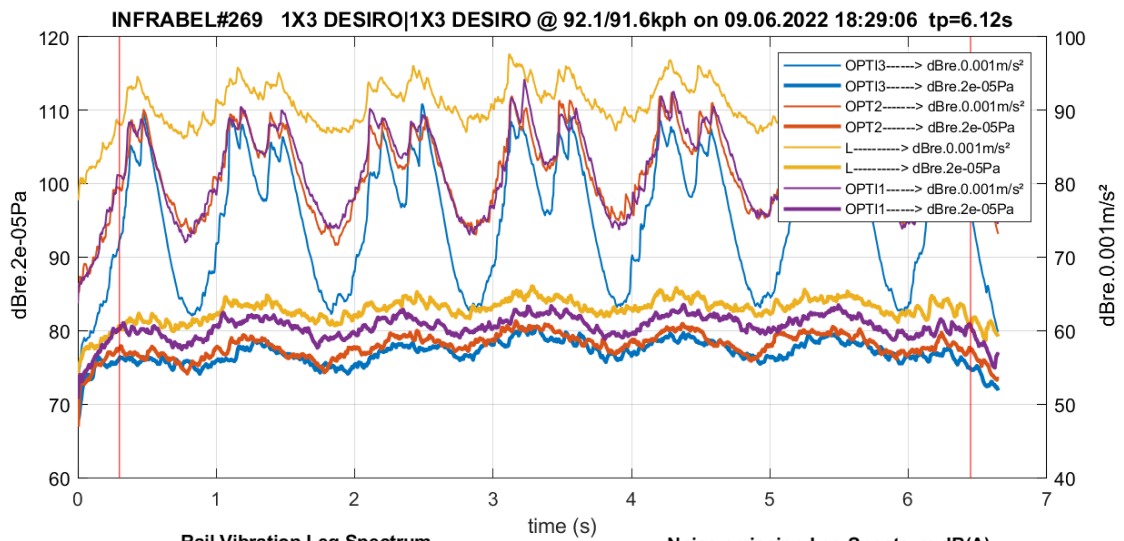


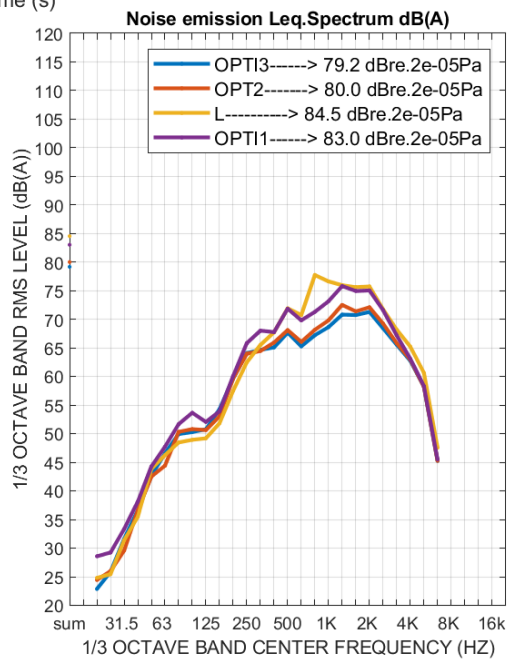
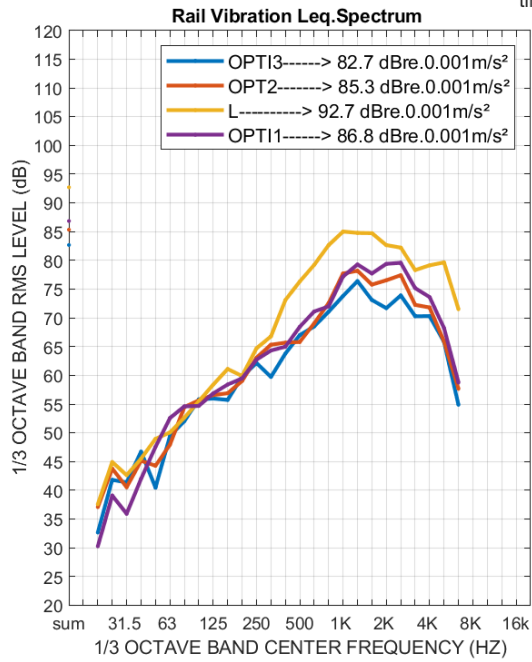
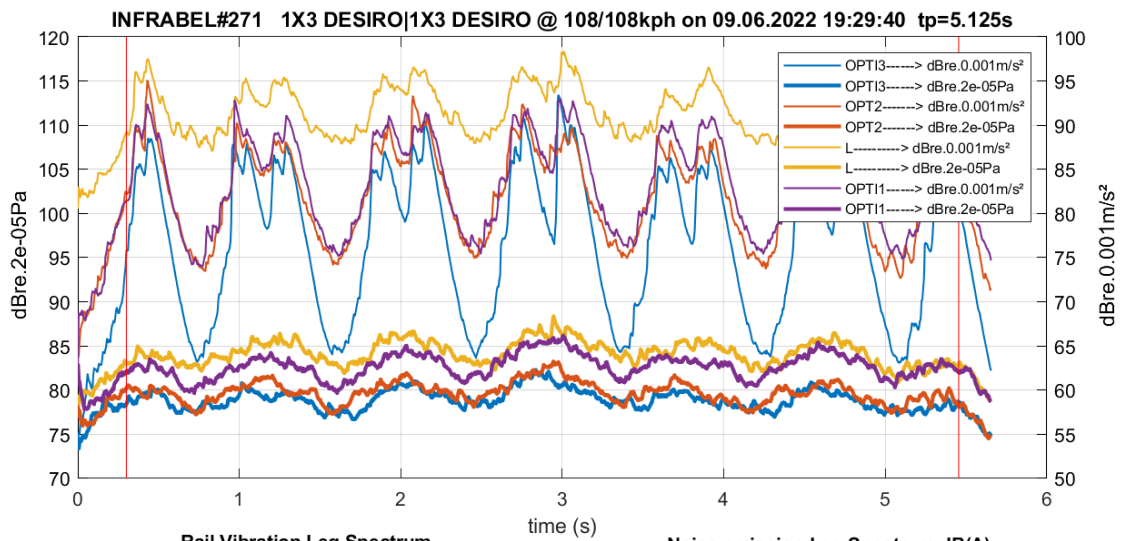


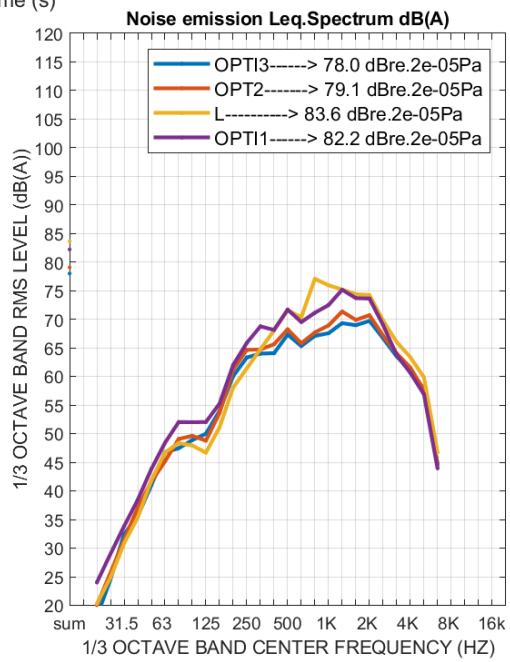
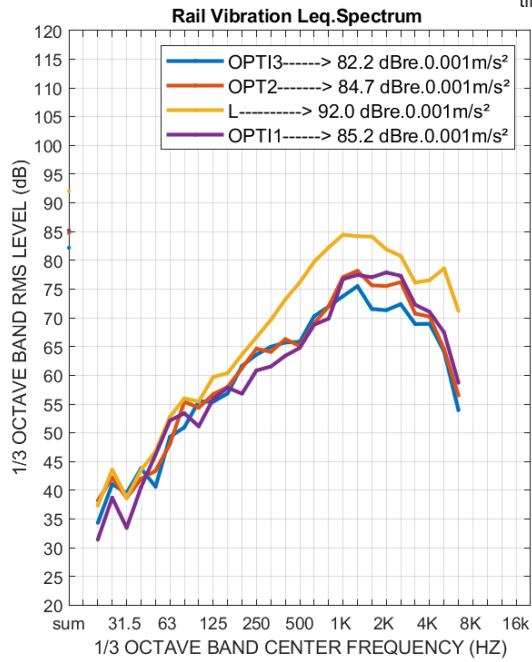
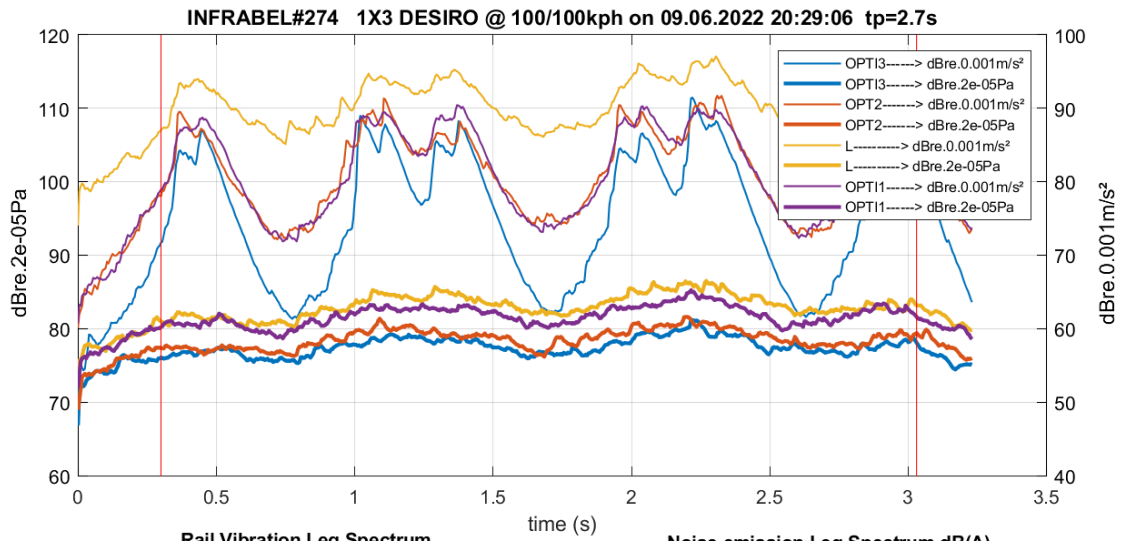


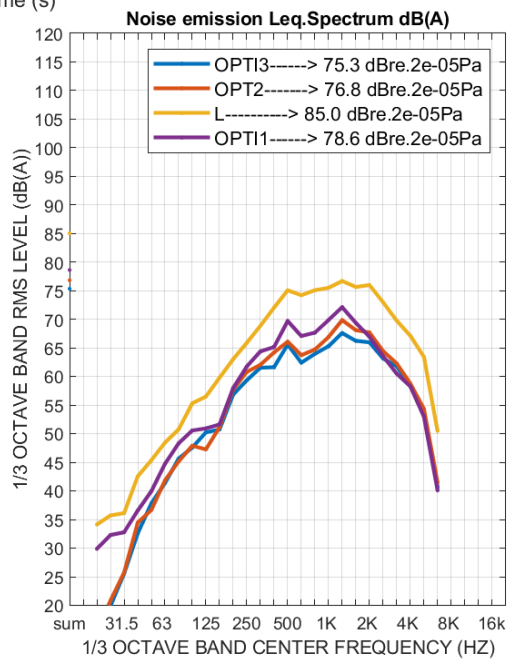
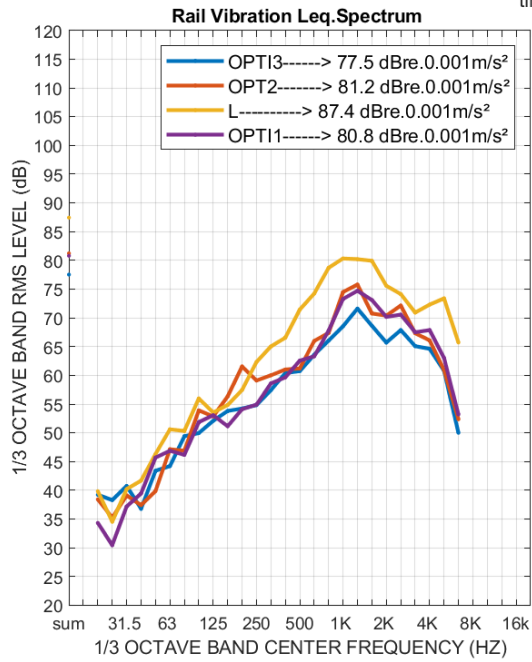
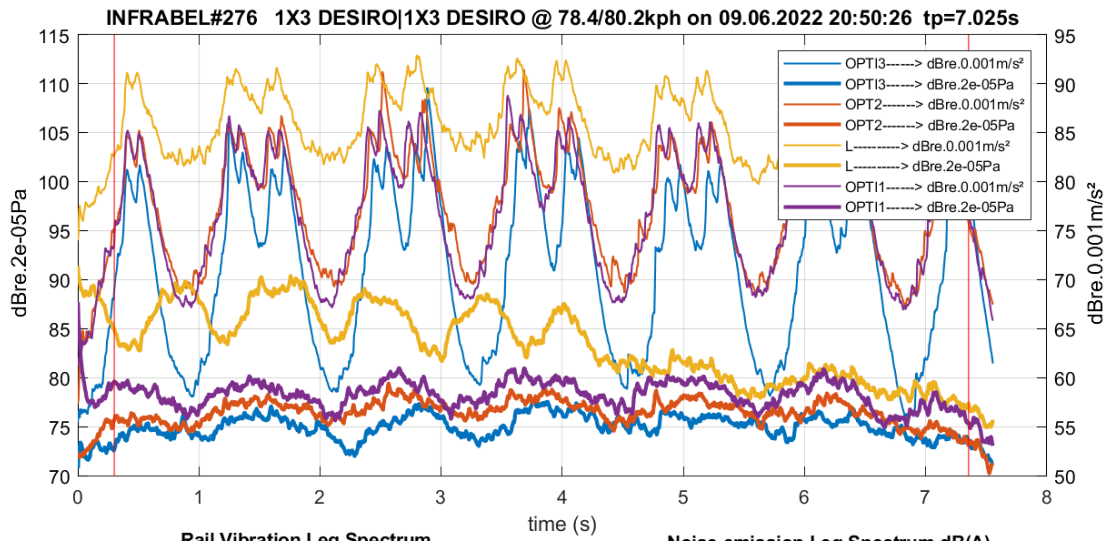




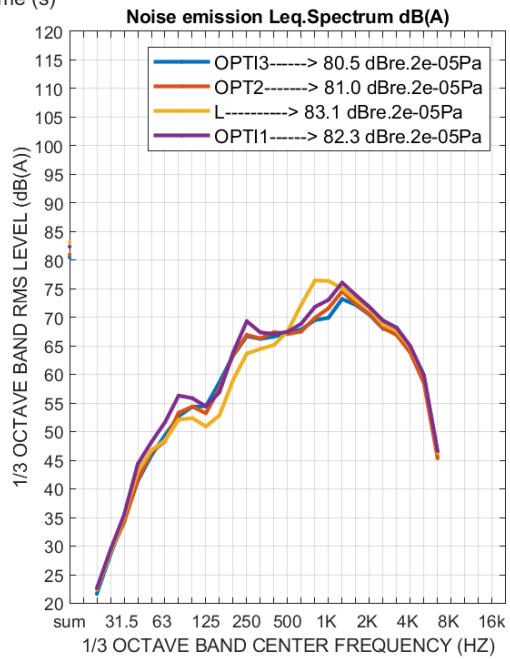
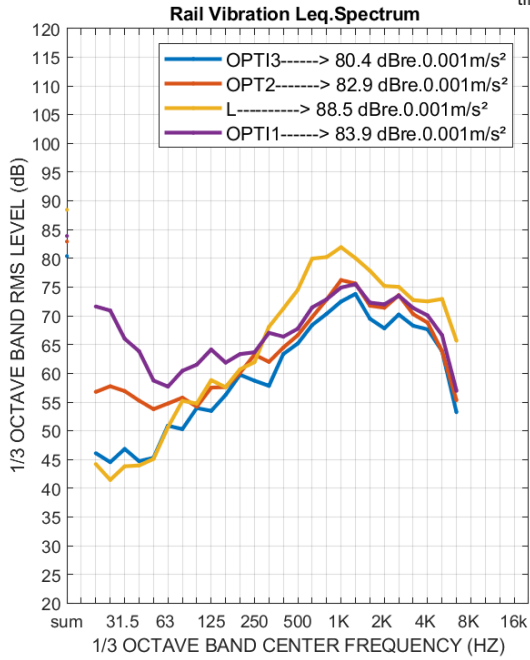
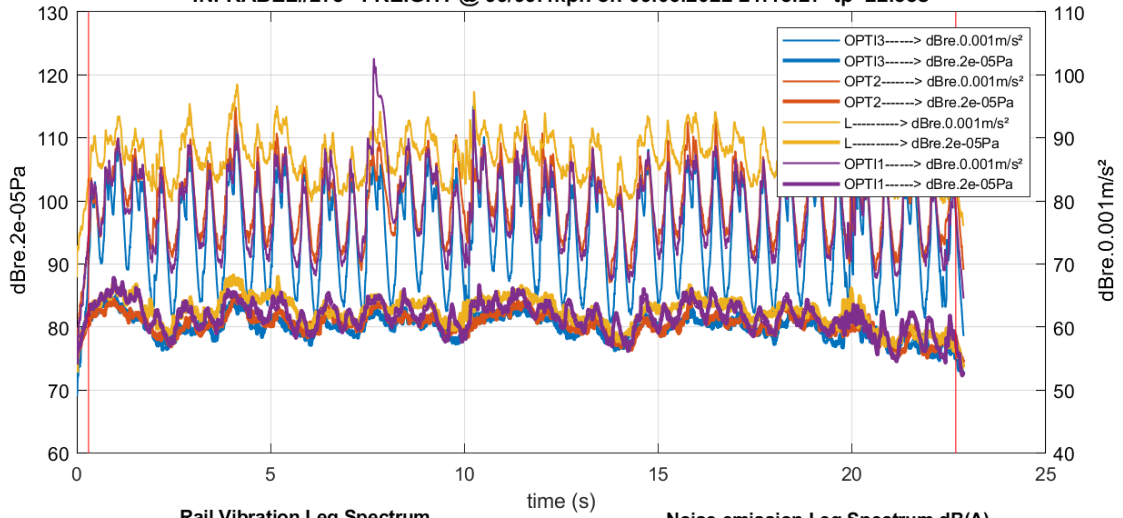


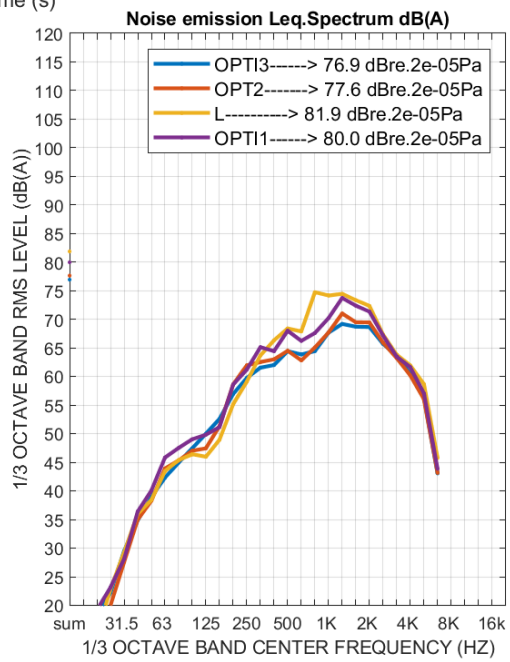
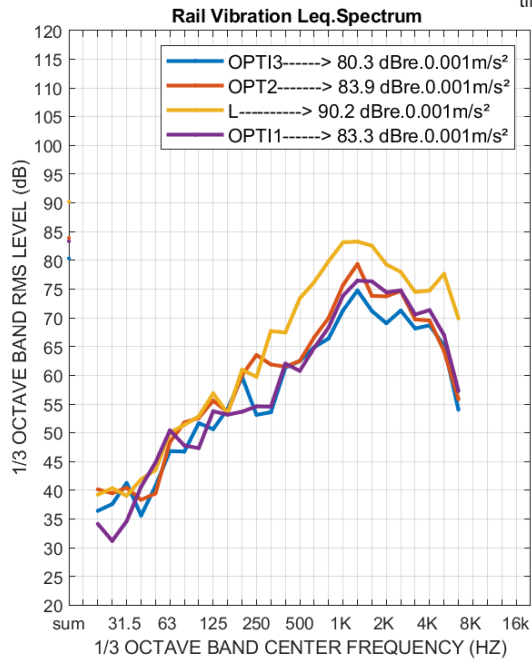
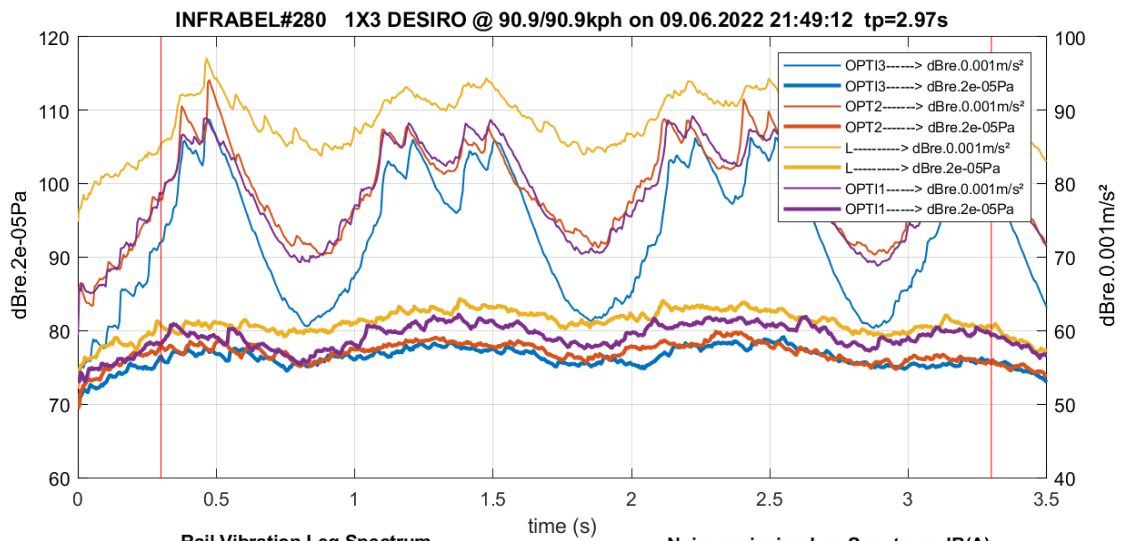


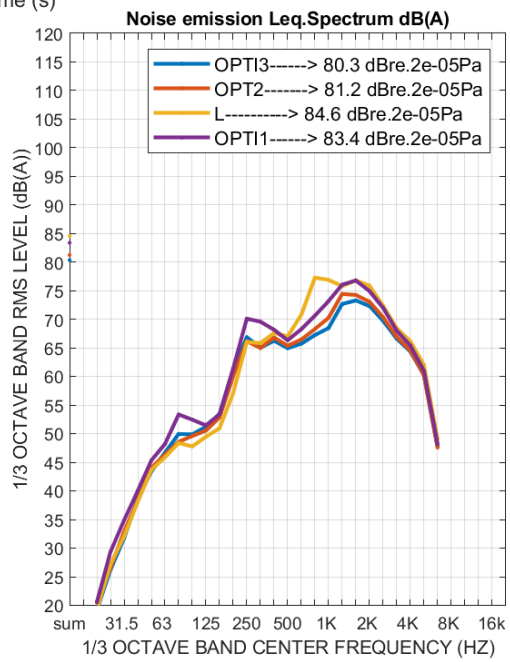
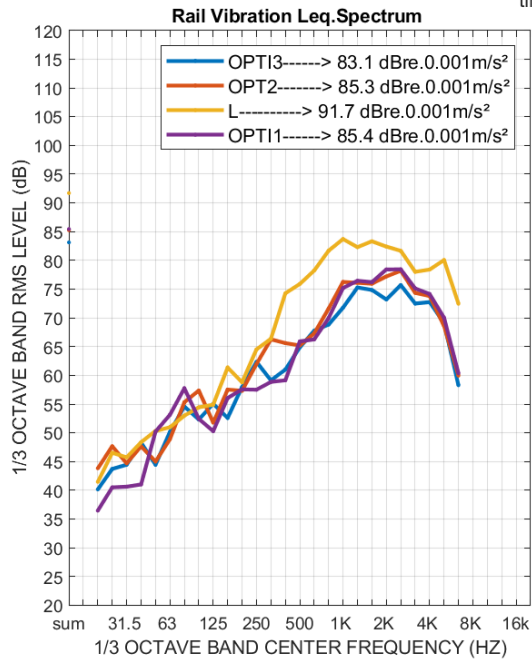
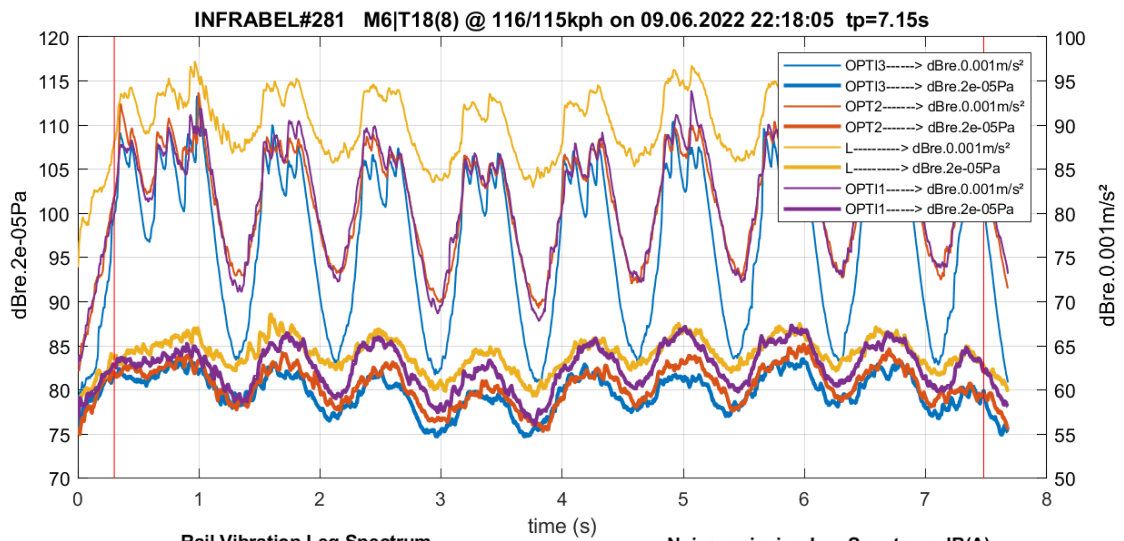


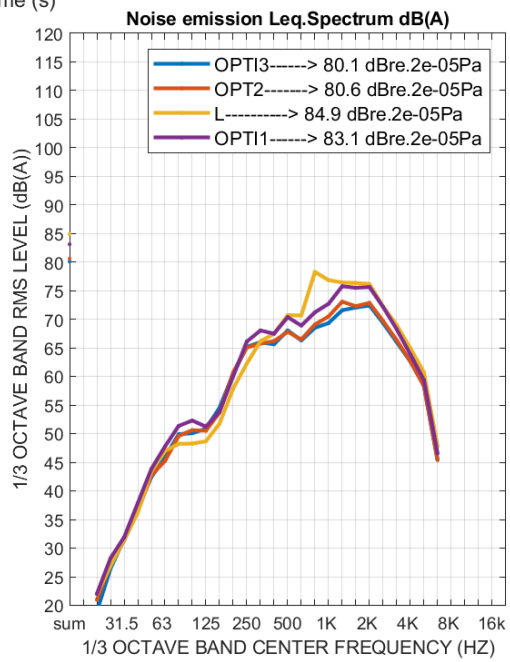
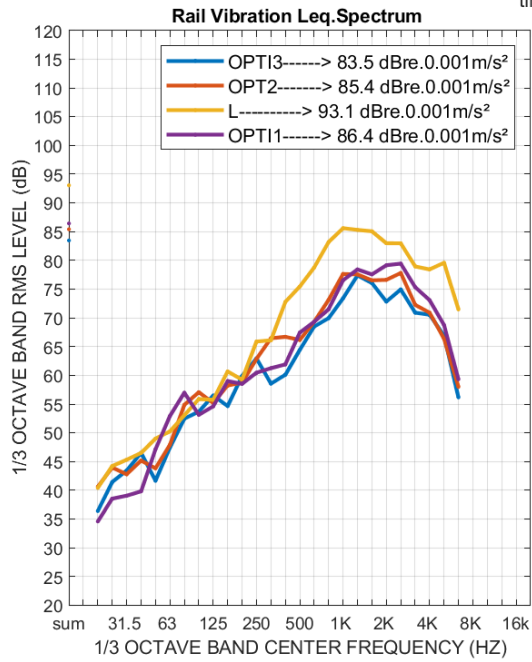
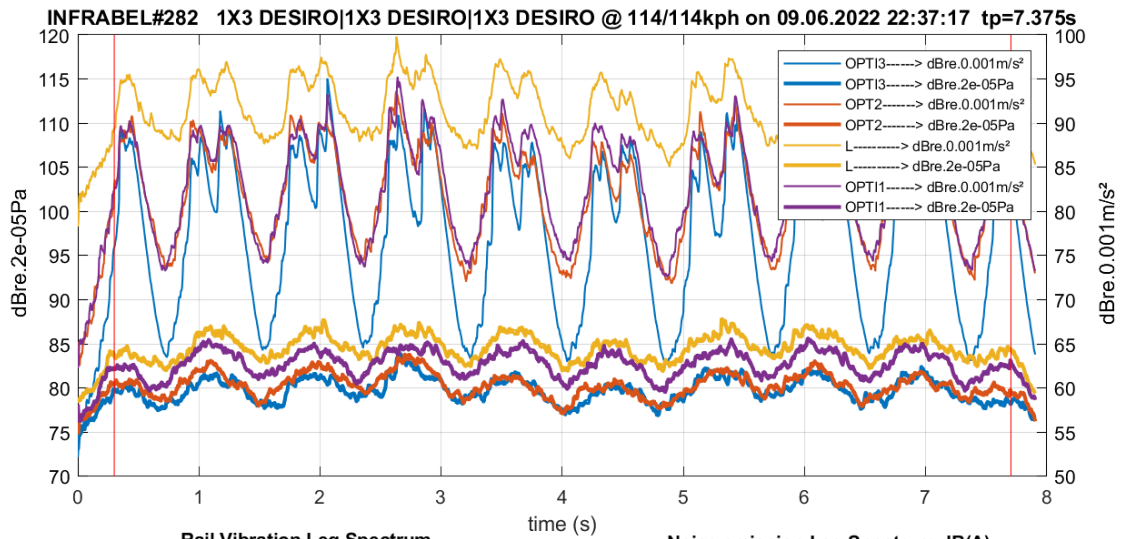


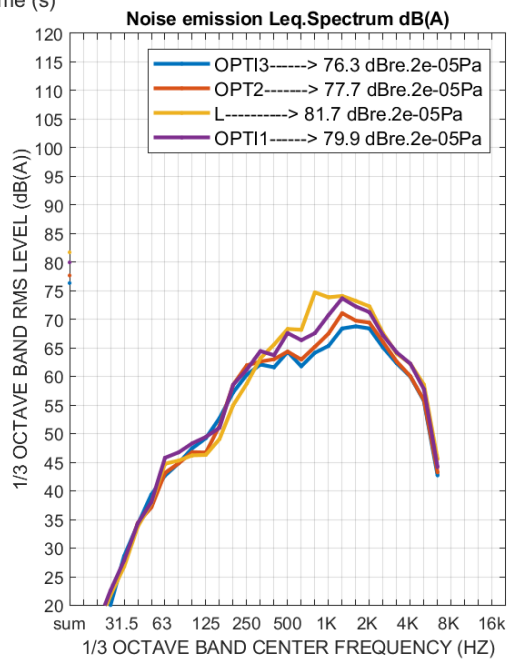
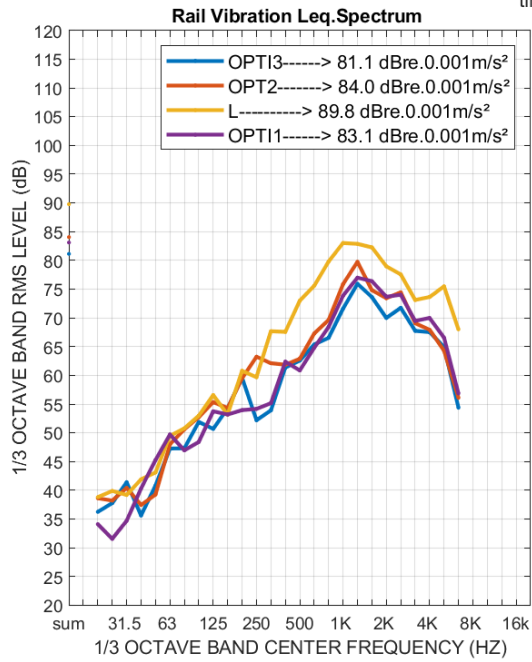
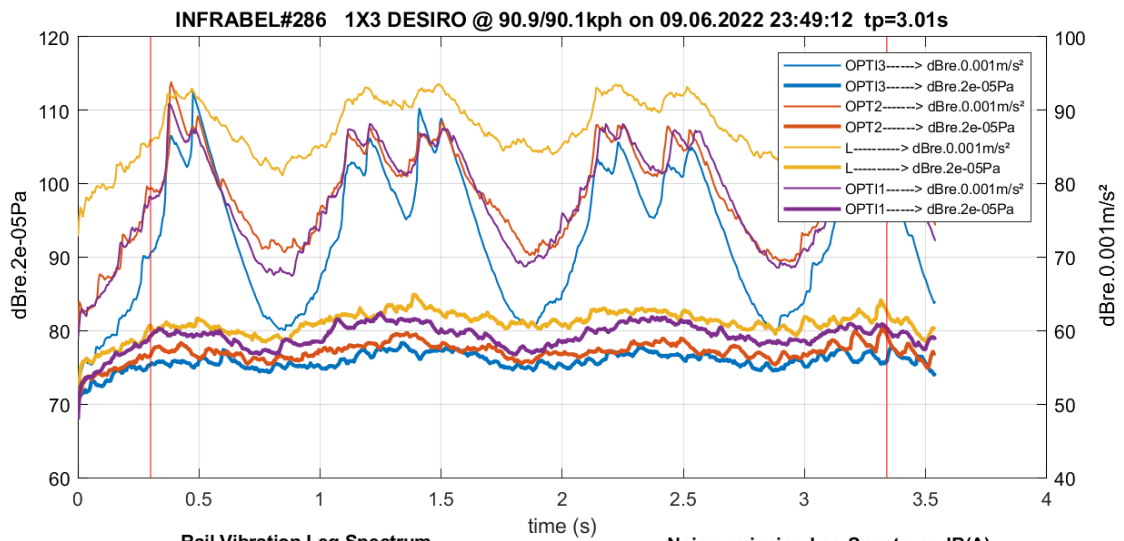
INFRABEL#278 FREIGHT @ 99/99.1kph on 09.06.2022 21:15:27 tp=22.35s

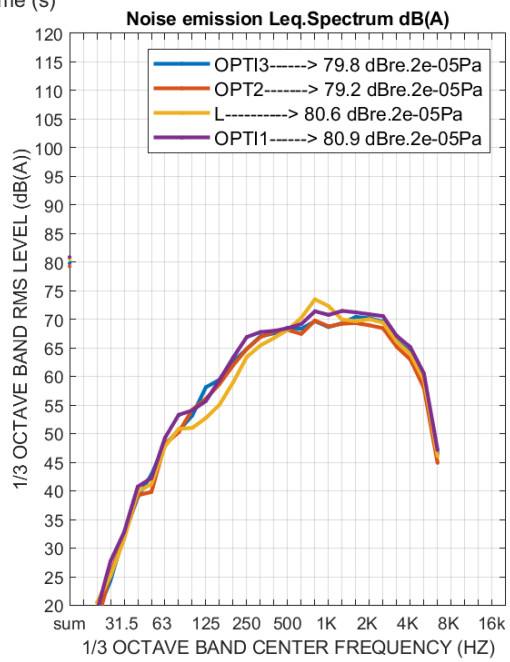
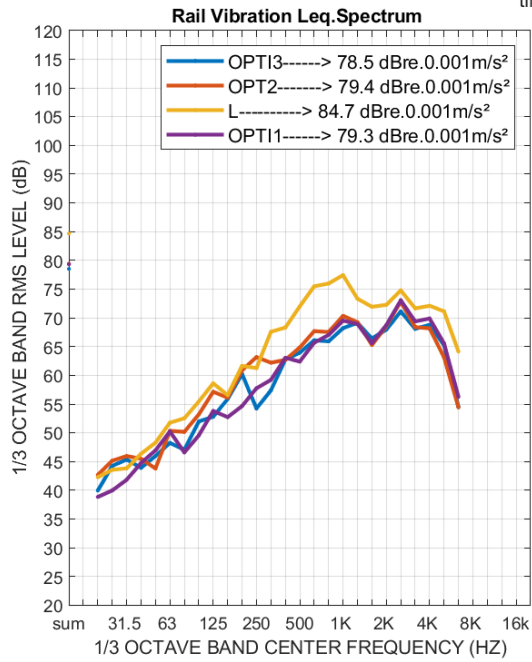
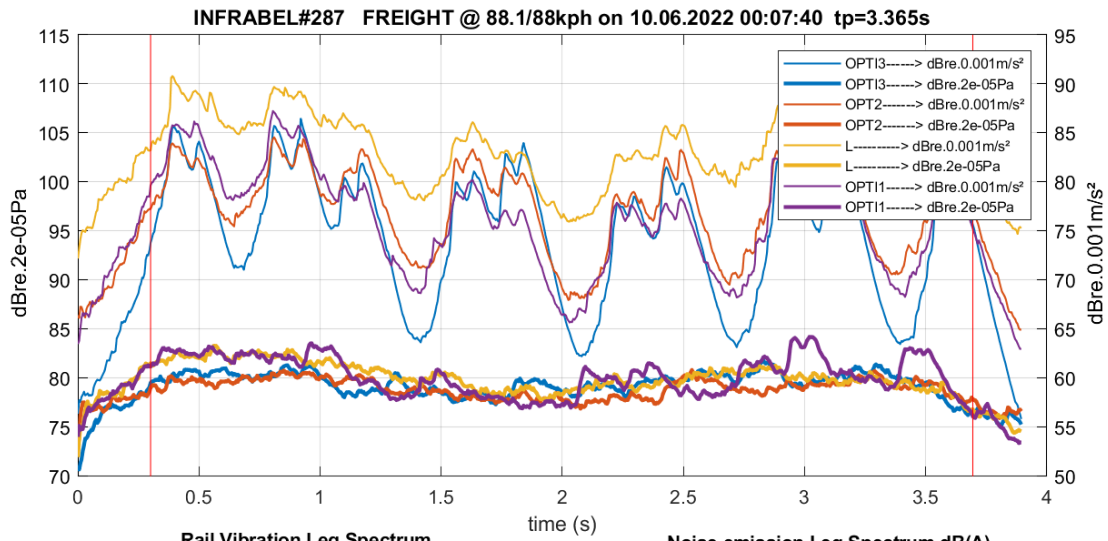


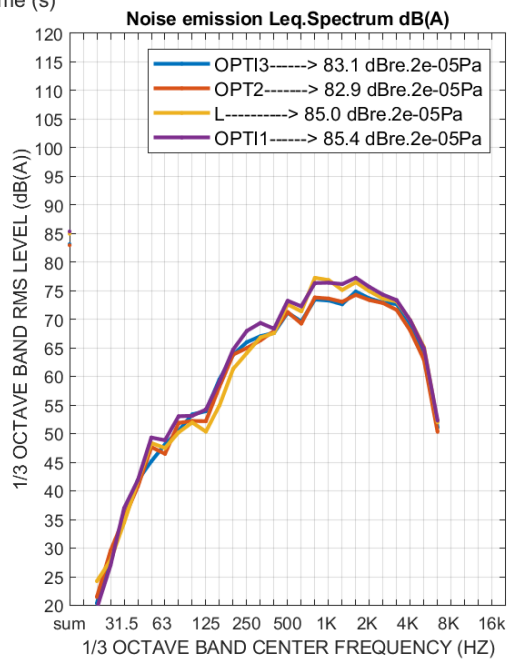
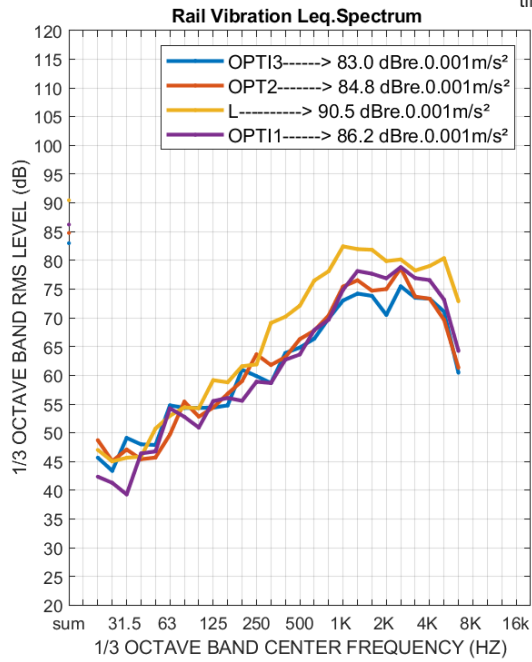
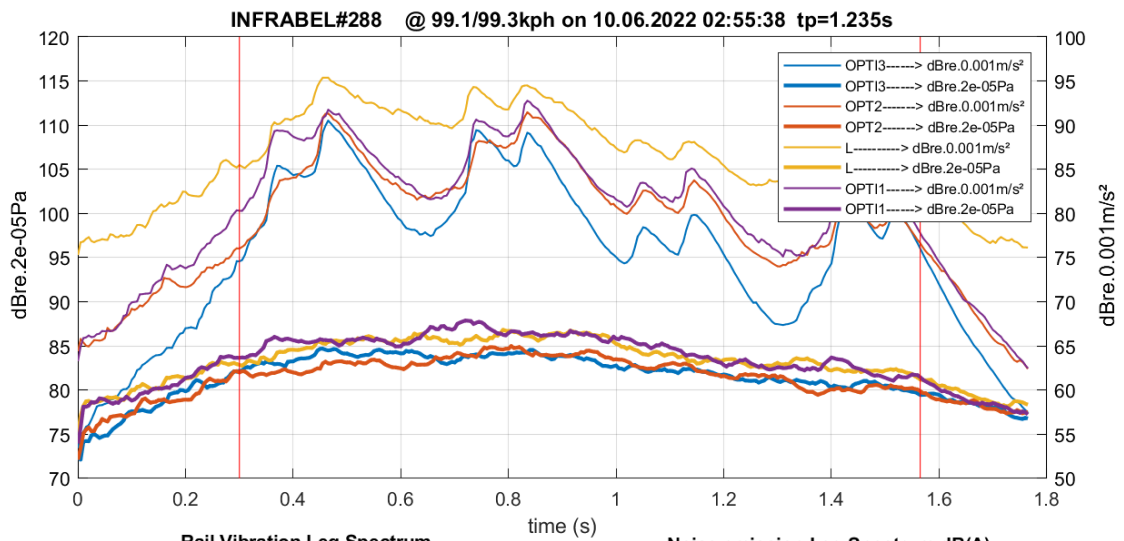


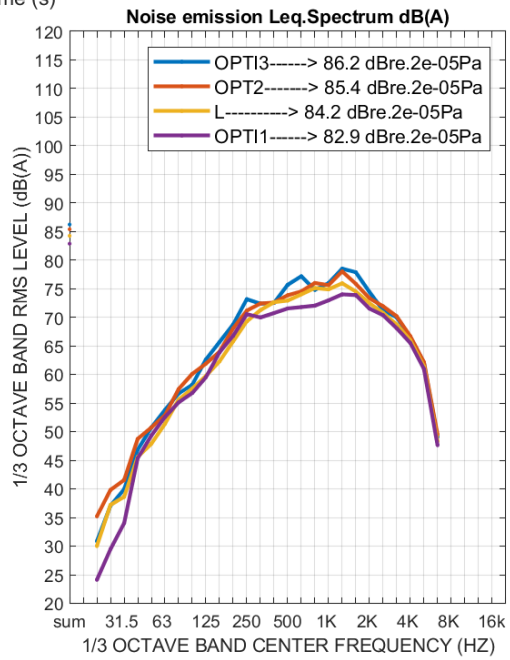
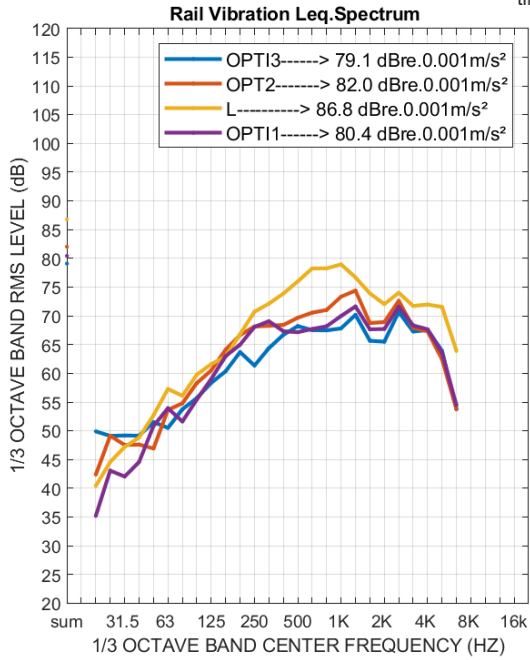
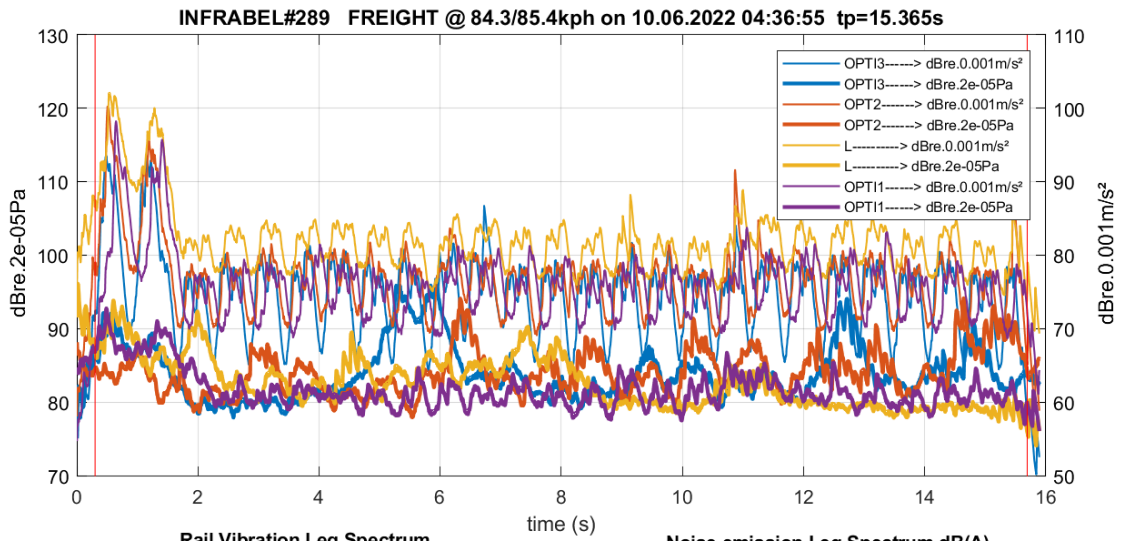




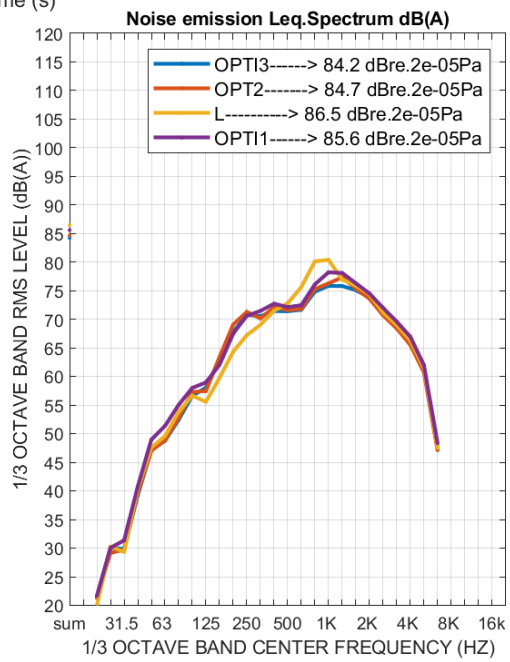
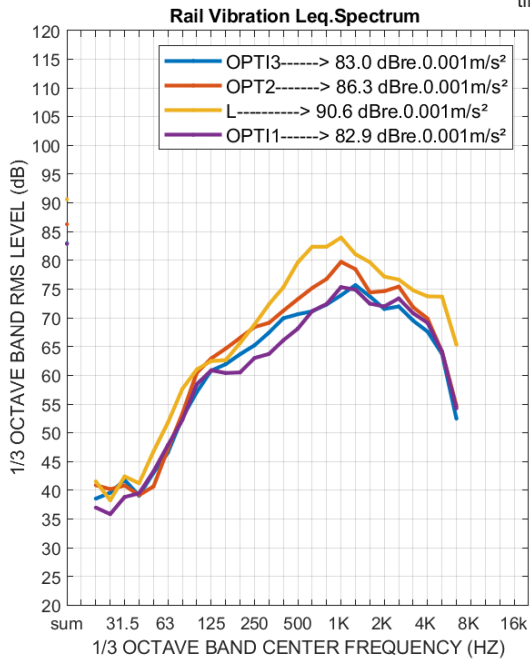
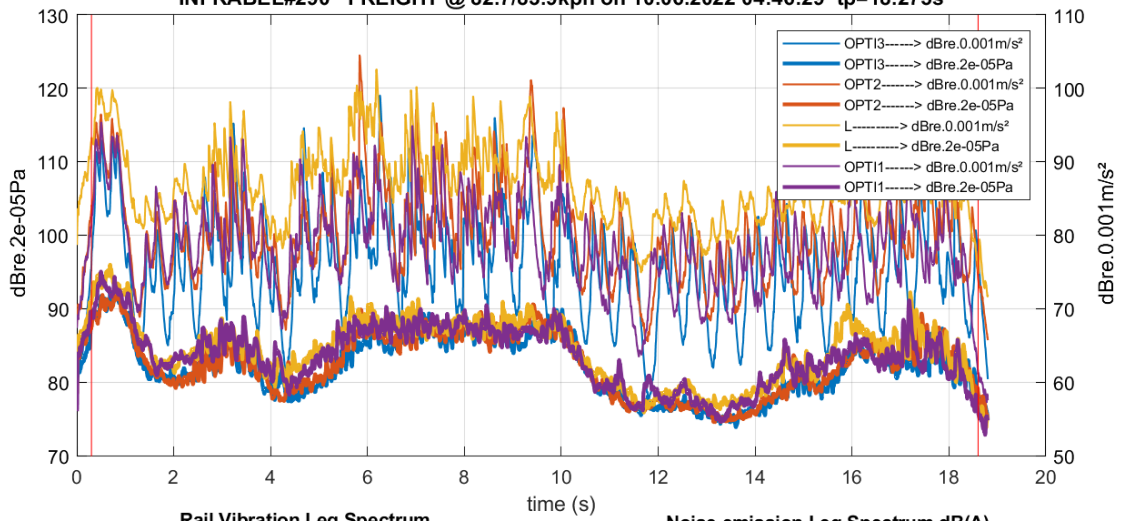


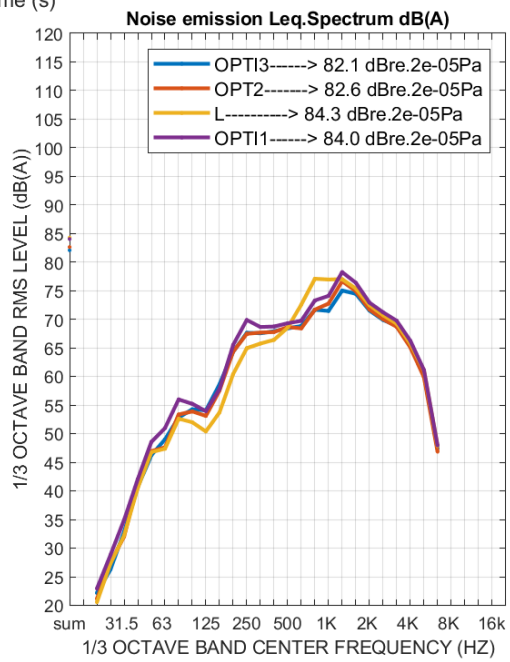
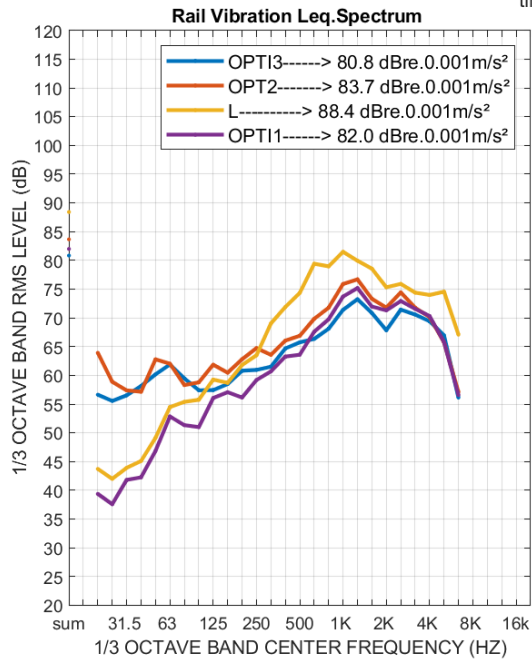
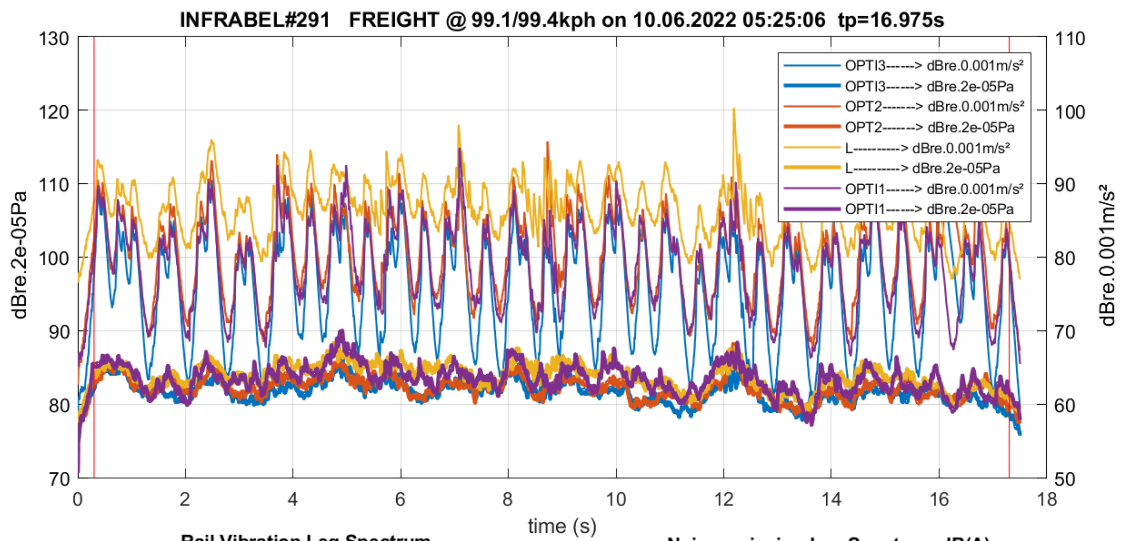


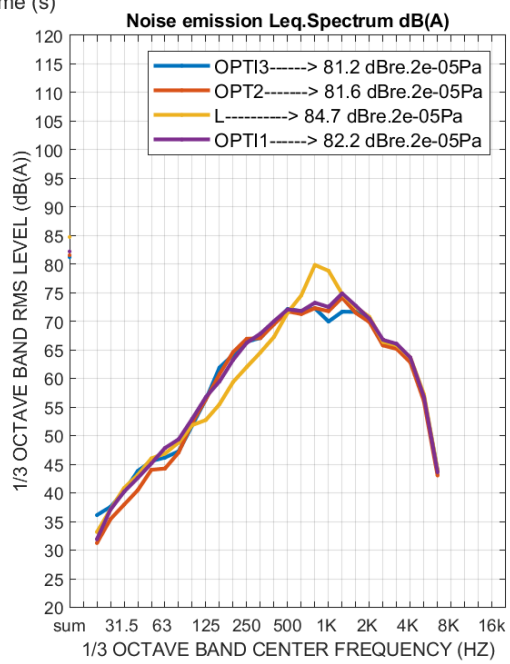
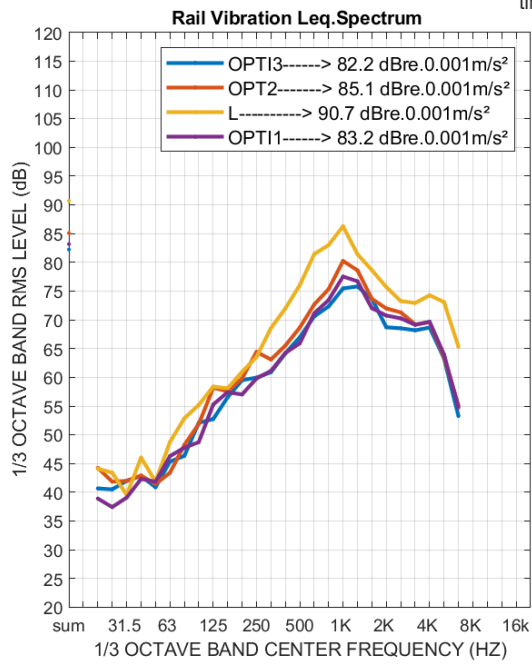
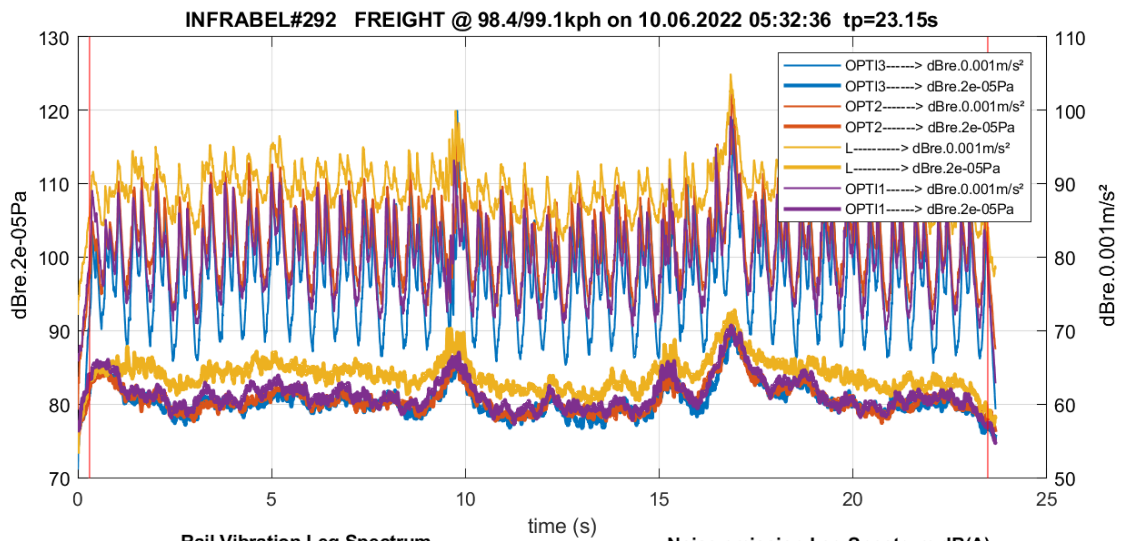


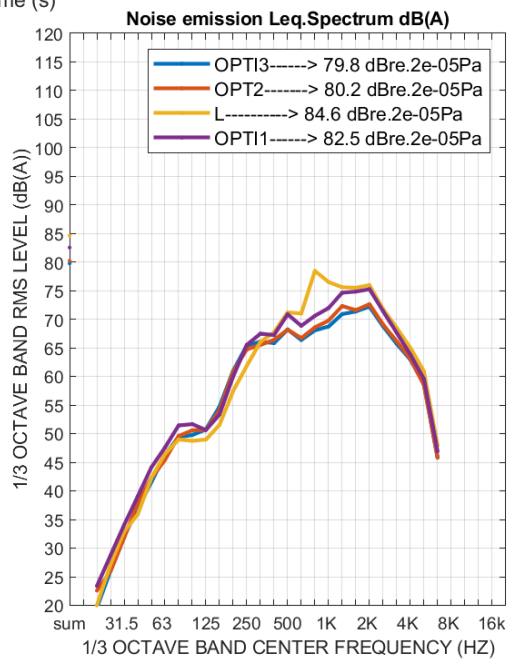
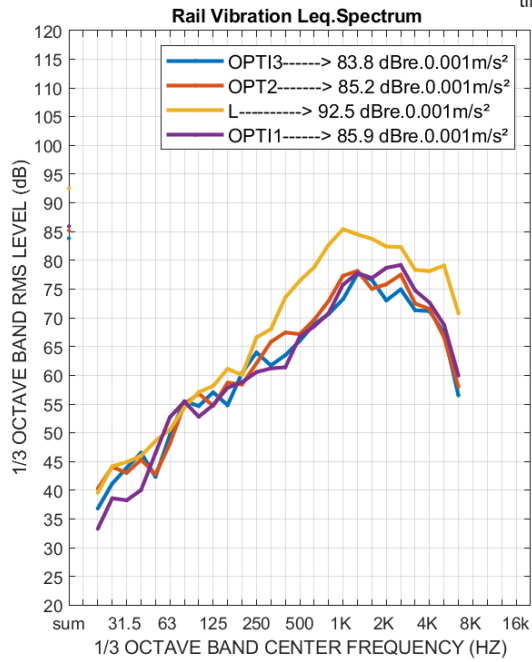
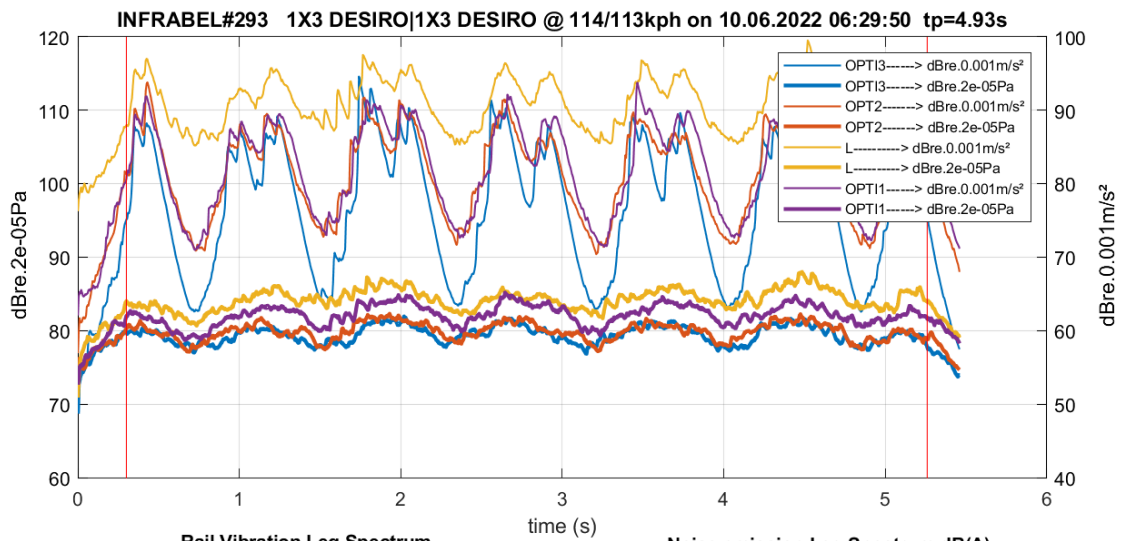


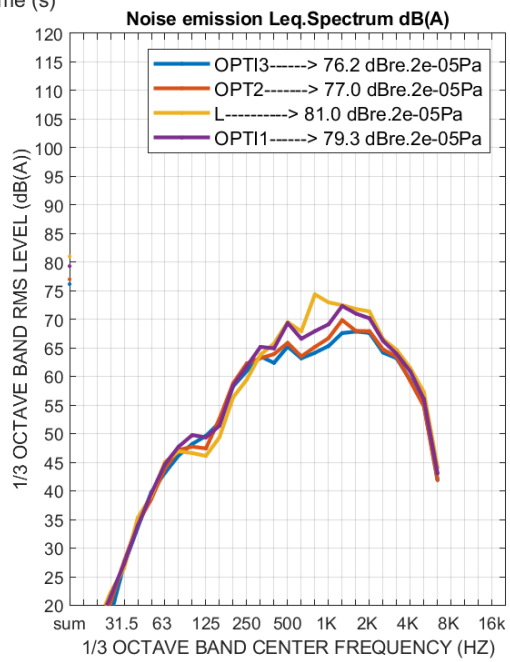
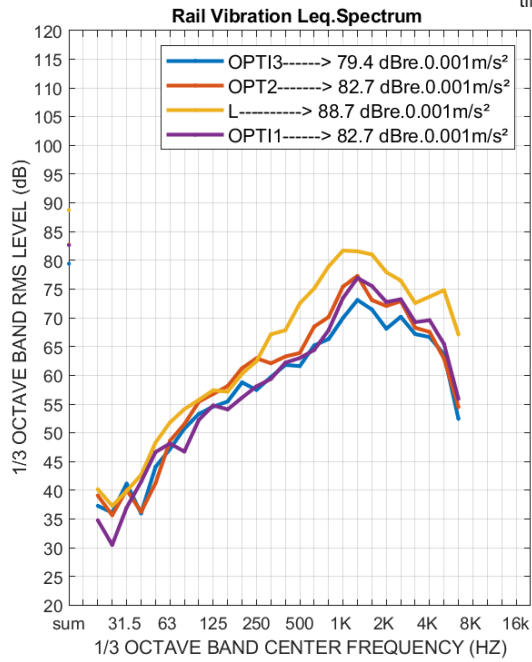
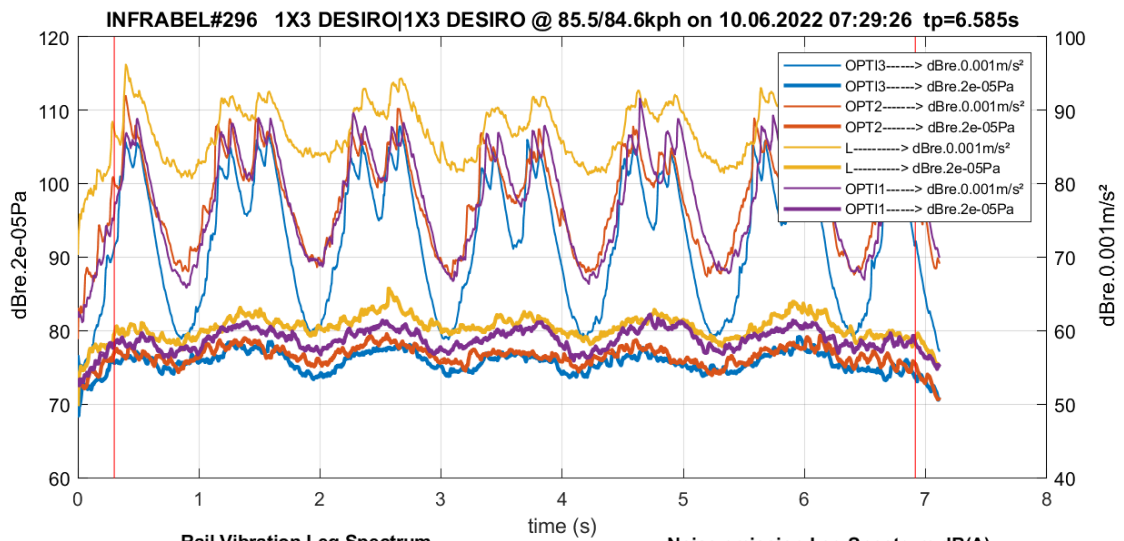
INFRABEL#290 FREIGHT @ 82.7/83.9kph on 10.06.2022 04:46:29 tp=18.275s

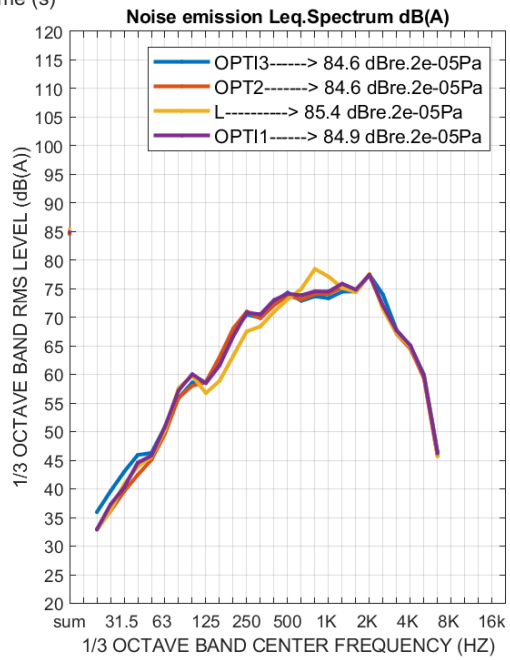
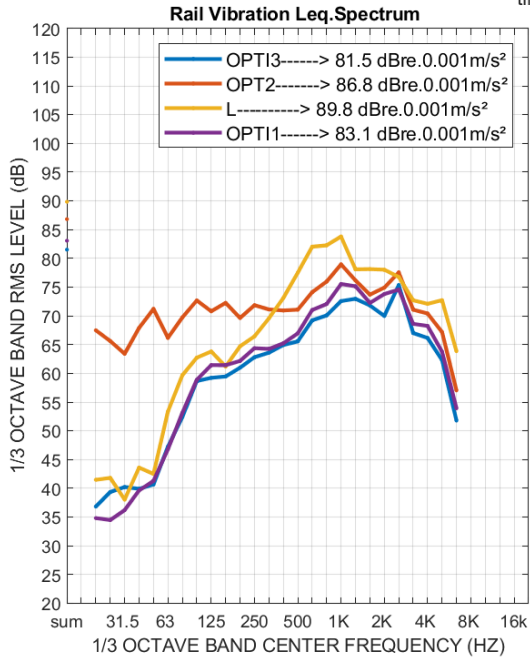
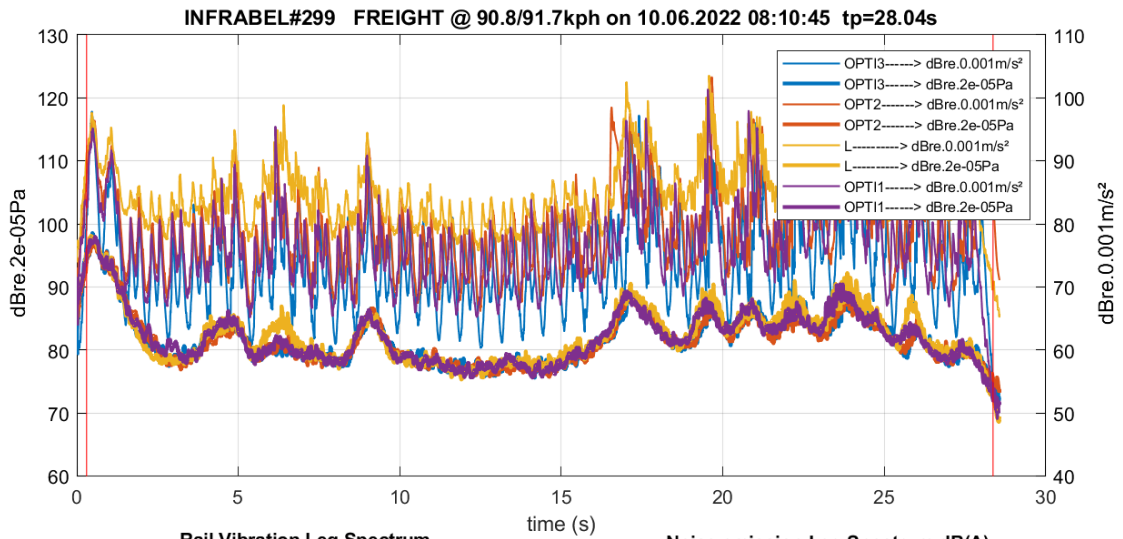


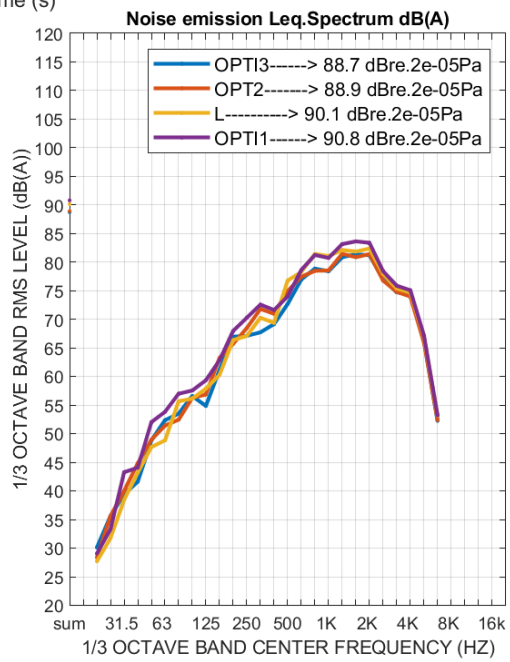
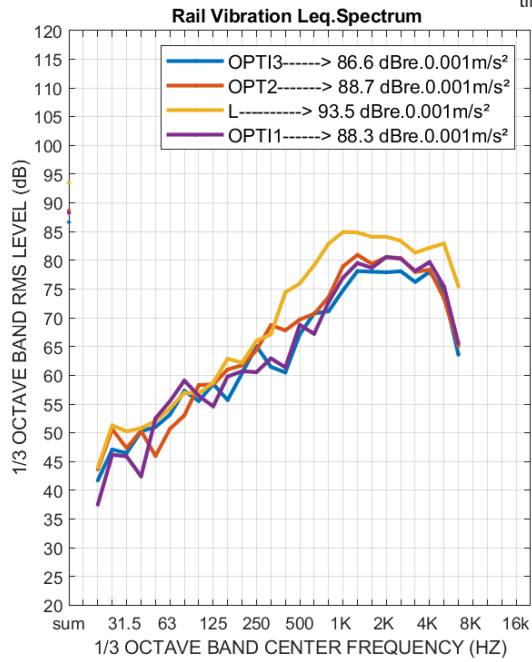
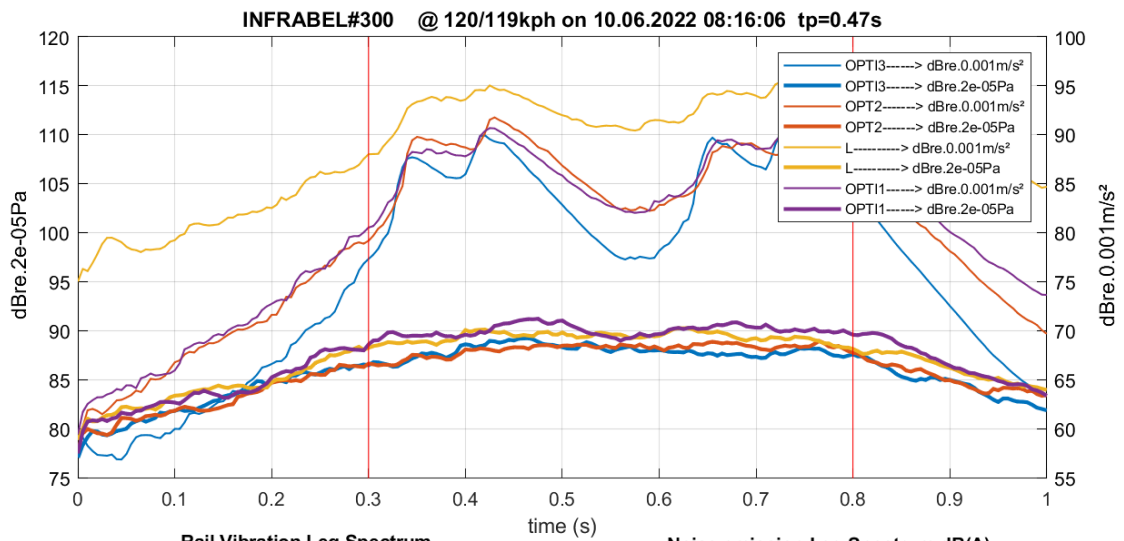


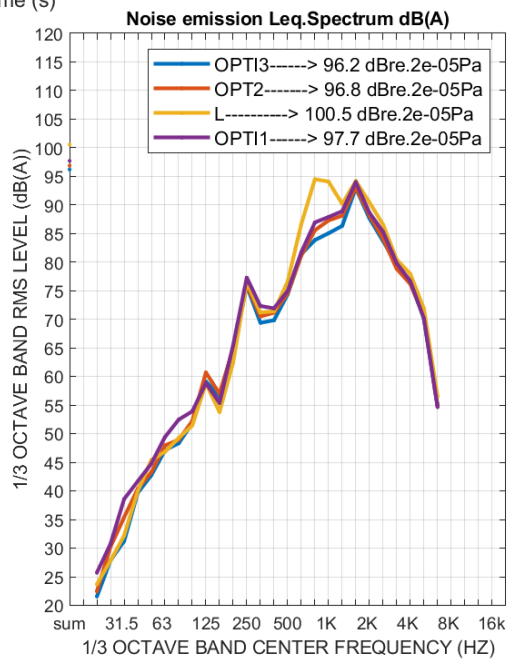
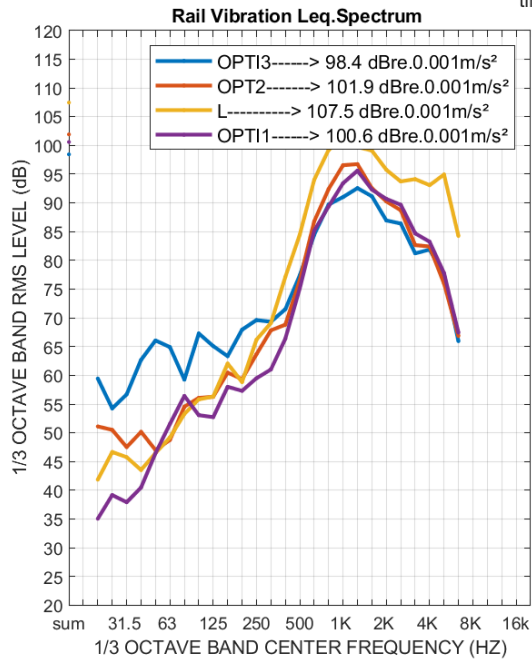
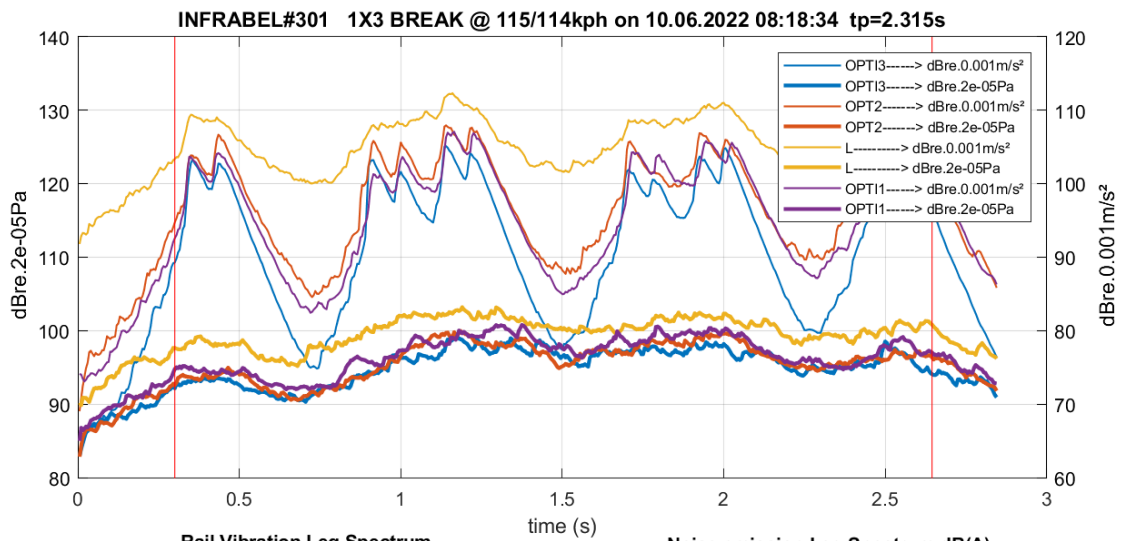


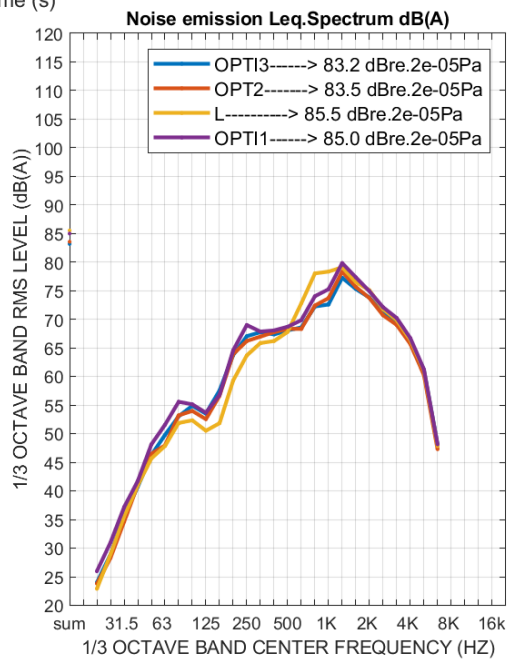
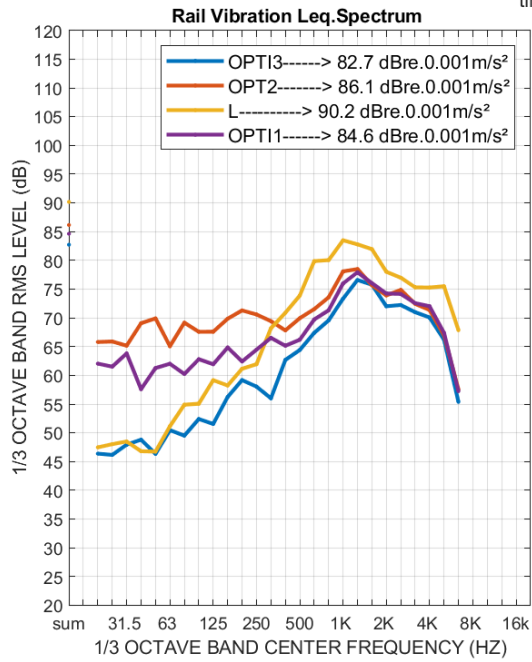
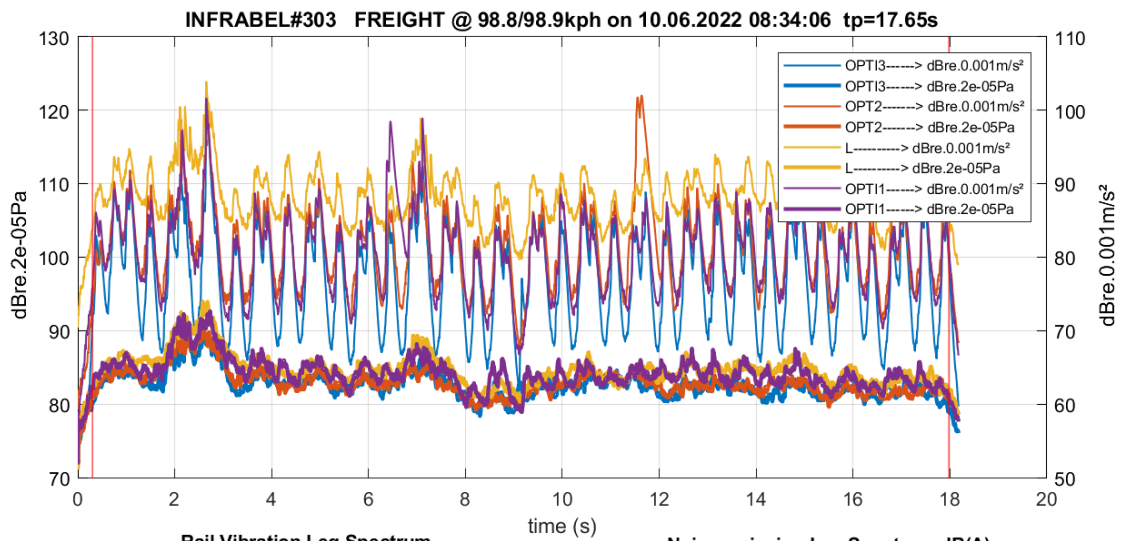


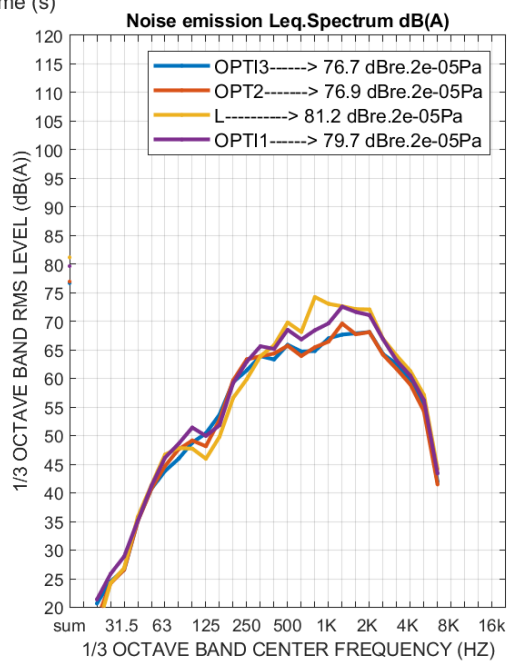
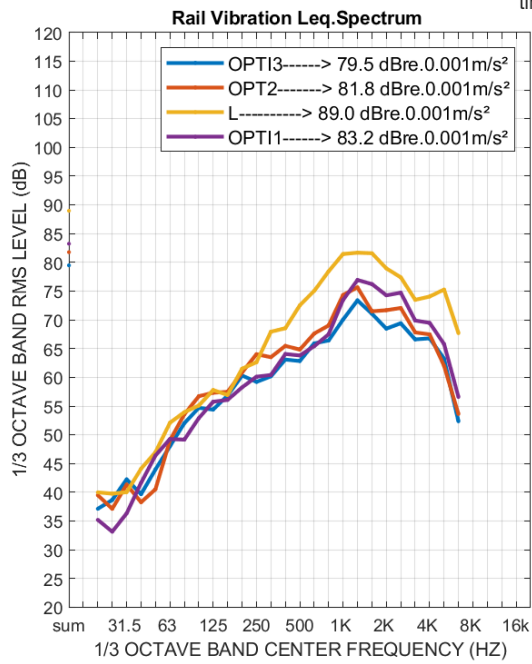
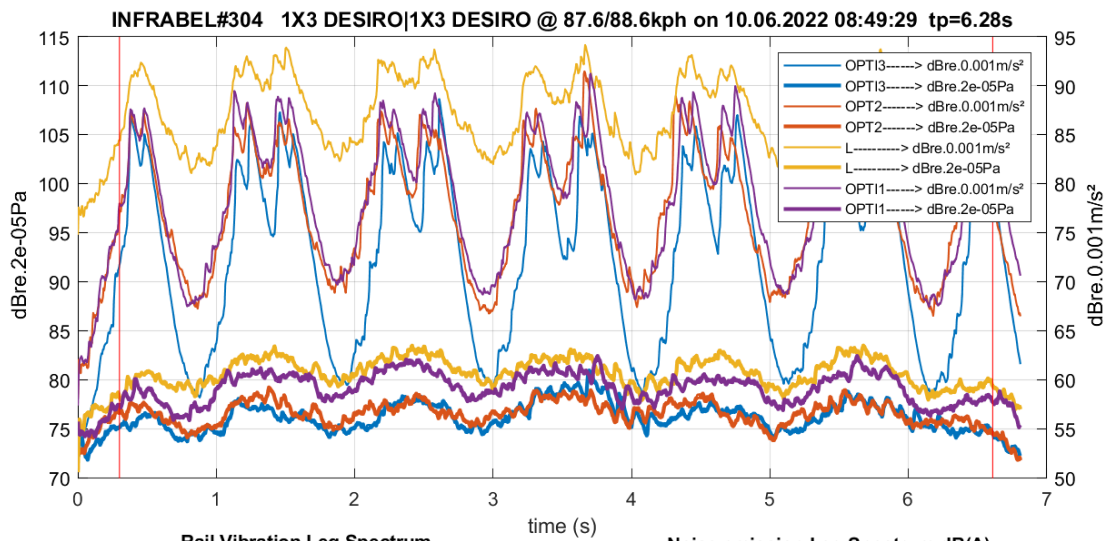


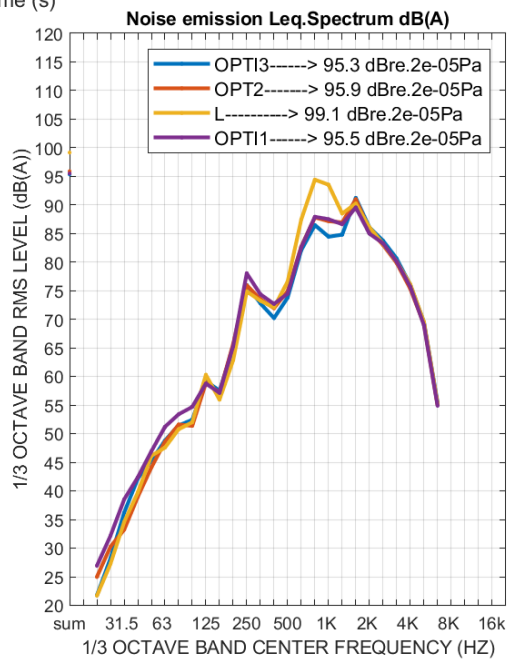
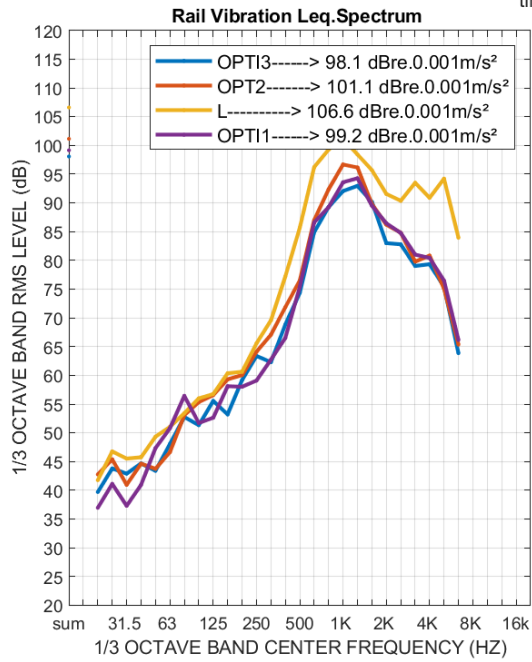
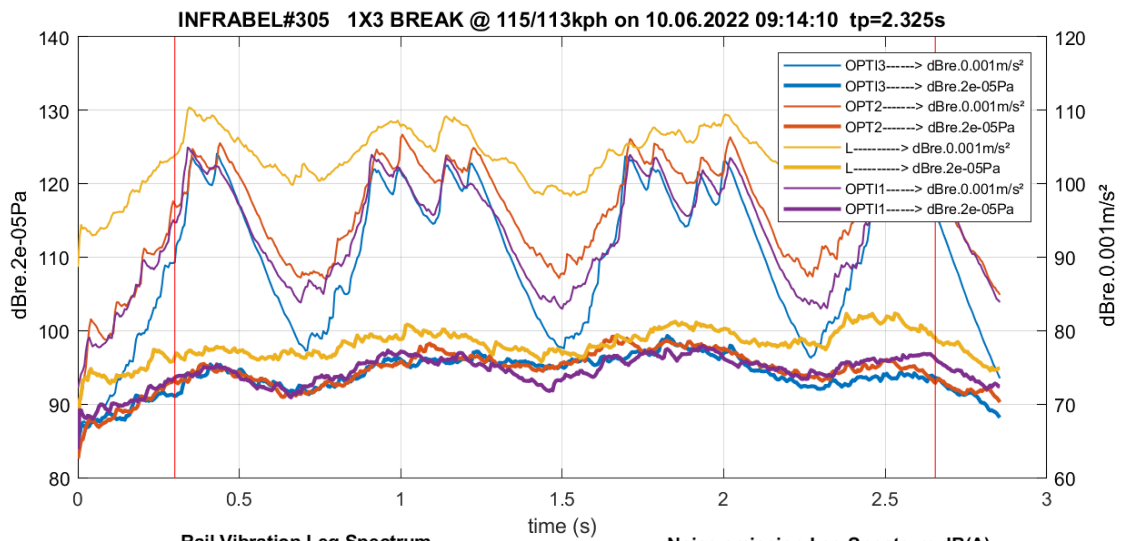


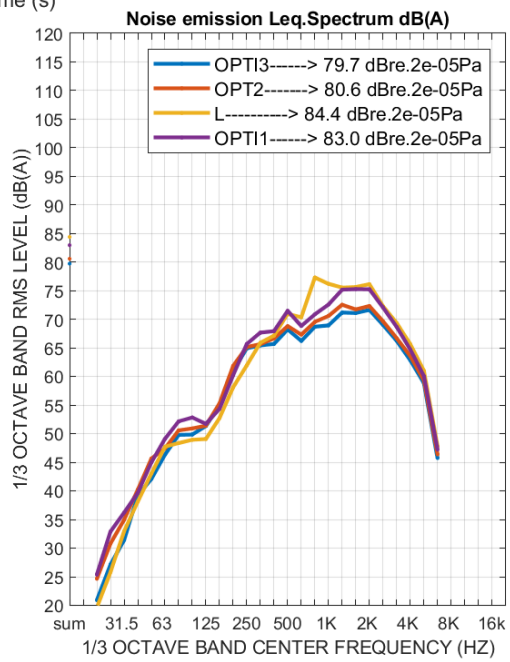
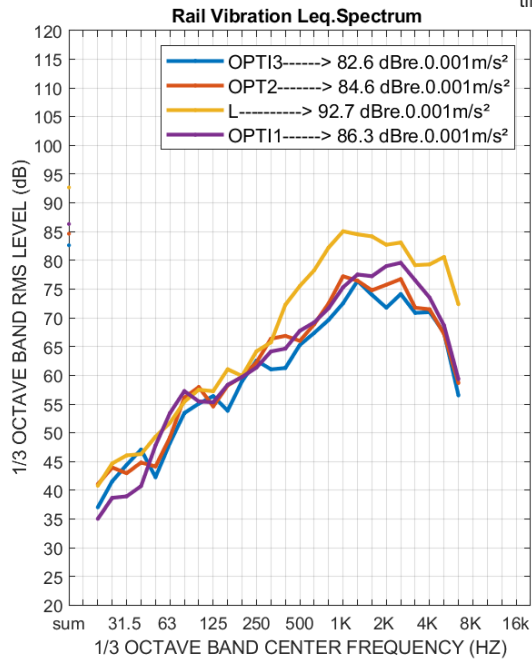
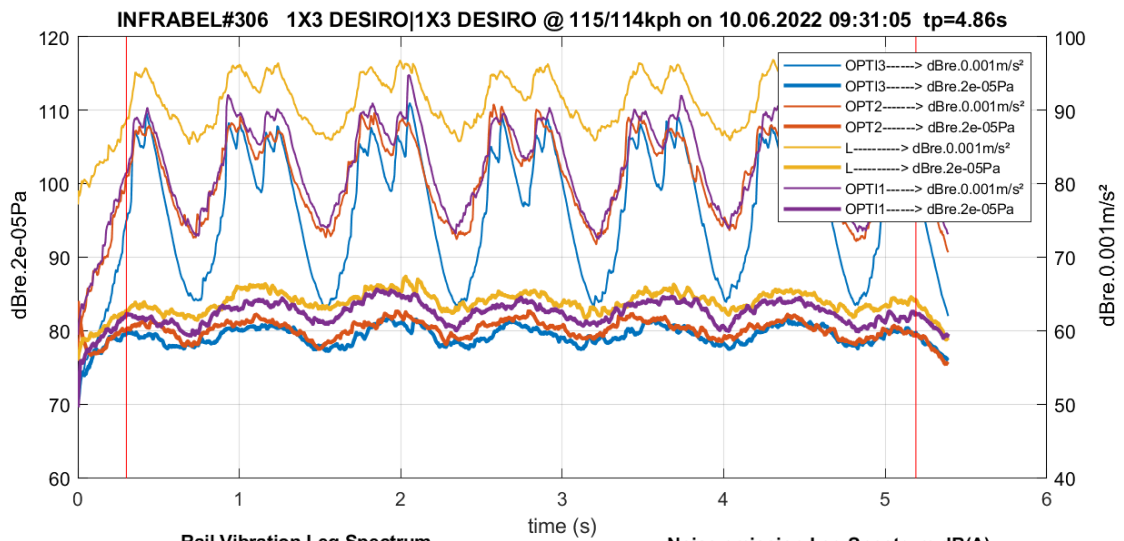


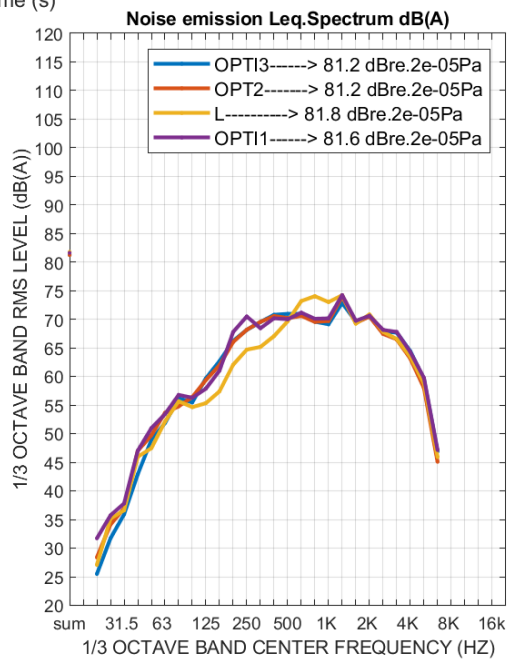
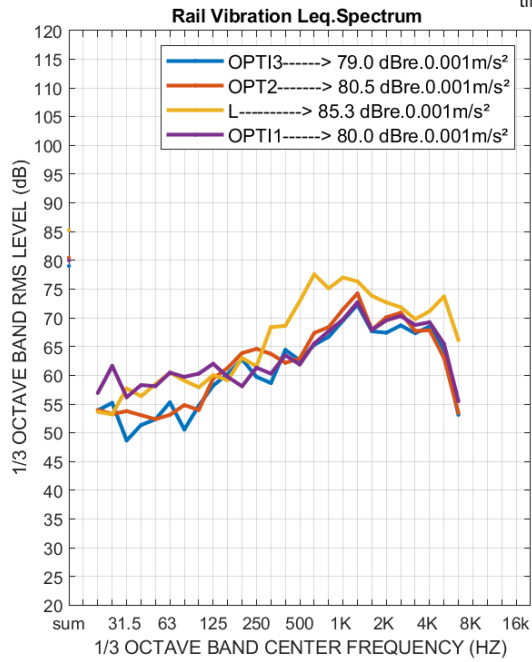
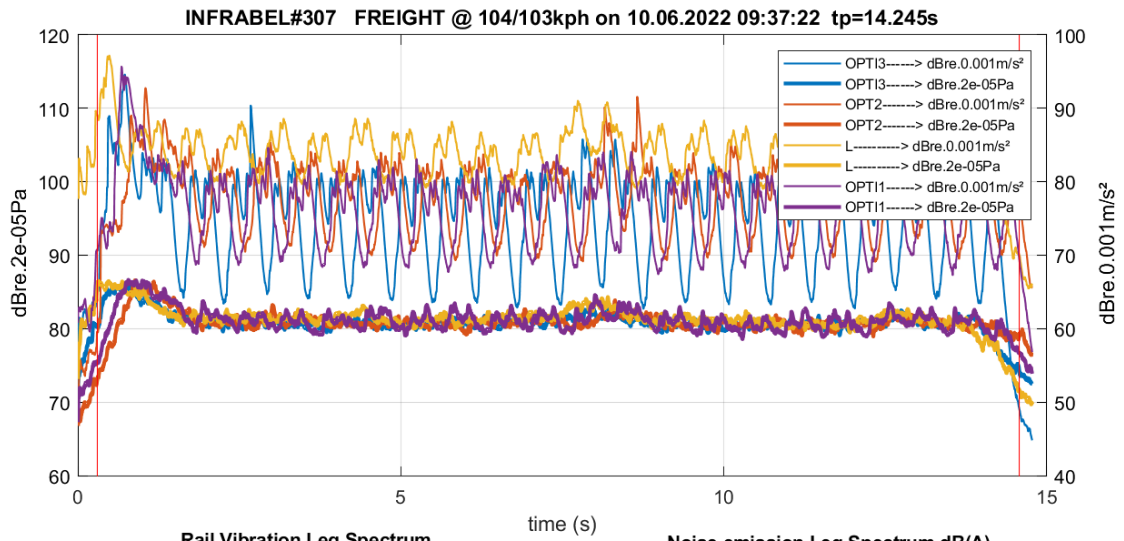


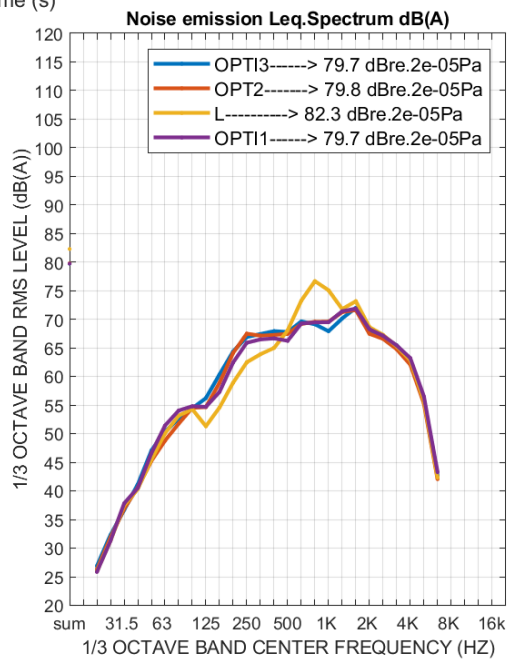
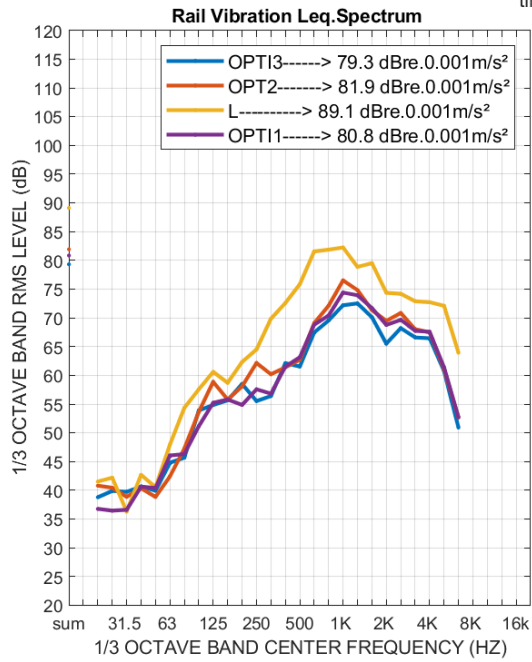
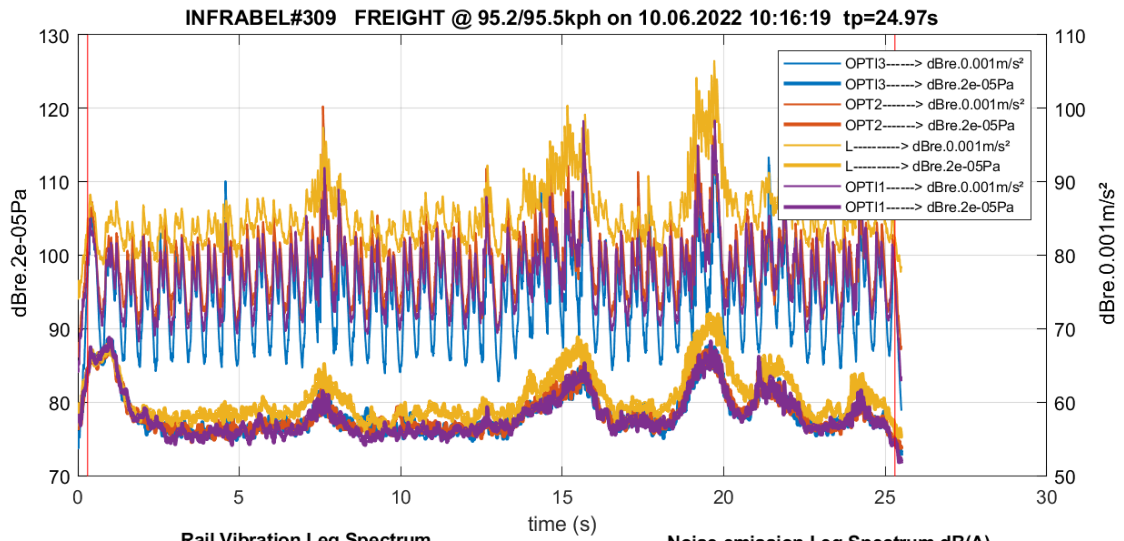


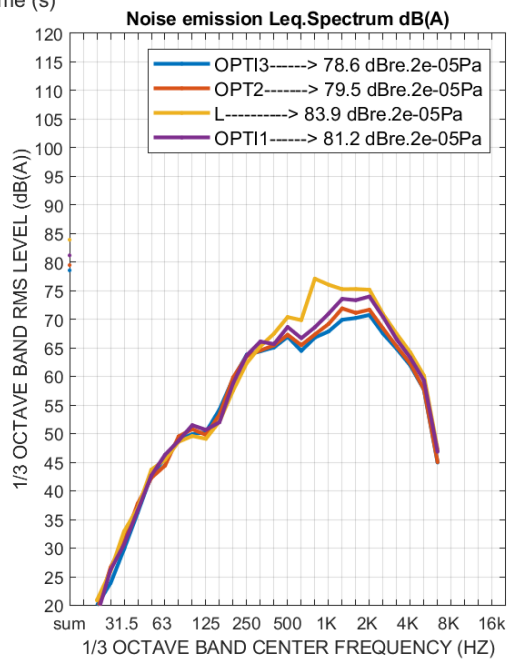
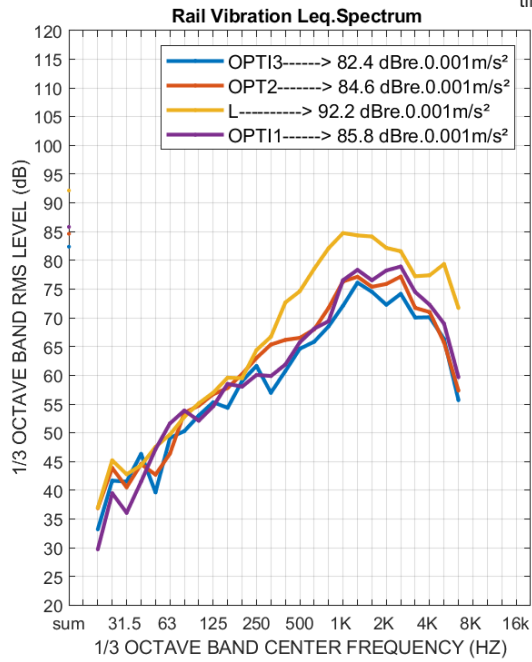
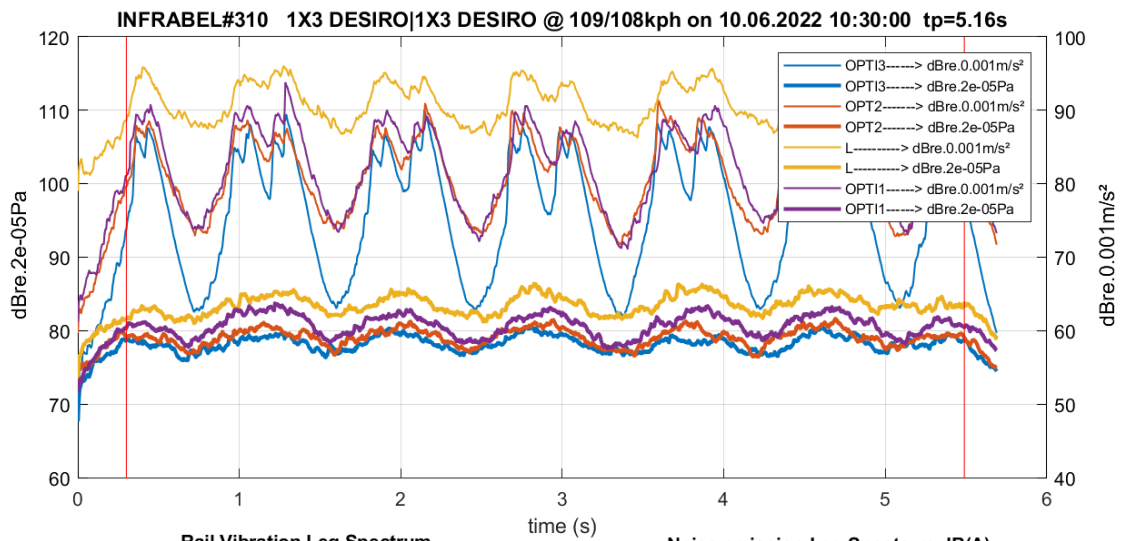


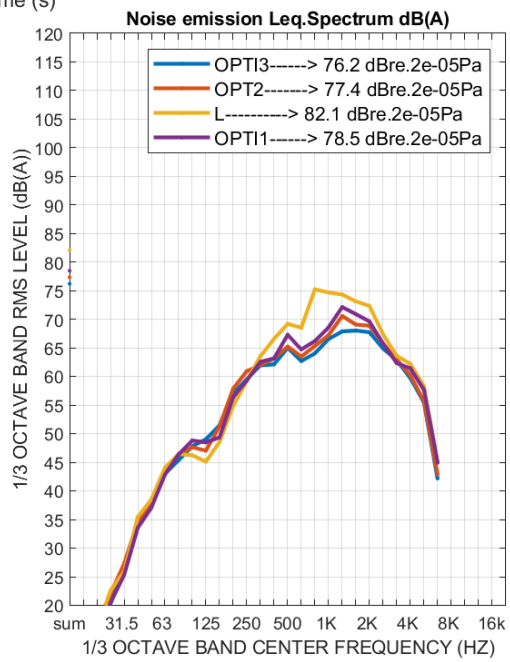
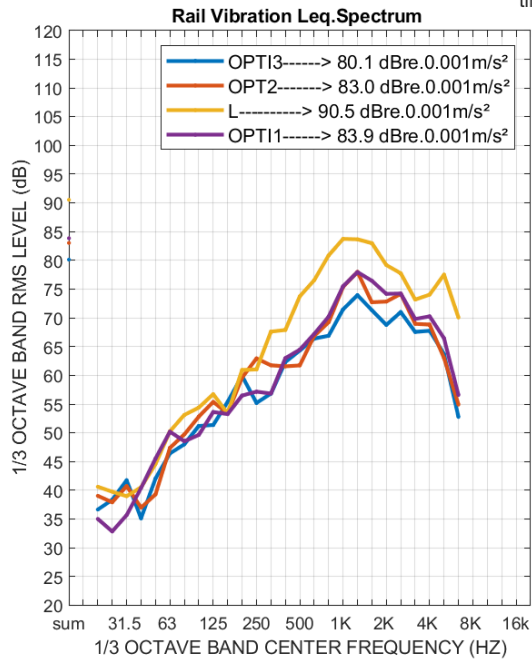
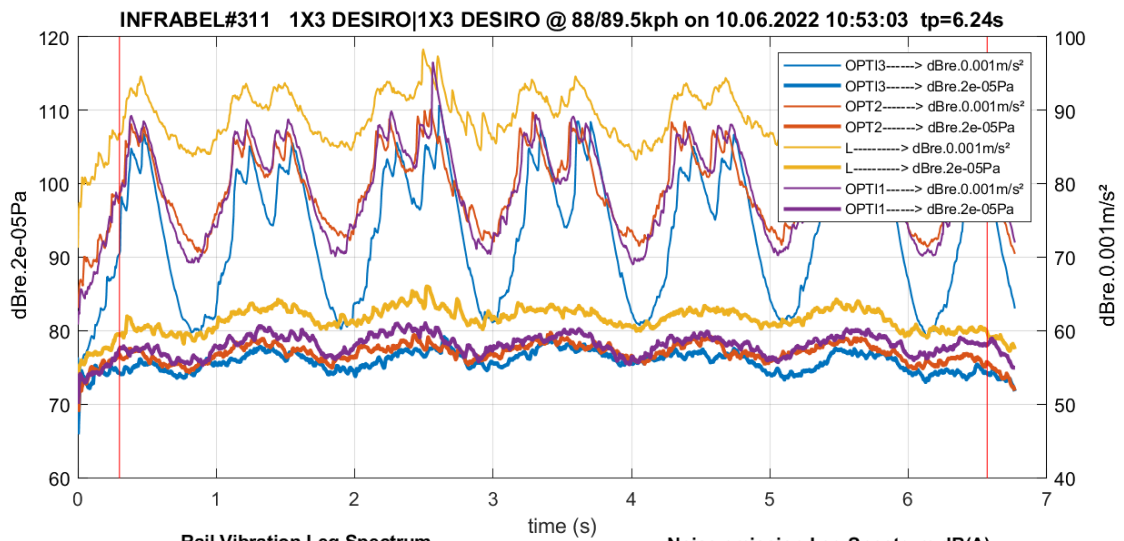


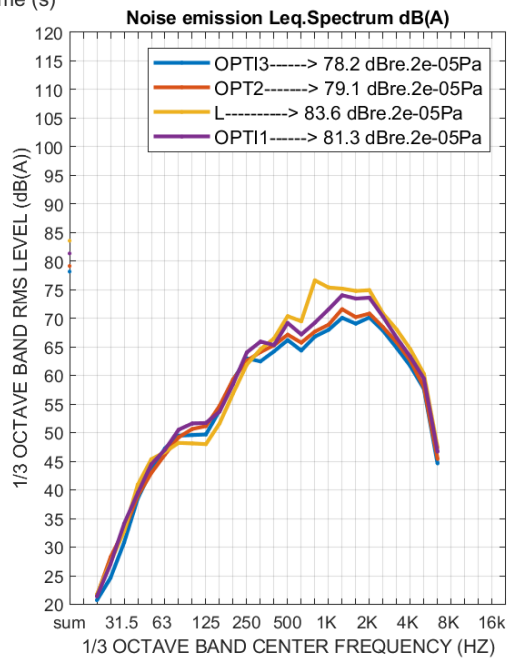
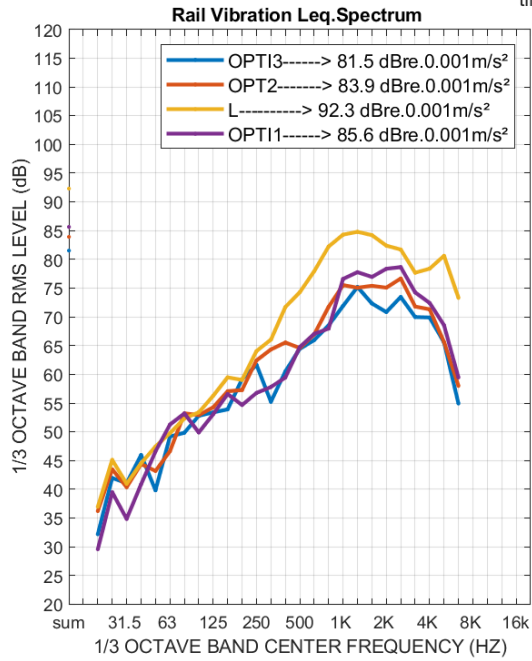
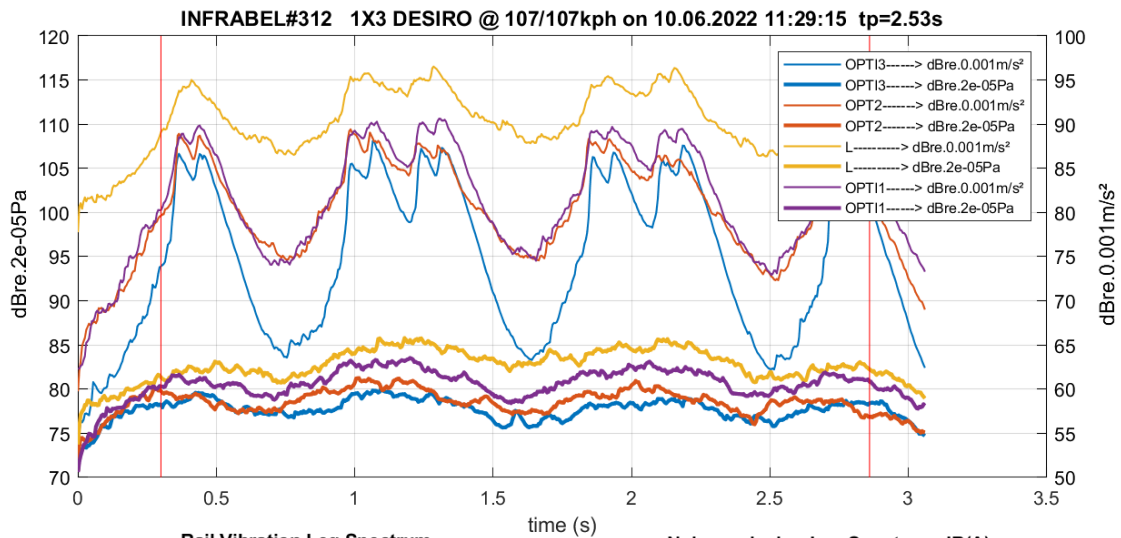




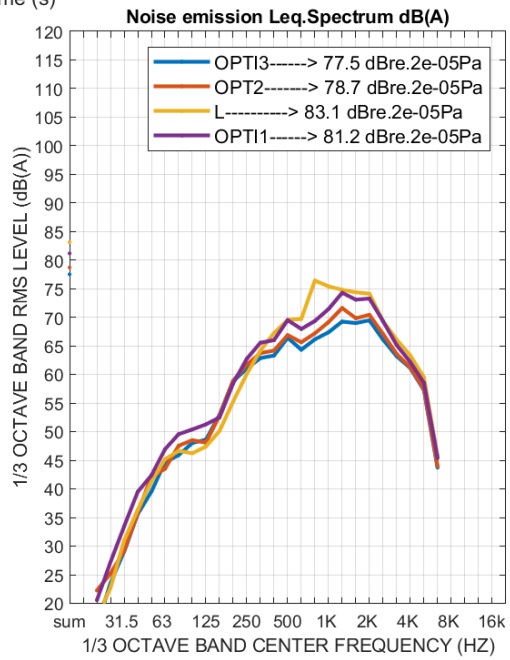
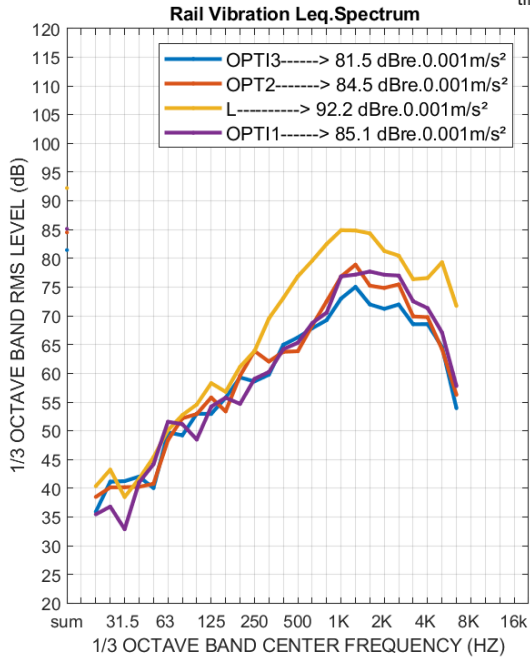
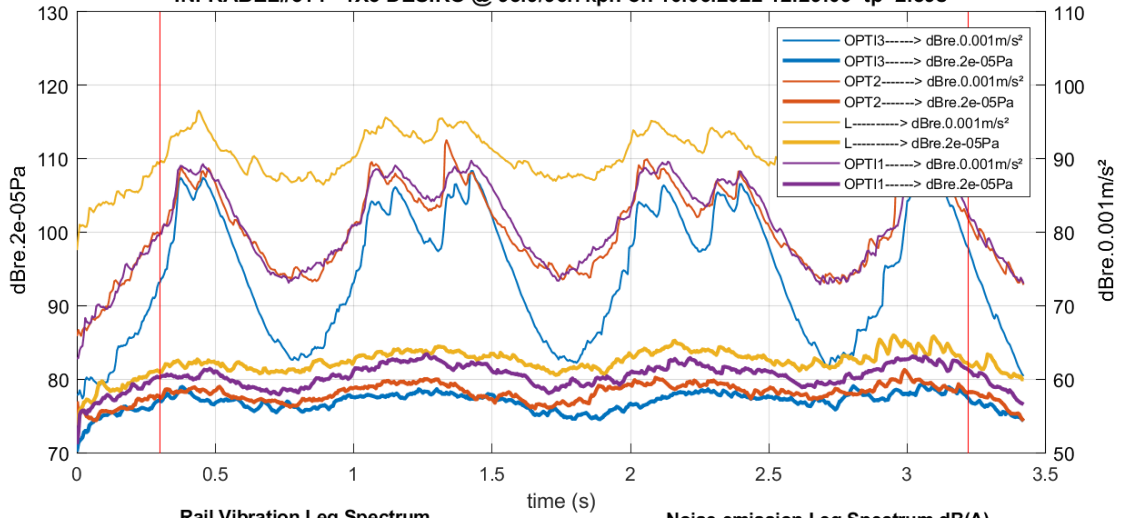


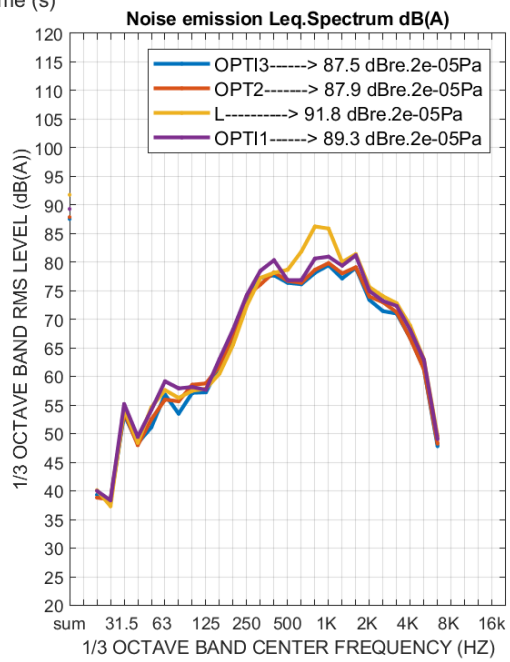
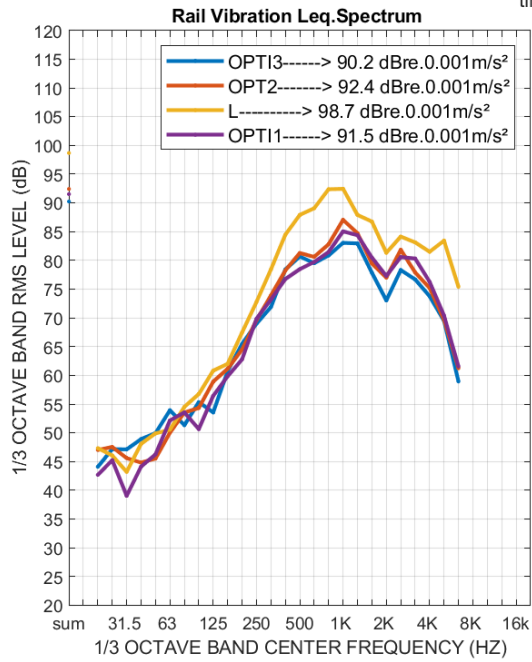
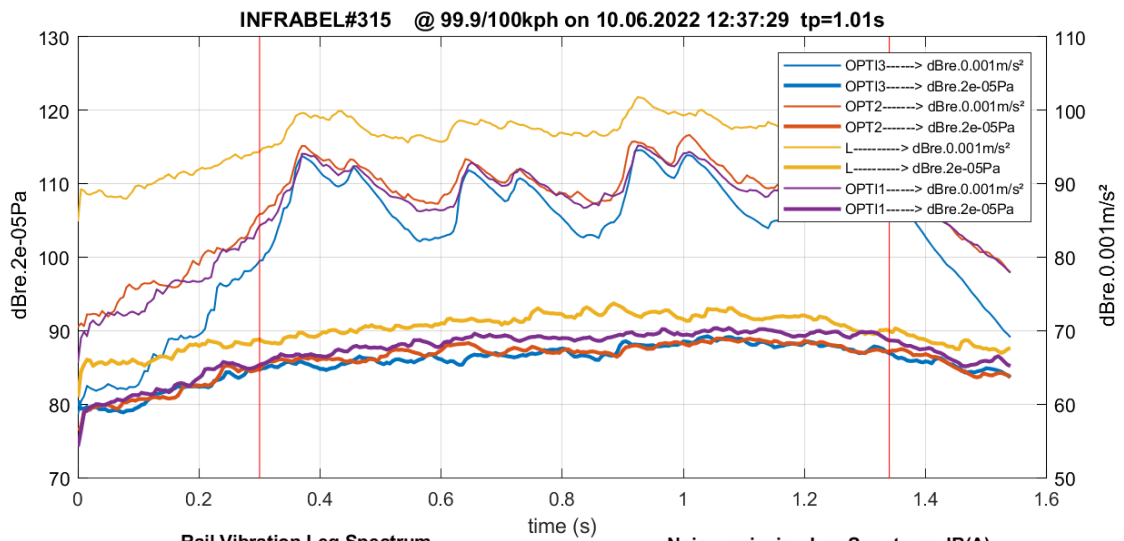


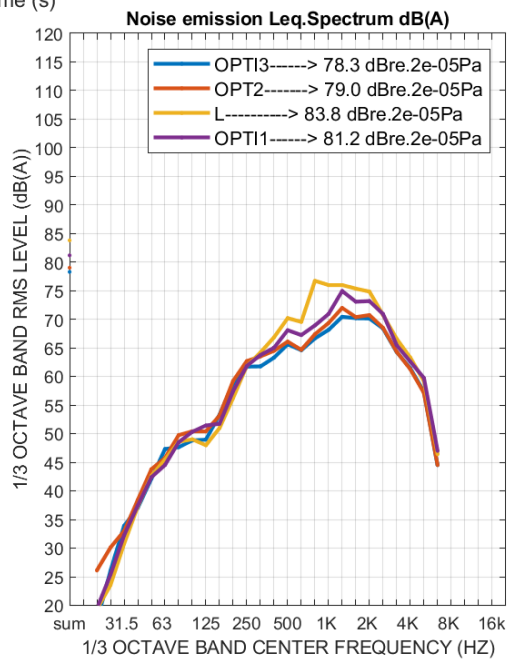
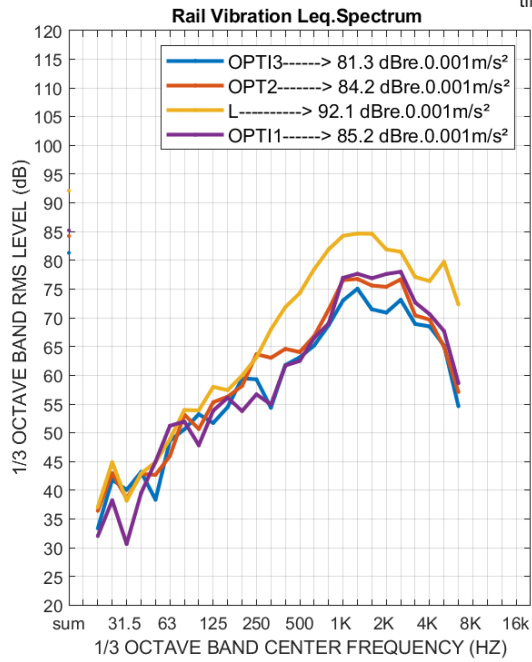
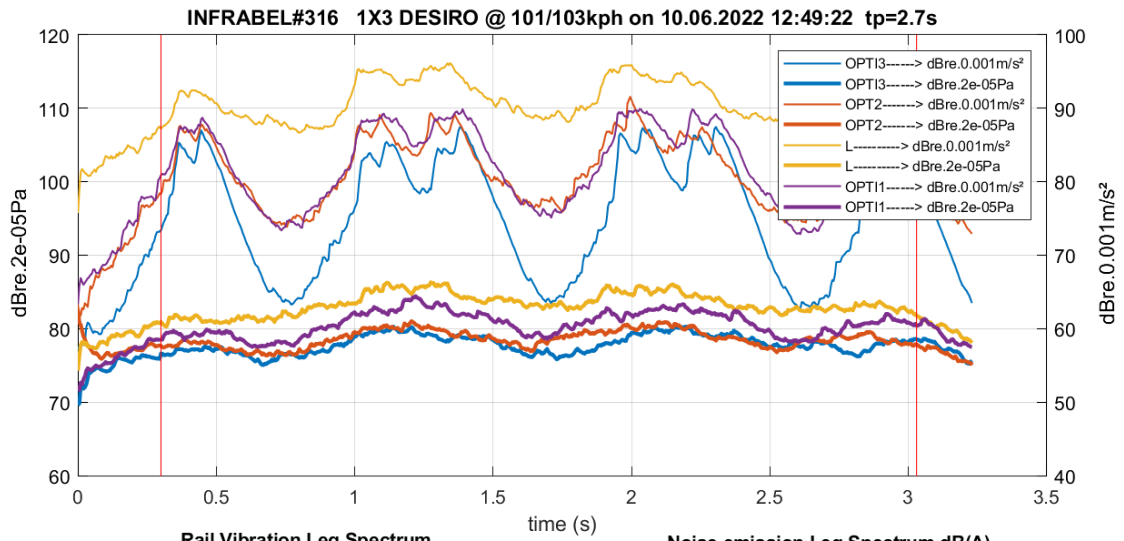


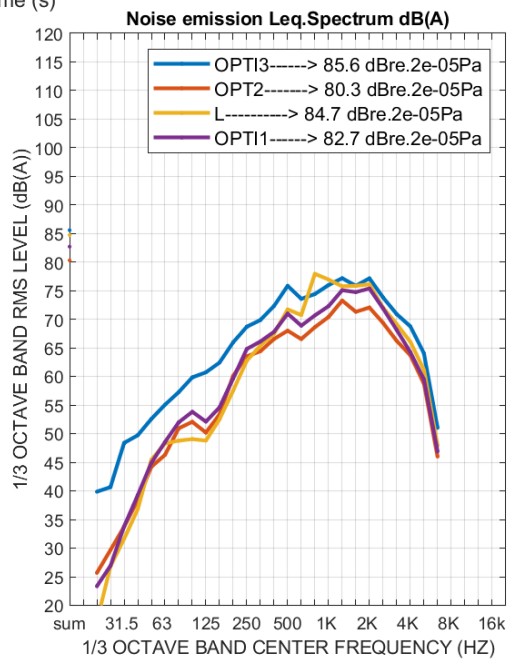
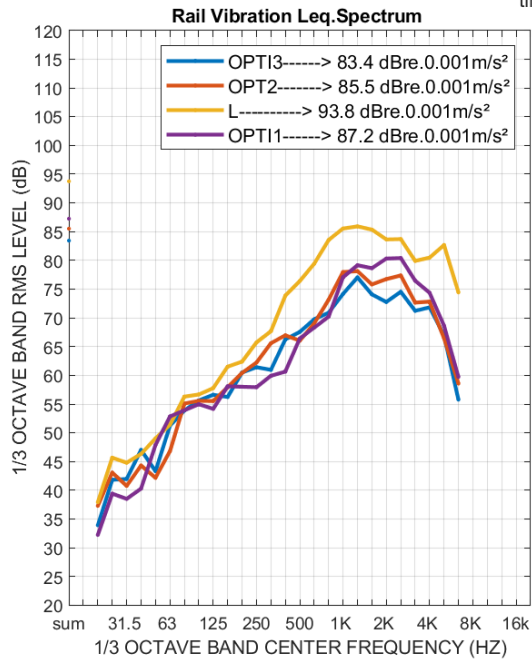
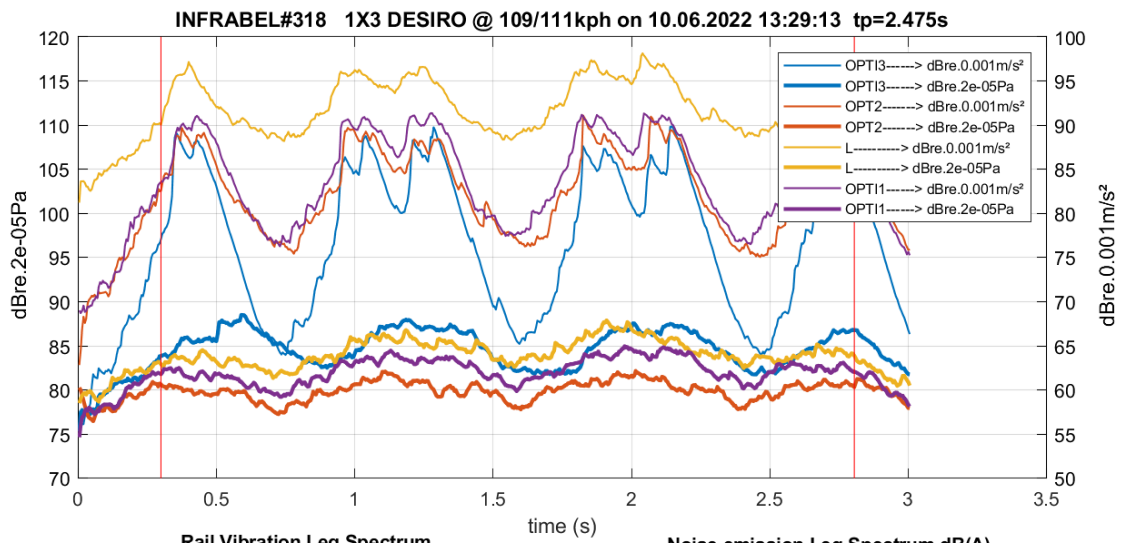


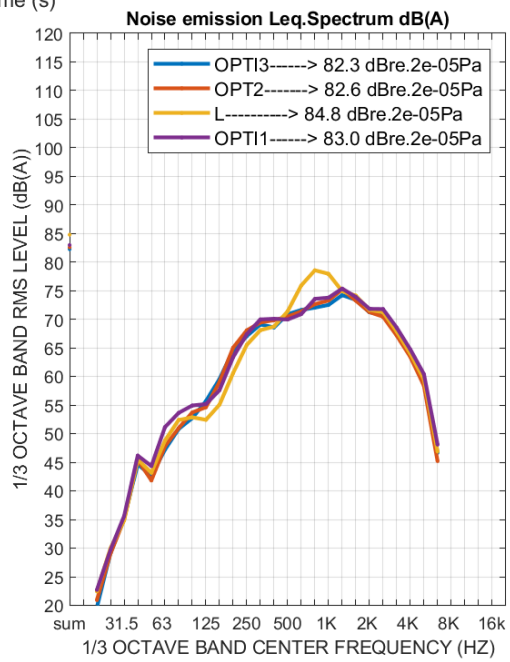
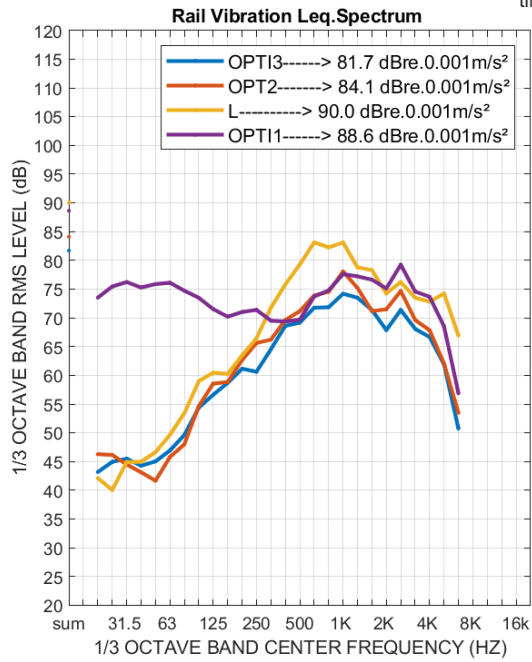
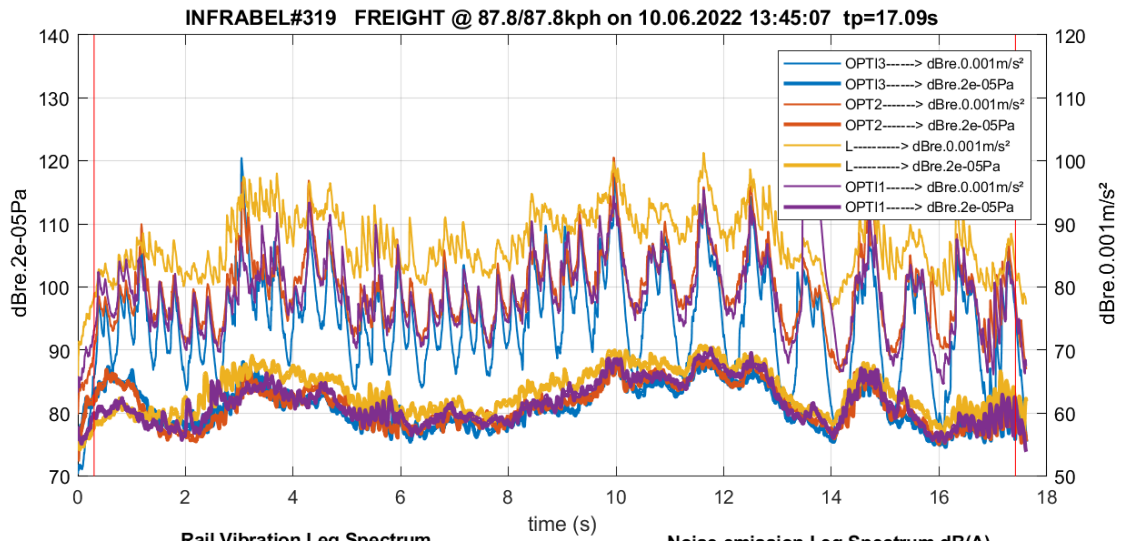
INFRABEL#314 1X3 DESIRO @ 95.9/96.7kph on 10.06.2022 12:29:09 tp=2.89s

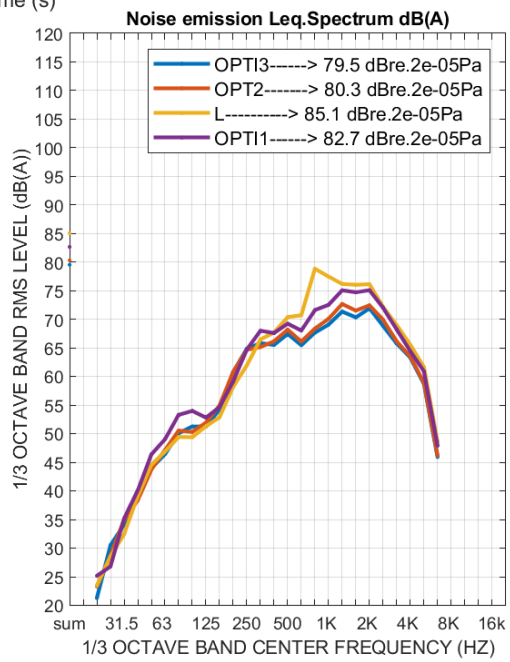
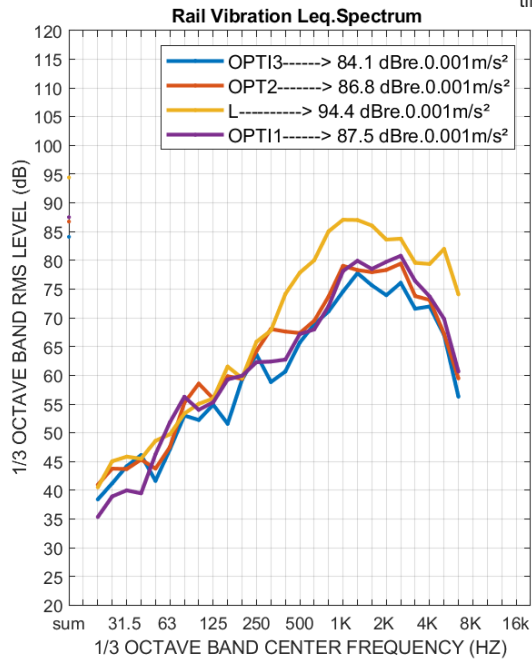
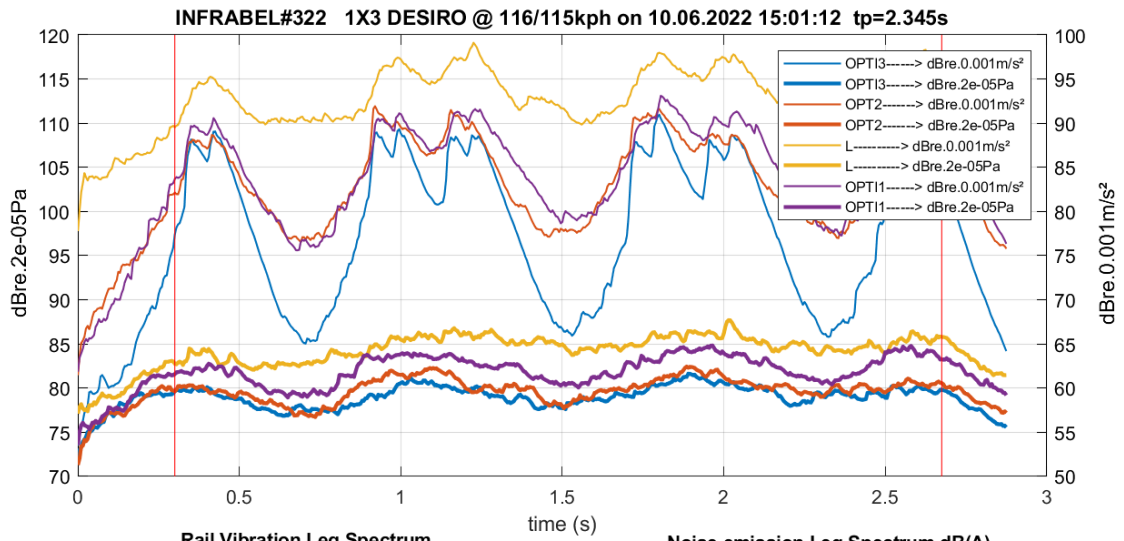


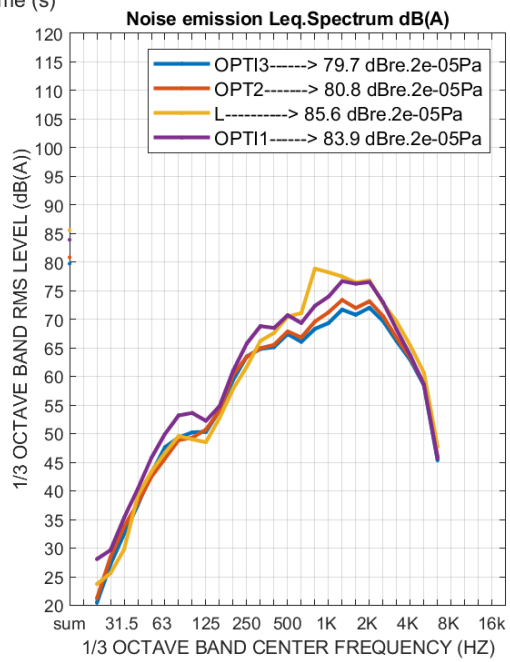
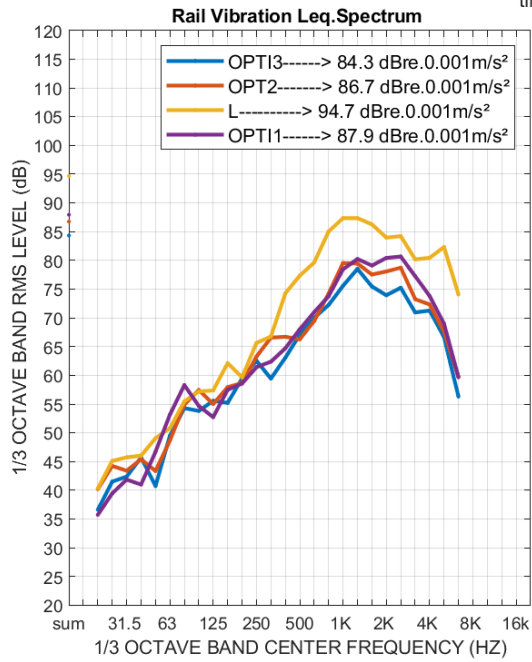
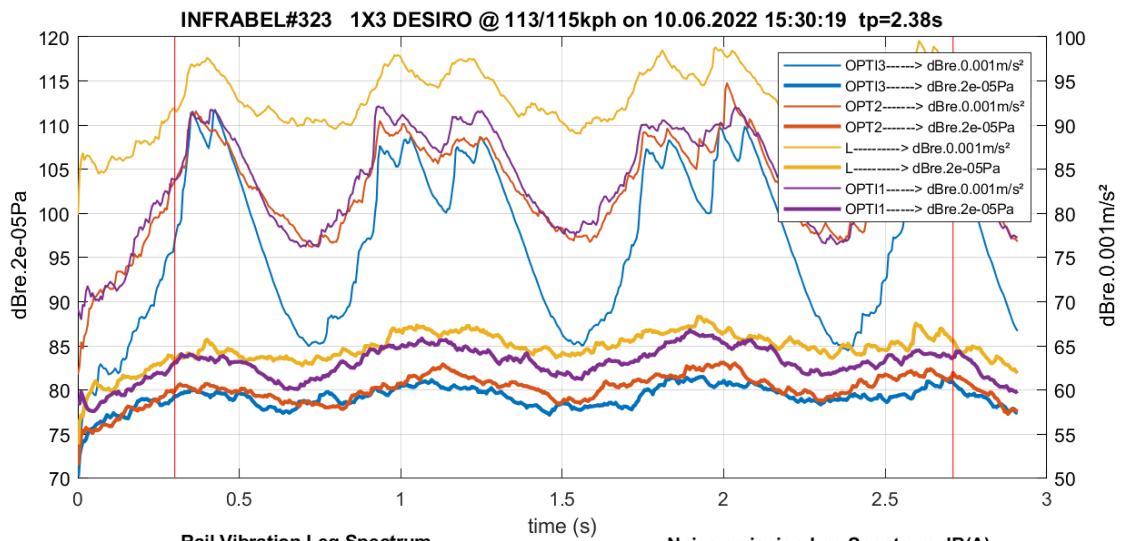




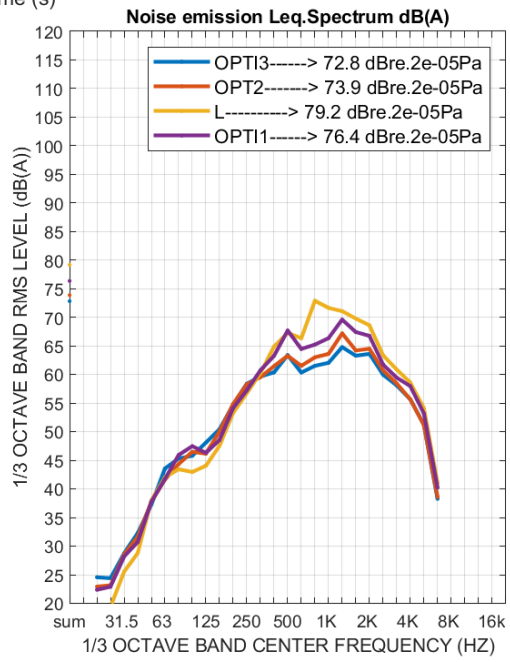
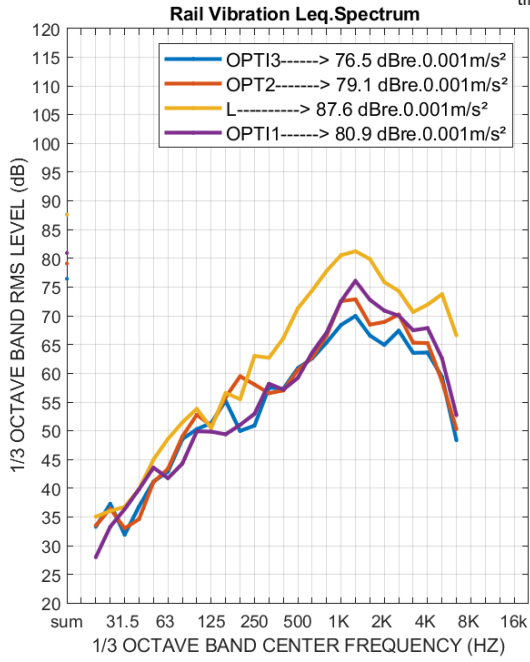
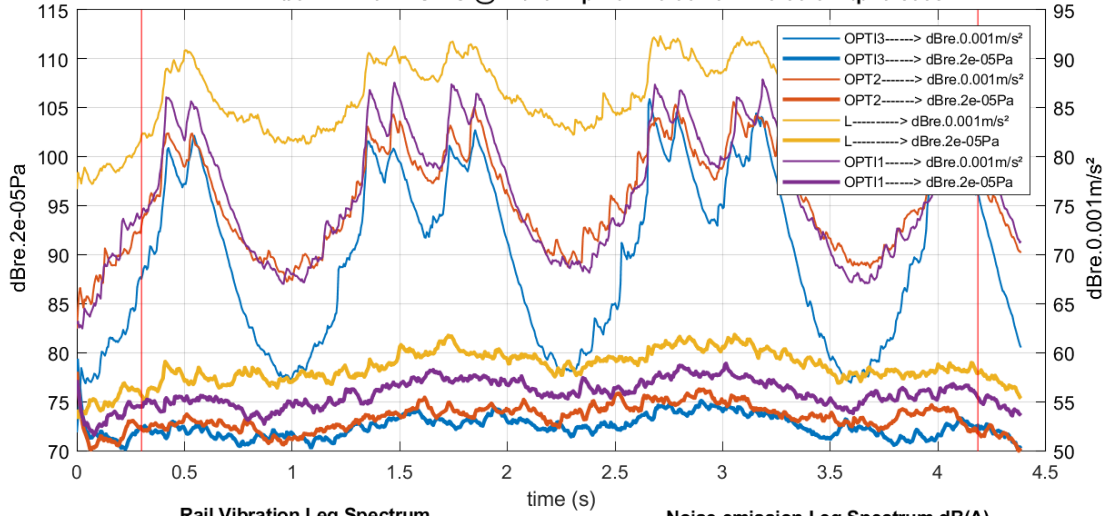


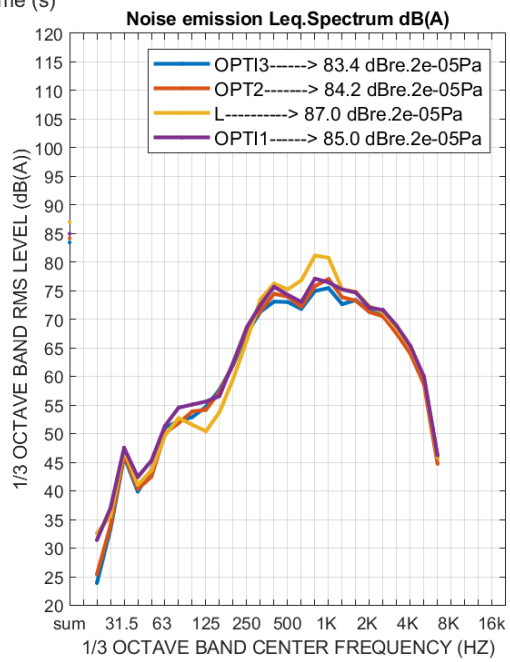
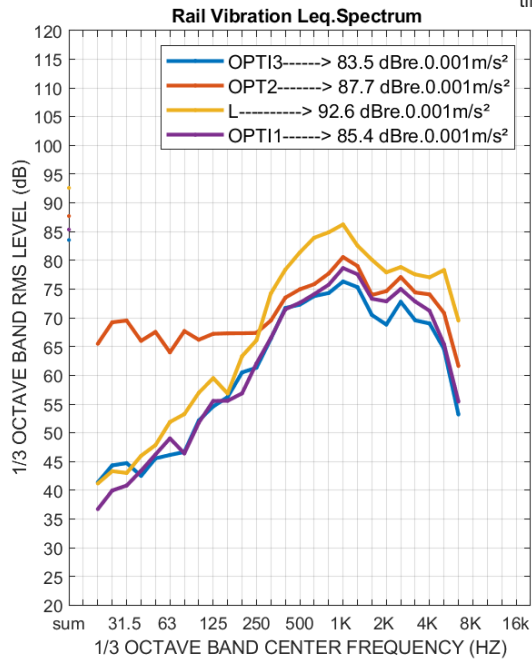
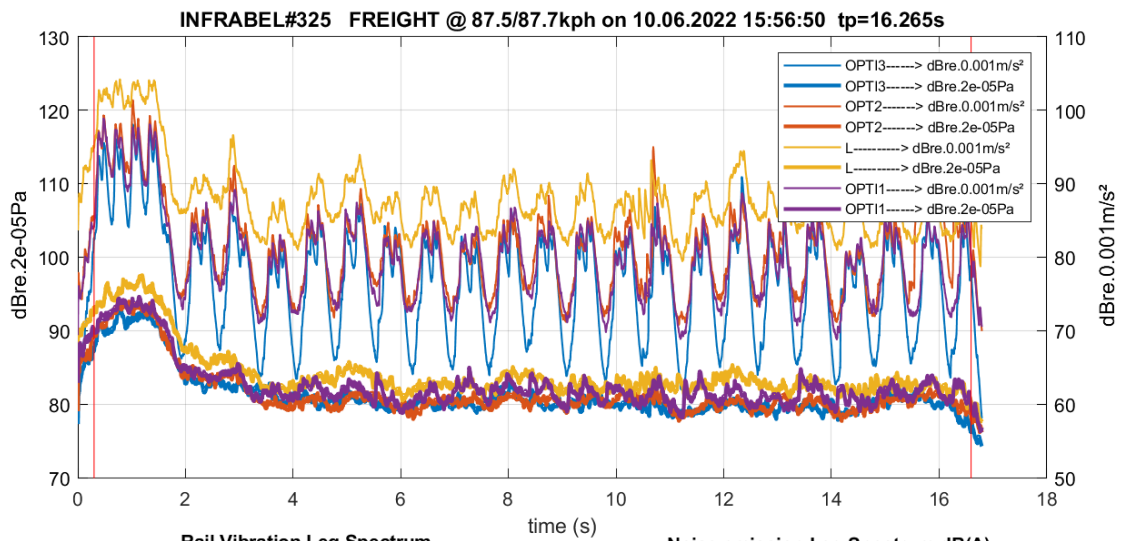


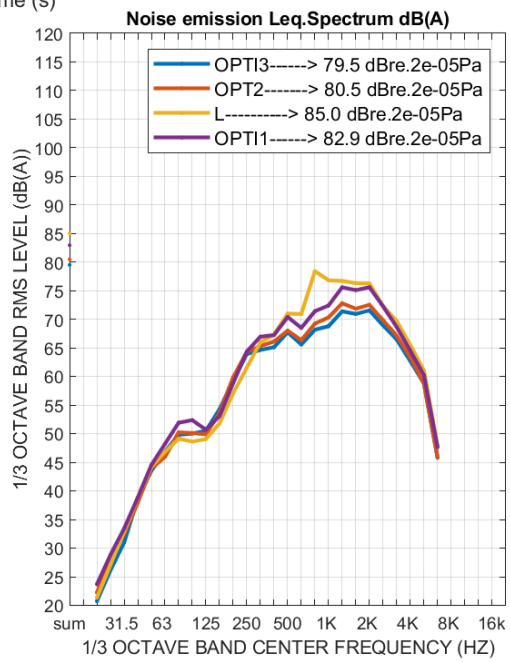
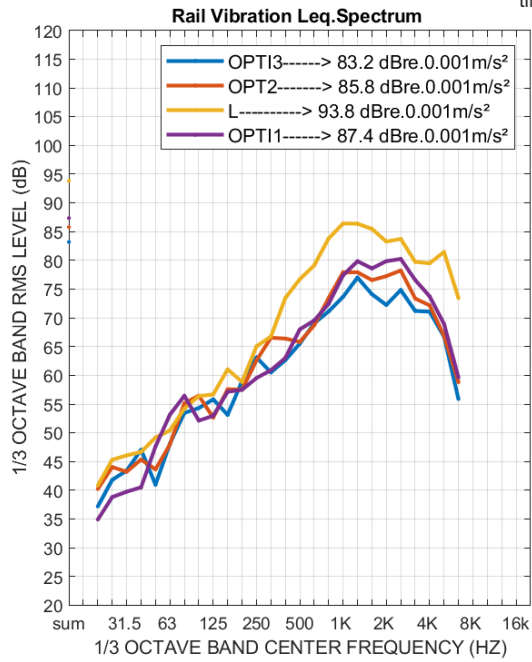
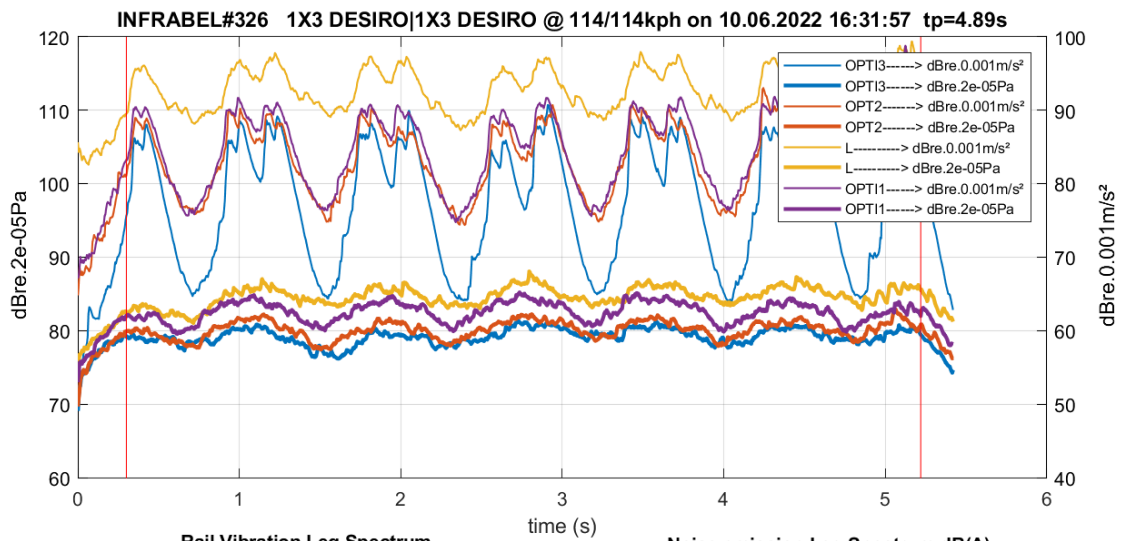


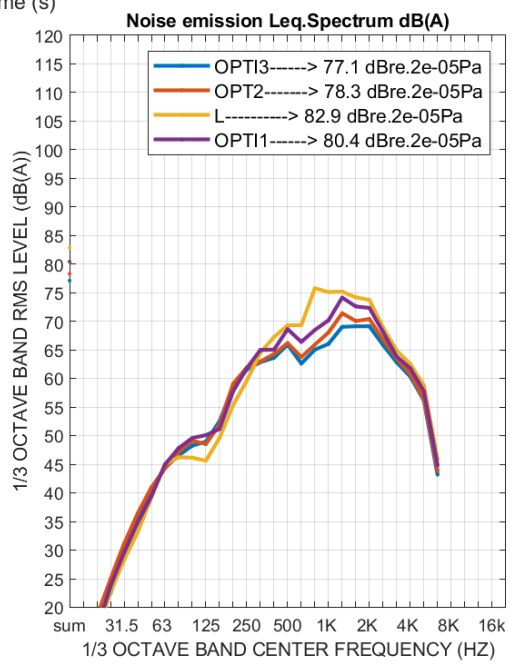
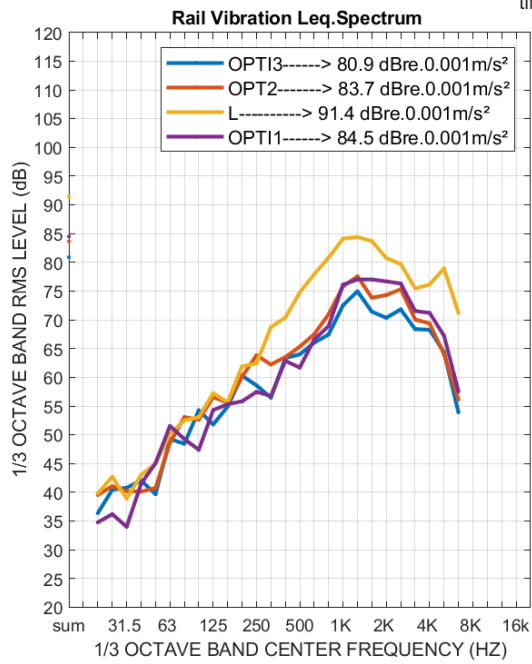
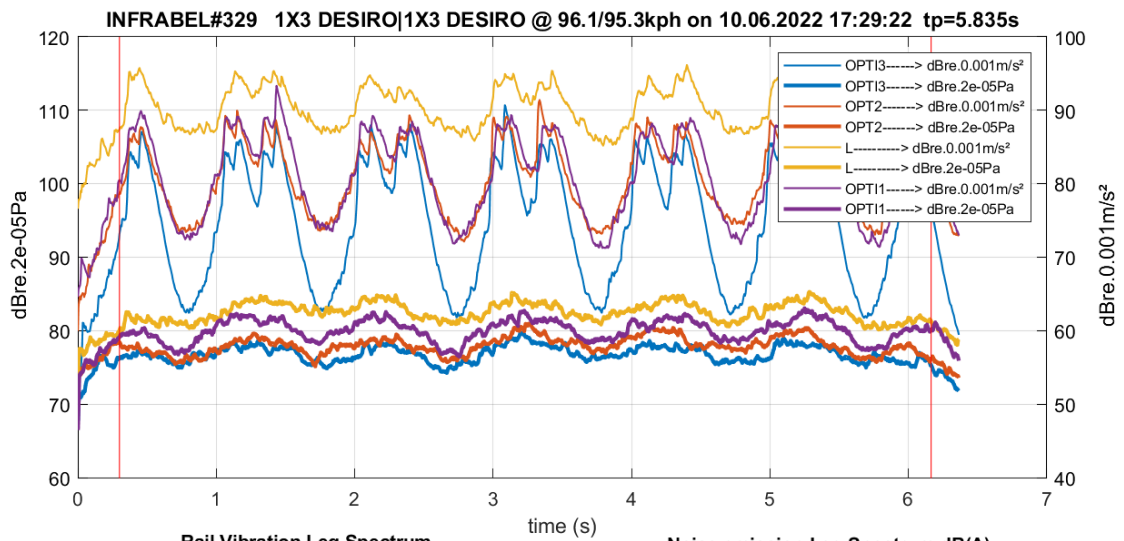


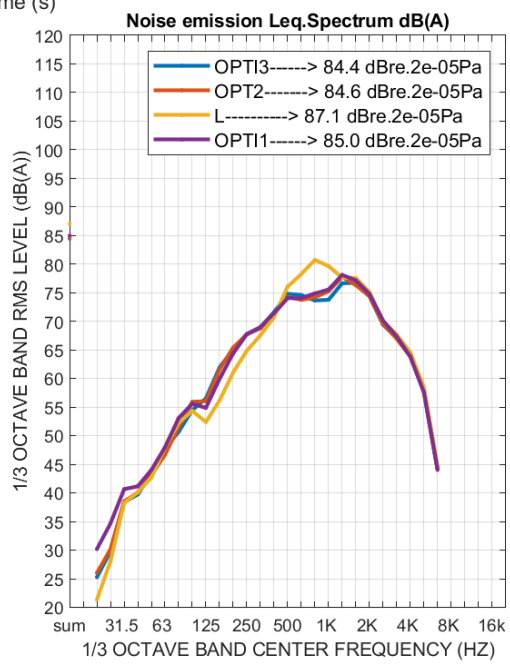
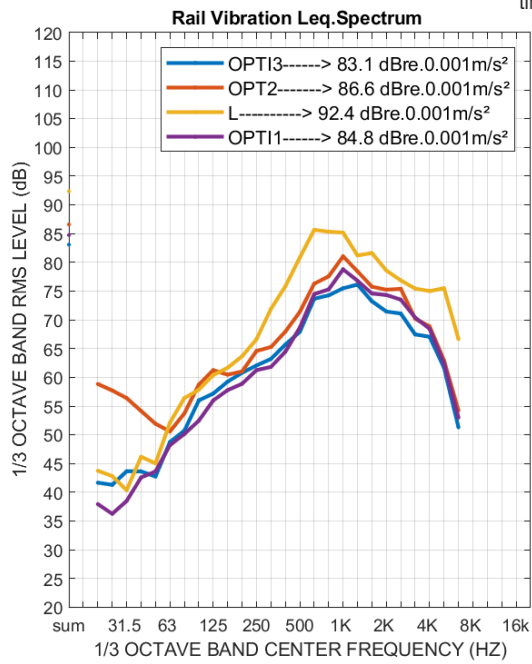
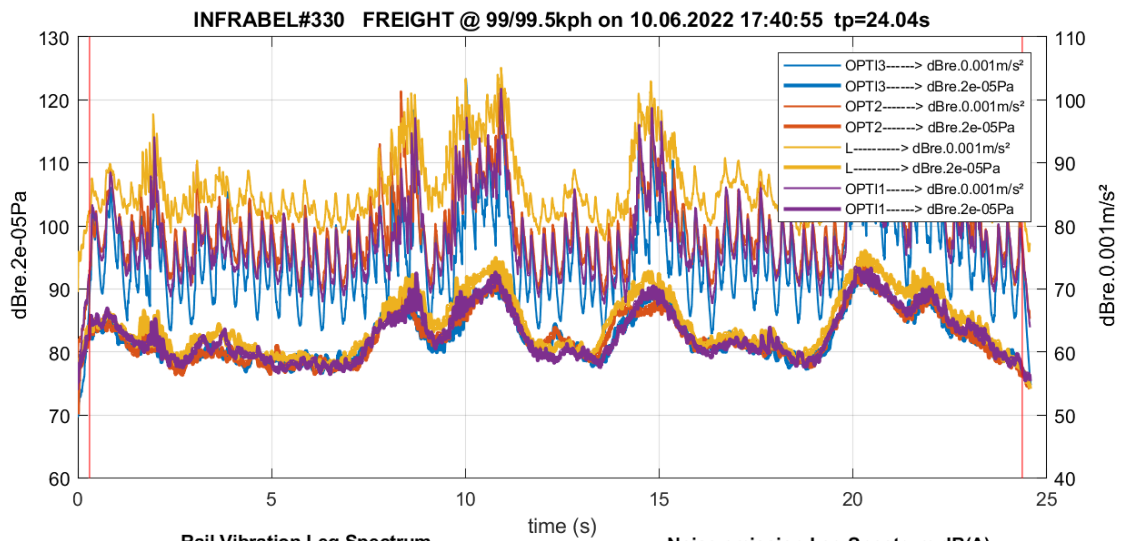
INFRABEL#324 1X3 DESIRO @ 71/70.4kph on 10.06.2022 15:50:32 tp=3.855s

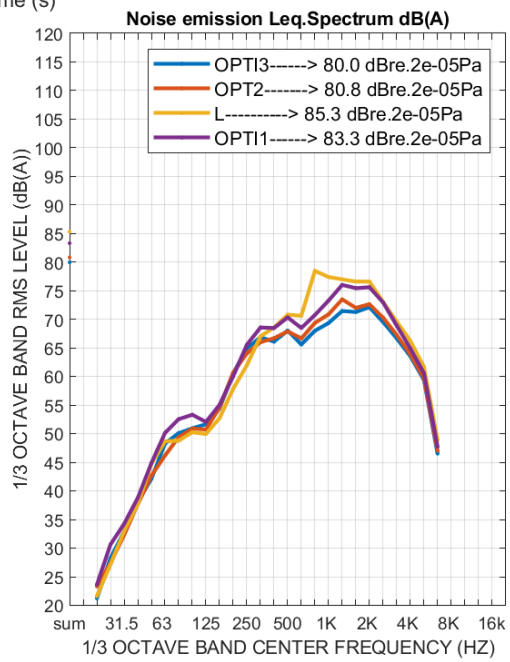
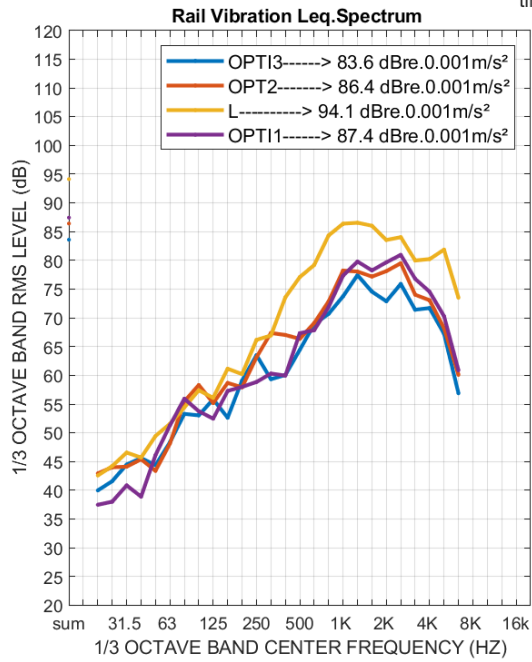
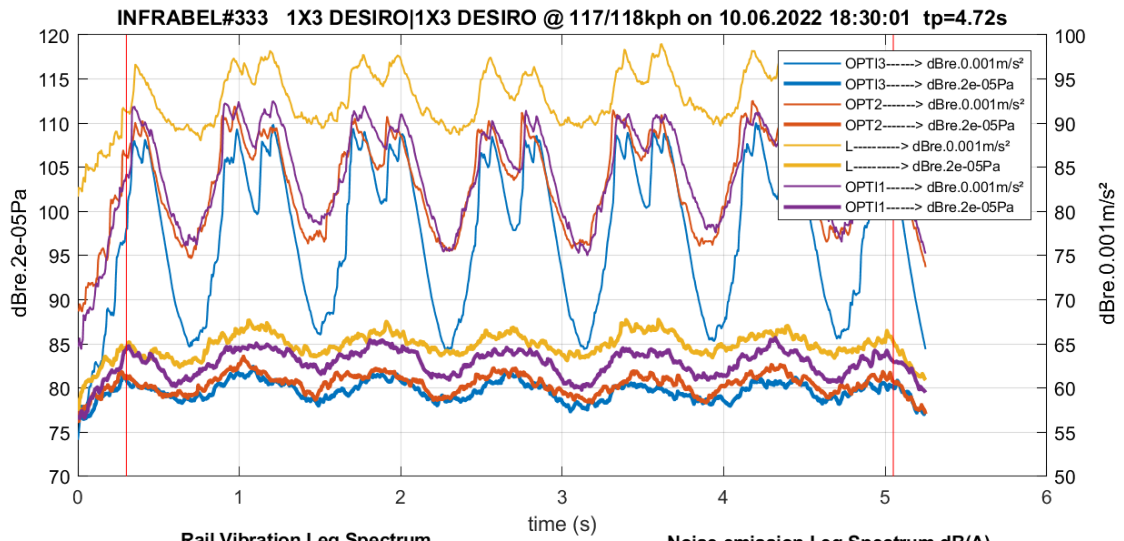


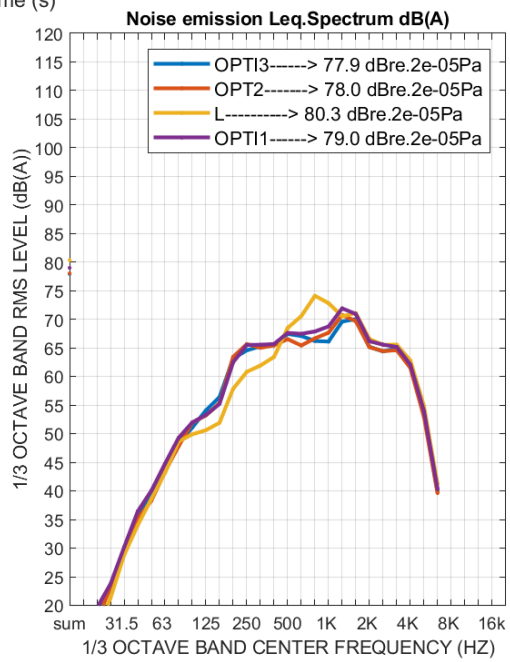
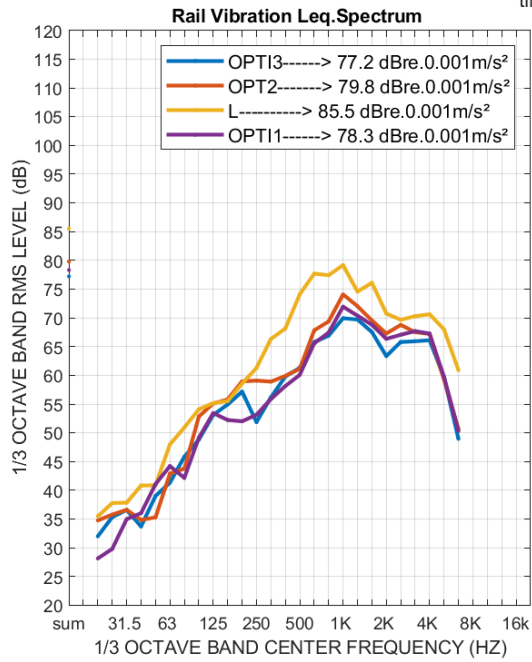
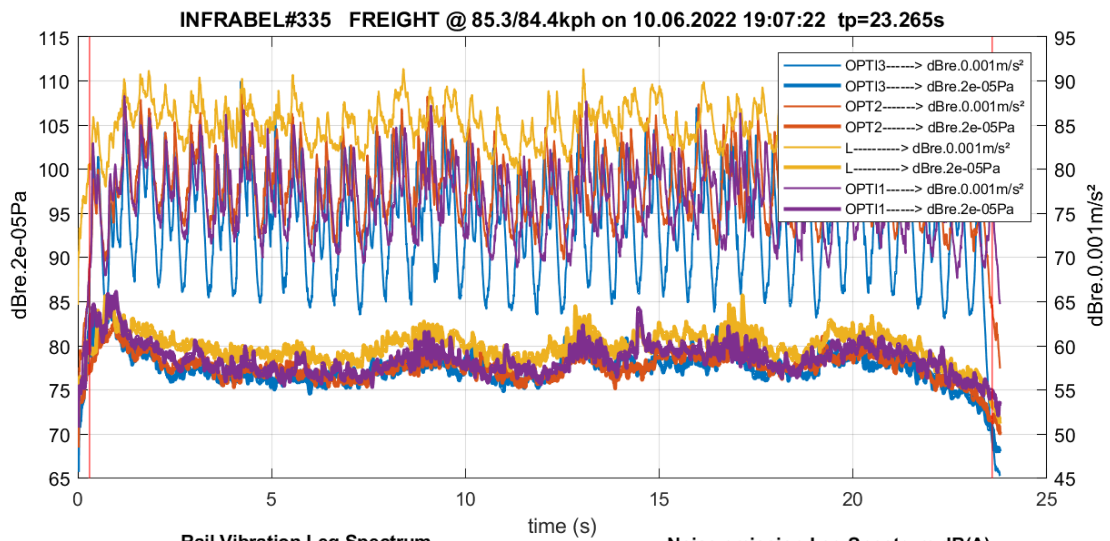


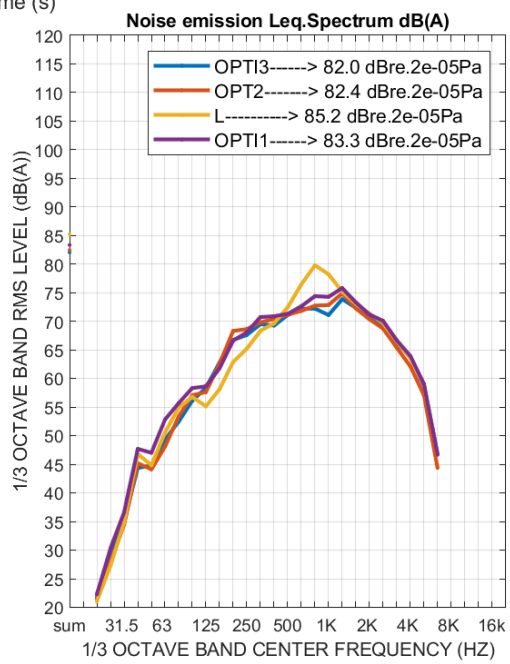
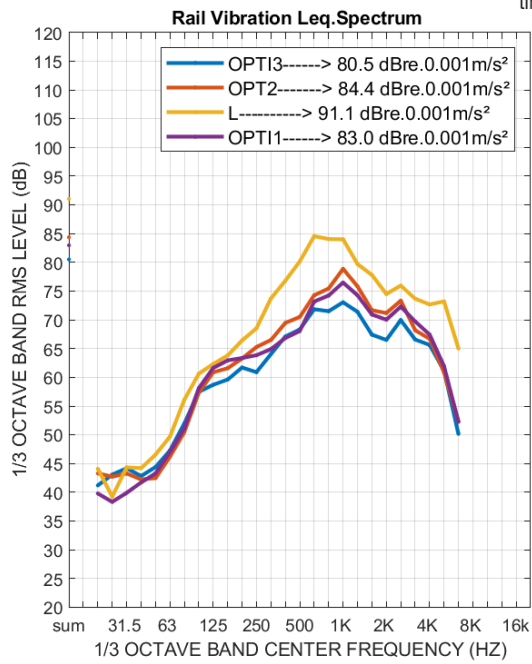
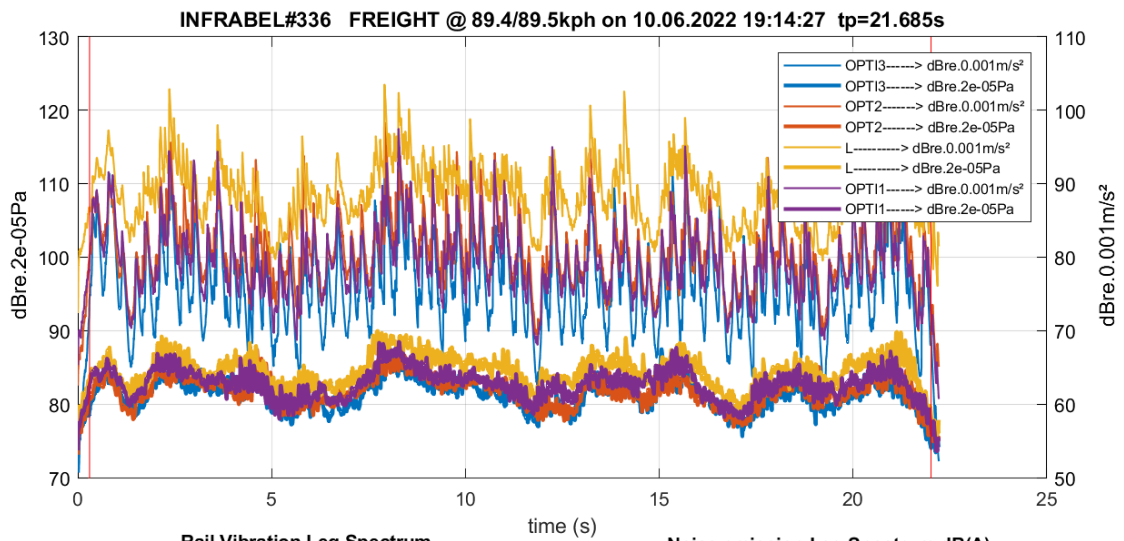


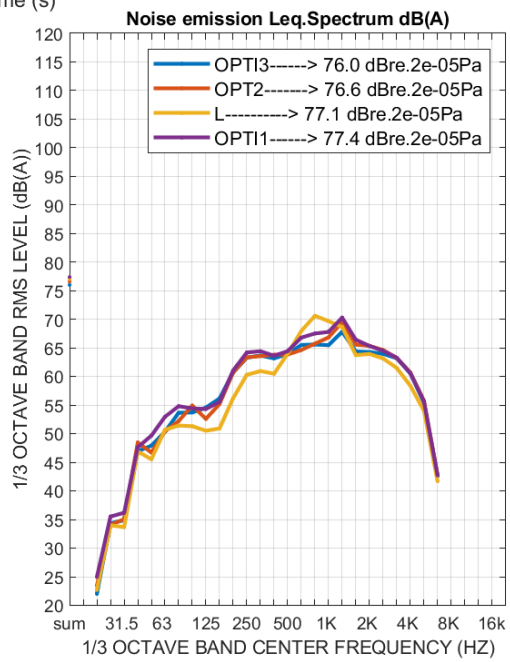
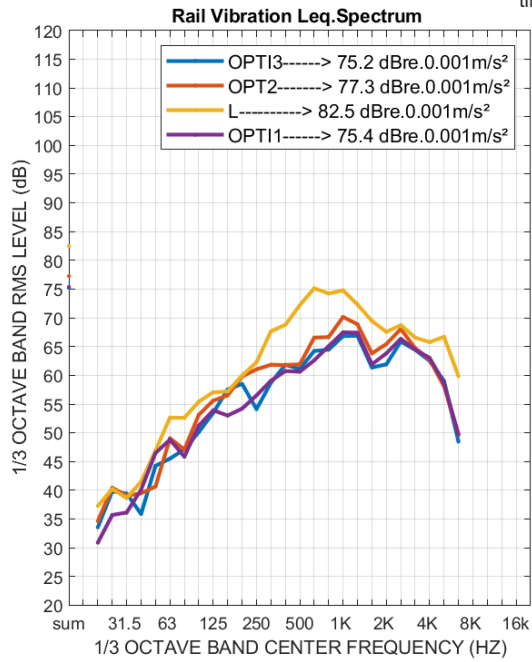
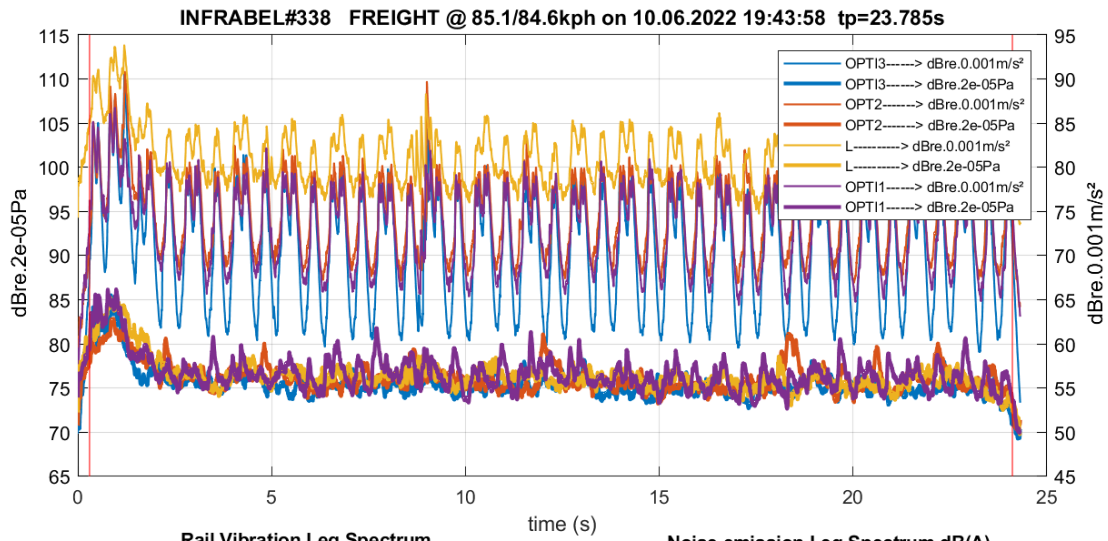


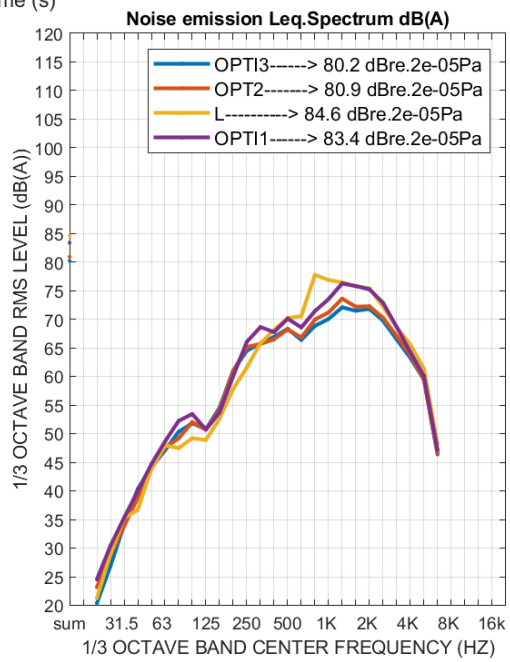
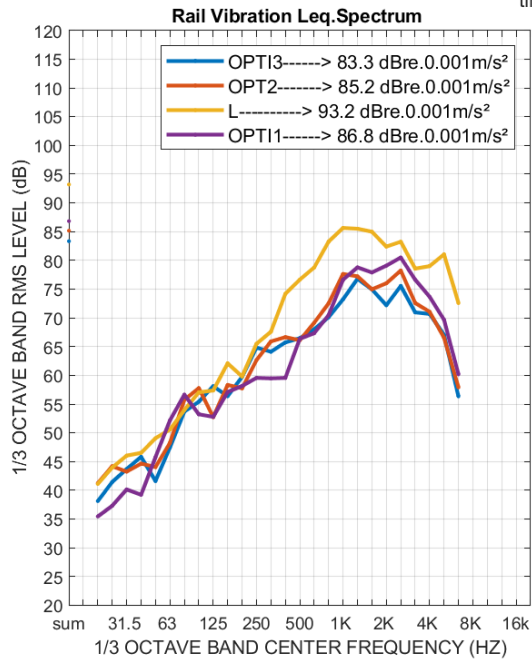
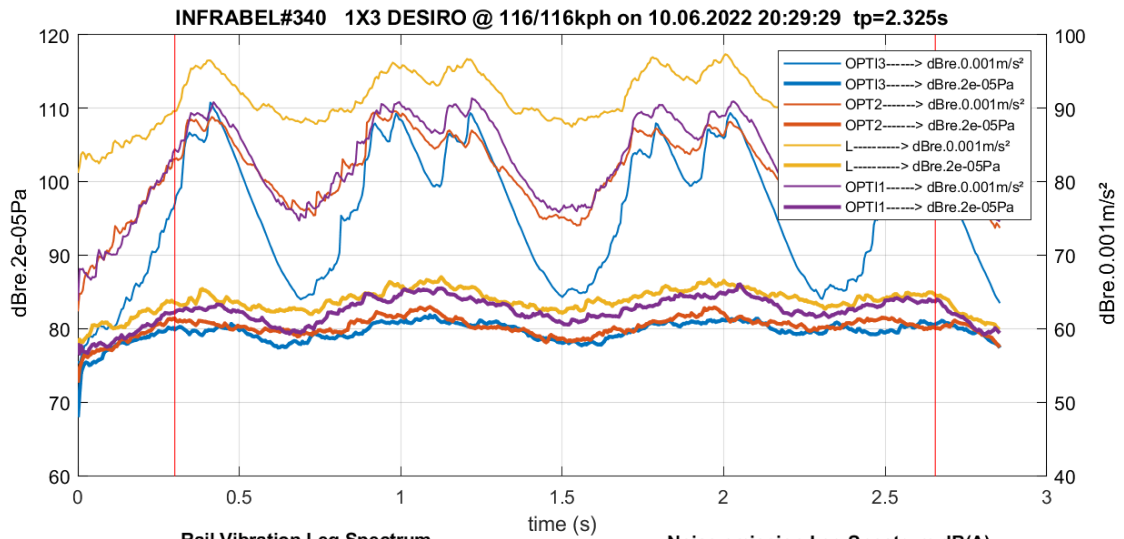


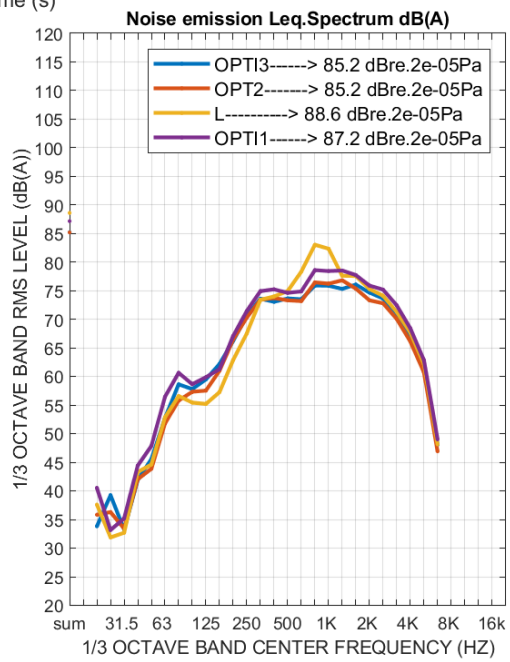
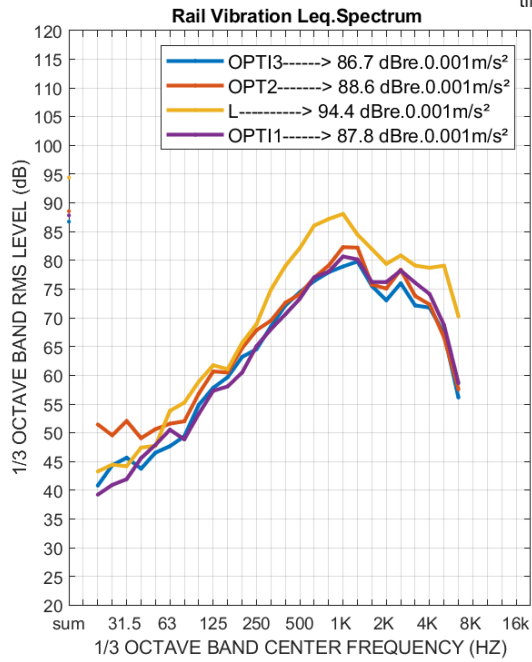
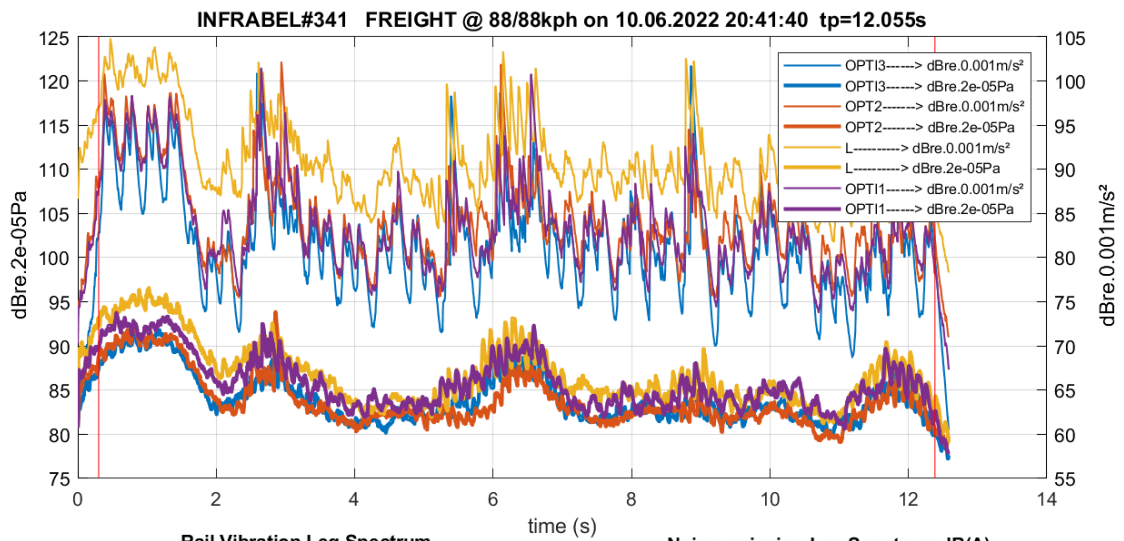


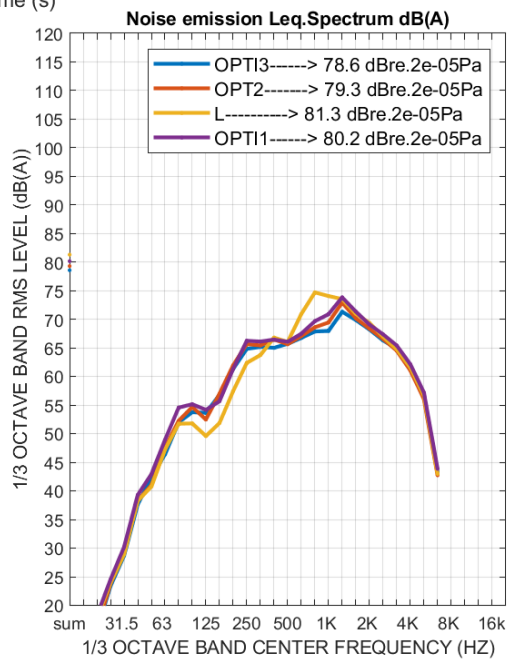
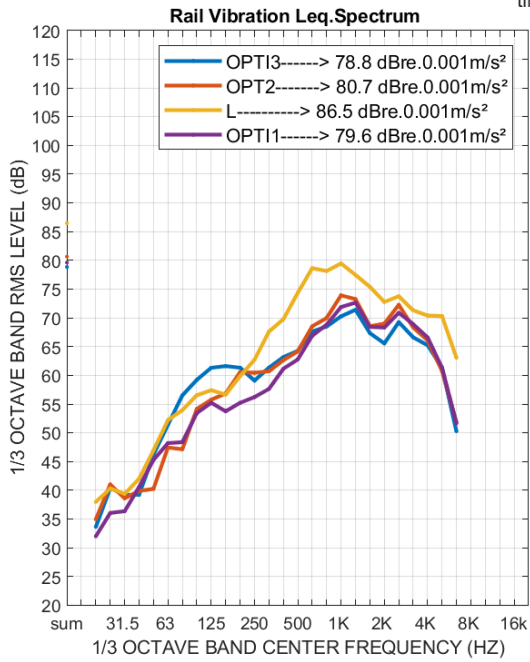
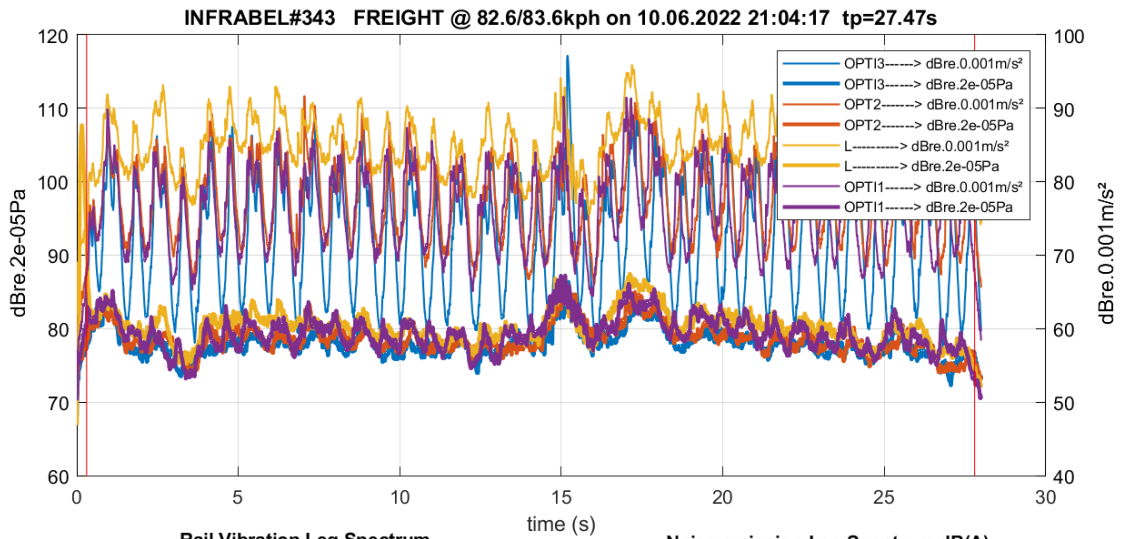


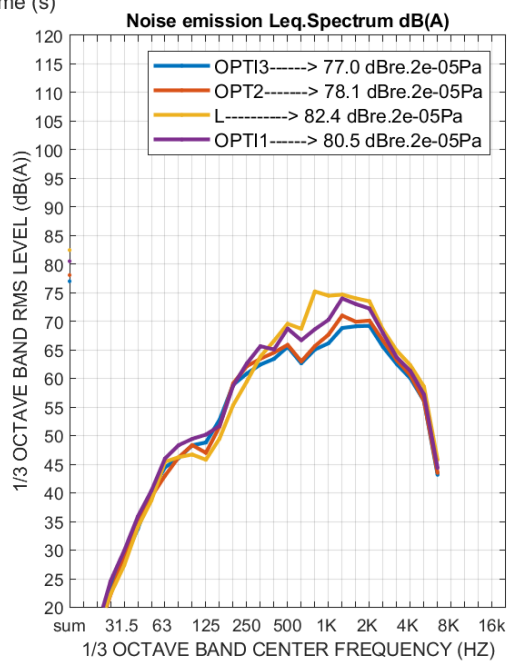
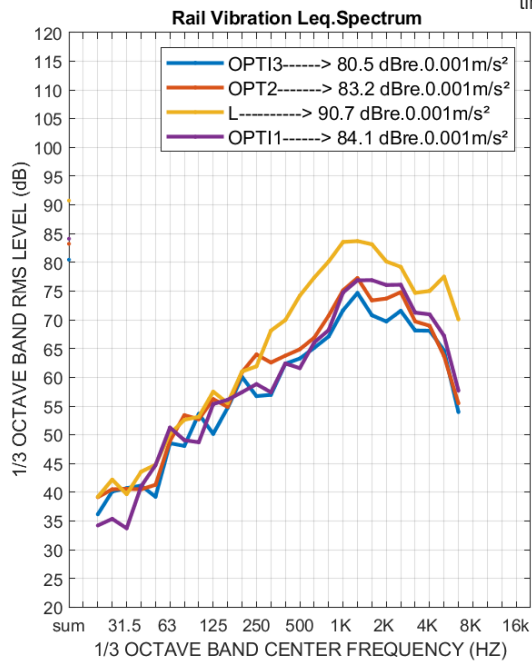
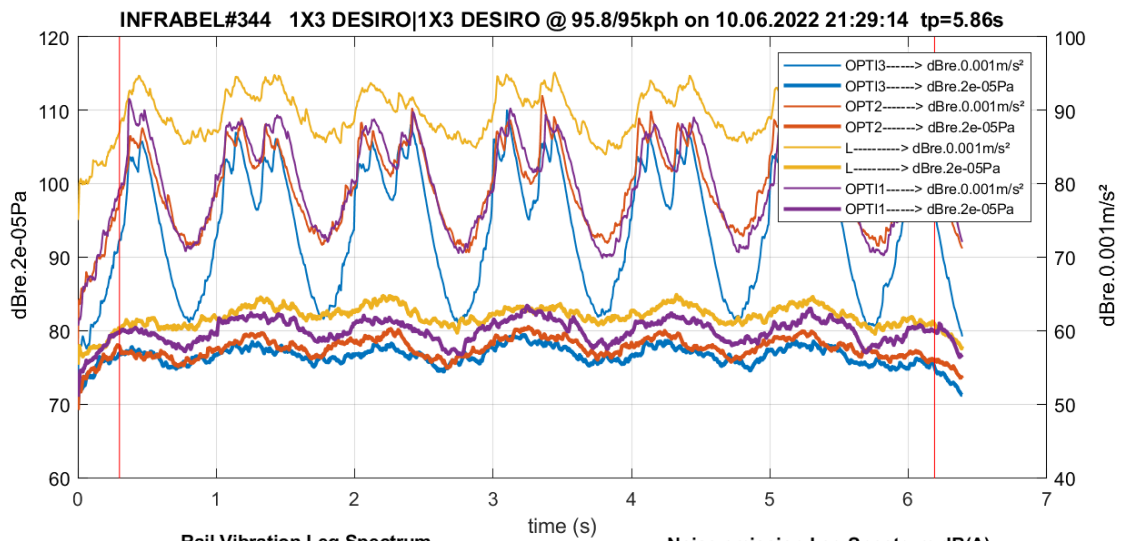




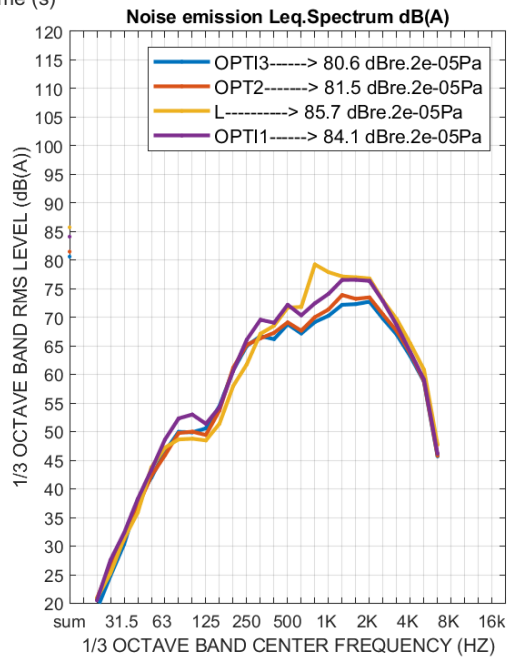
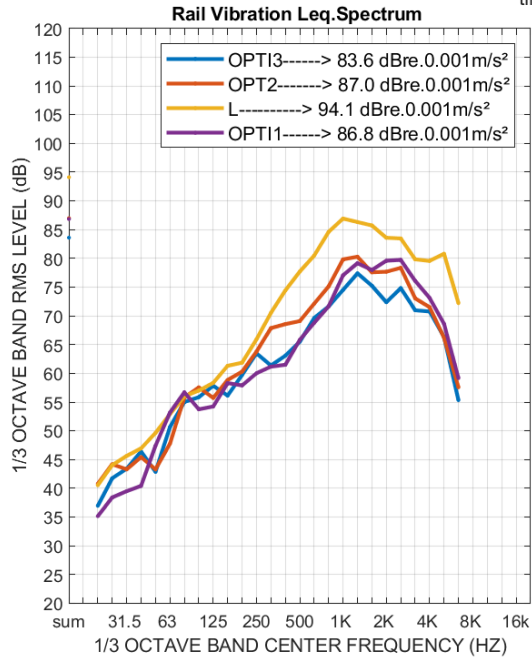
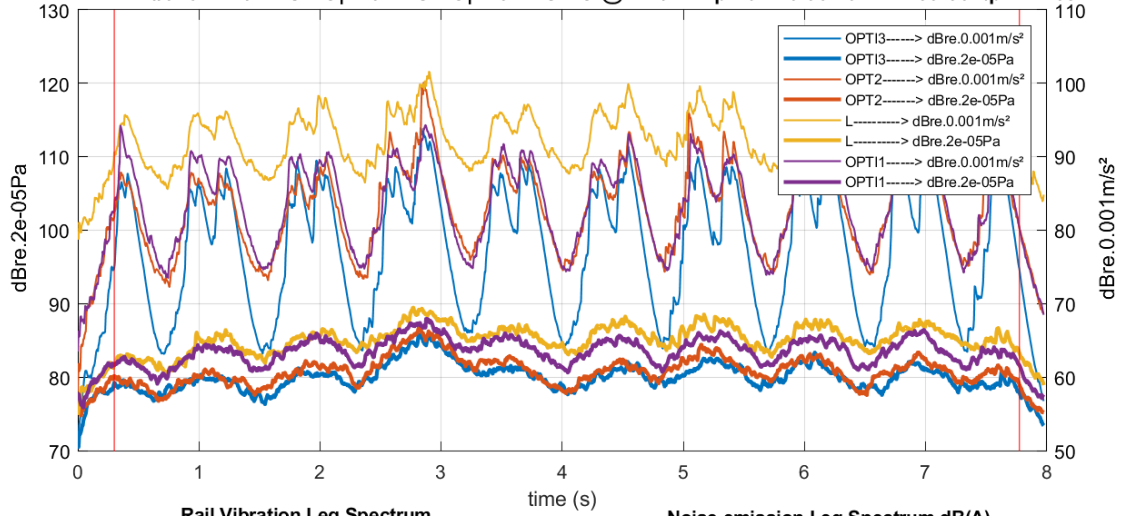


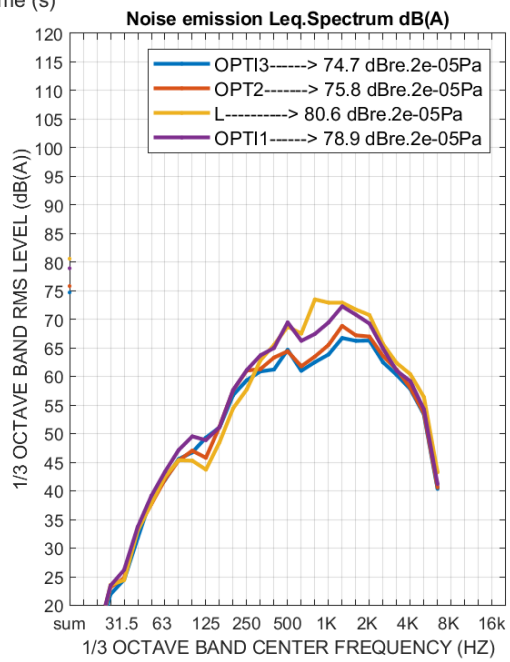
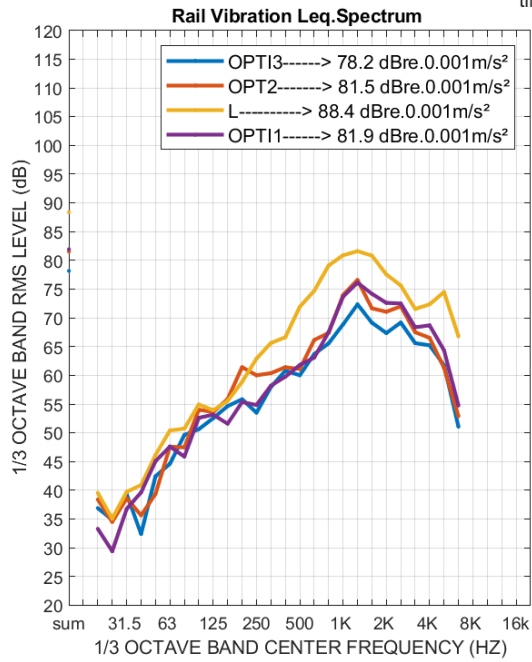
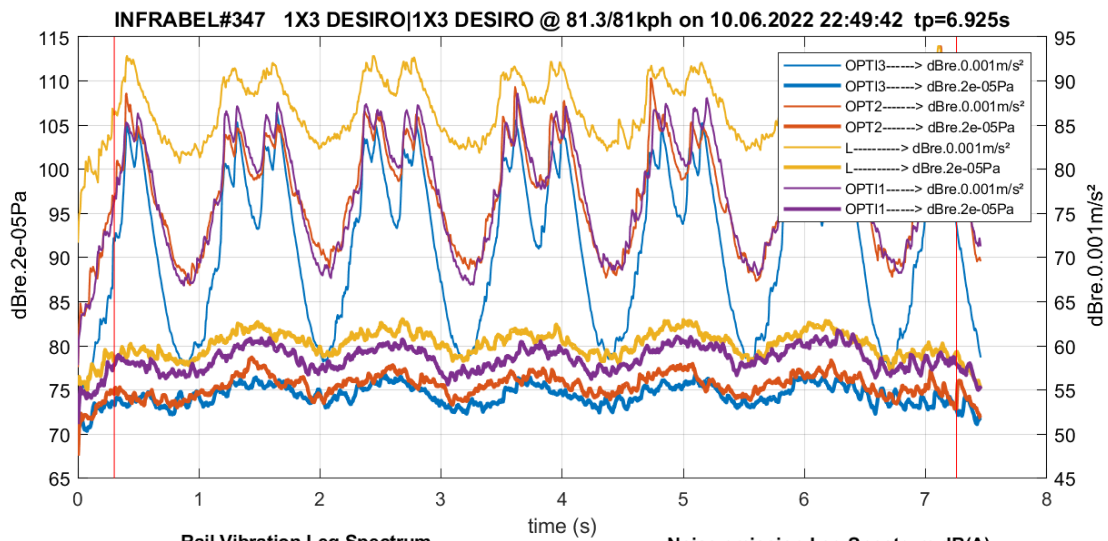


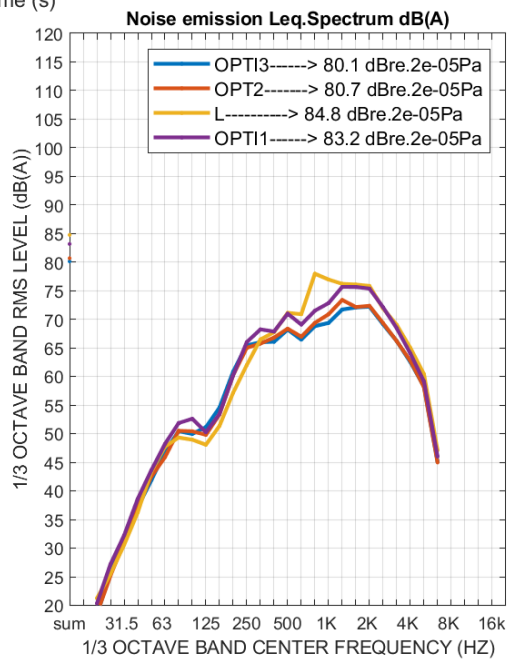
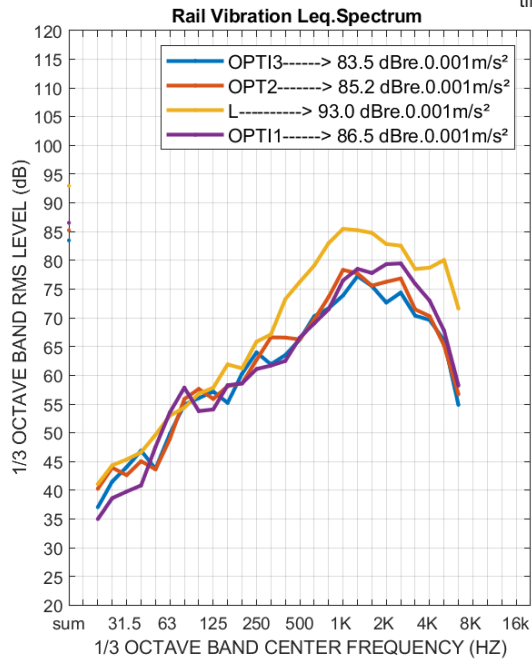
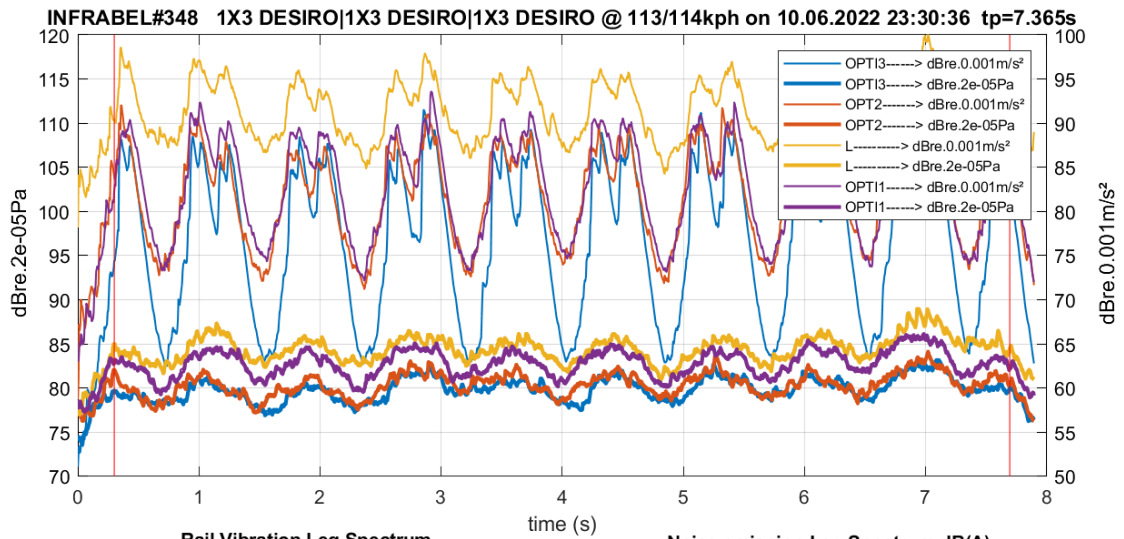


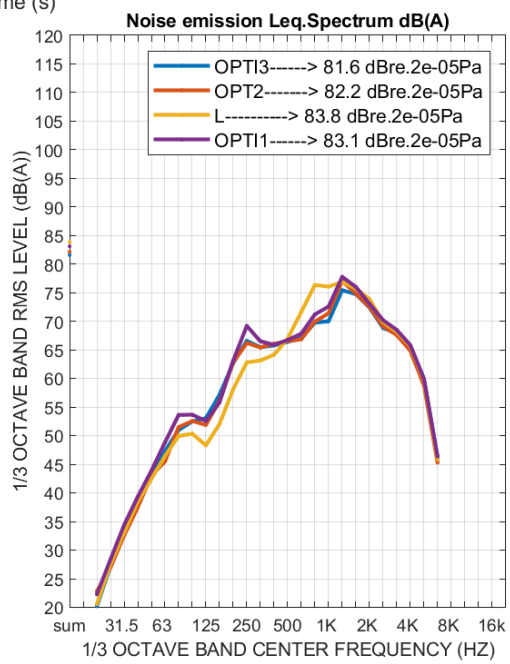
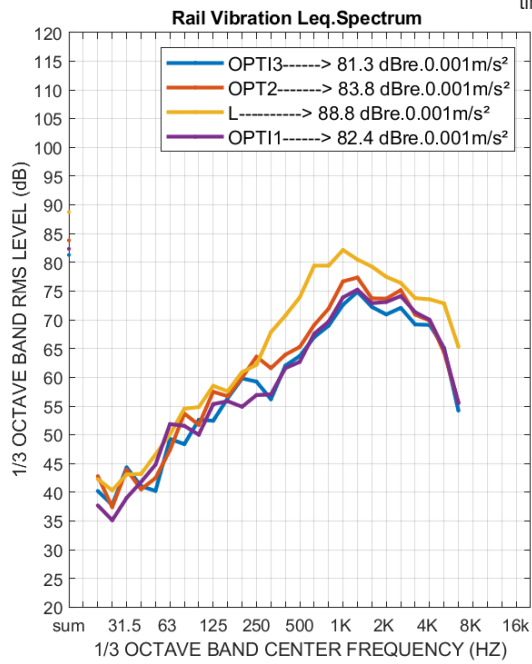
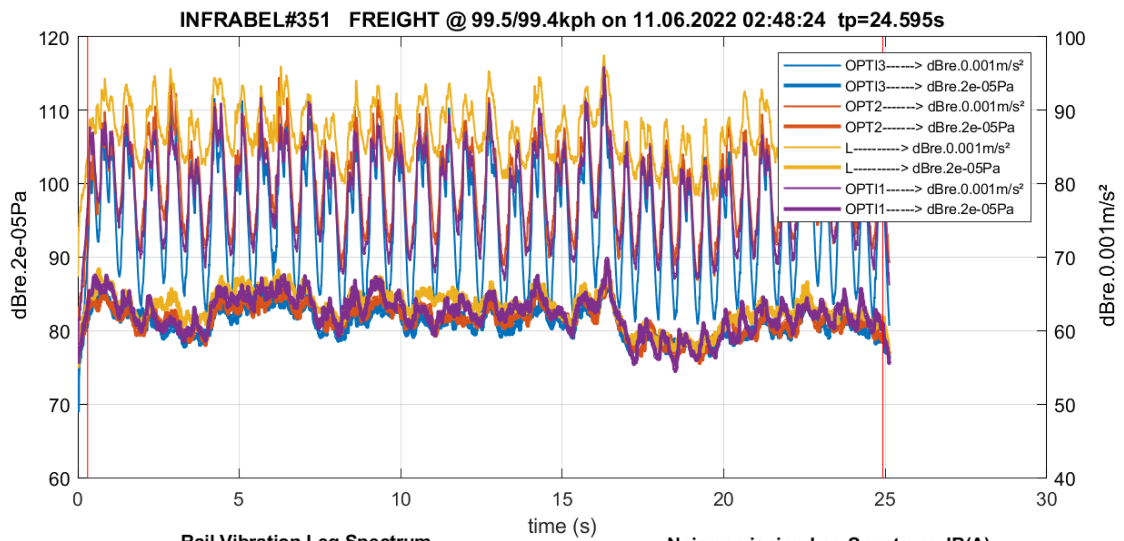


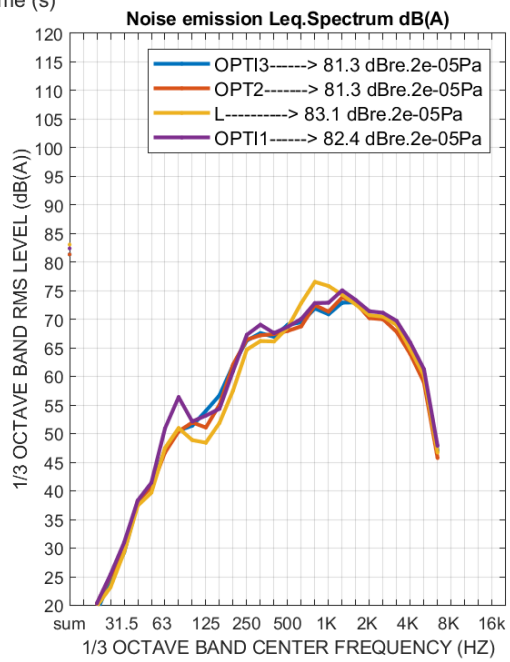
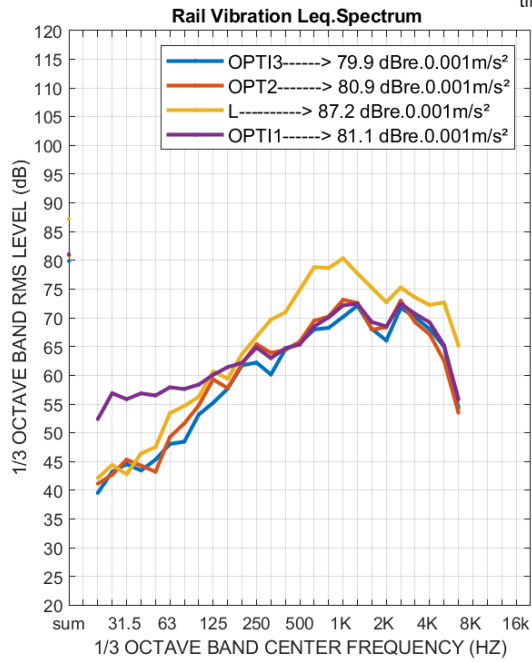
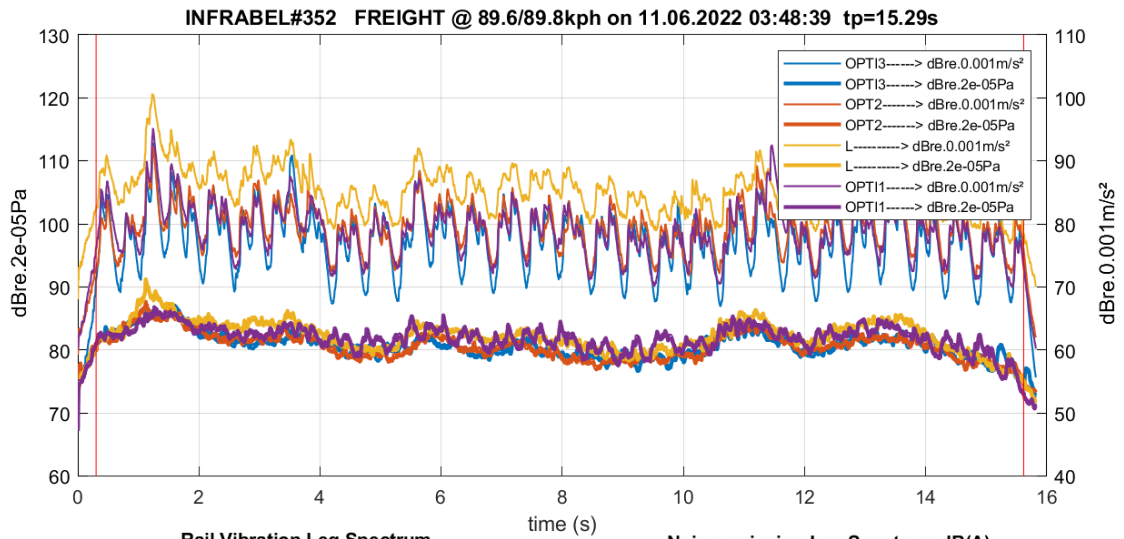
INFRABEL#346 1X3 DESIRO|1X3 DESIRO|1X3 DESIRO @ 114/114kph on 10.06.2022 22:30:30 tp=7.445s

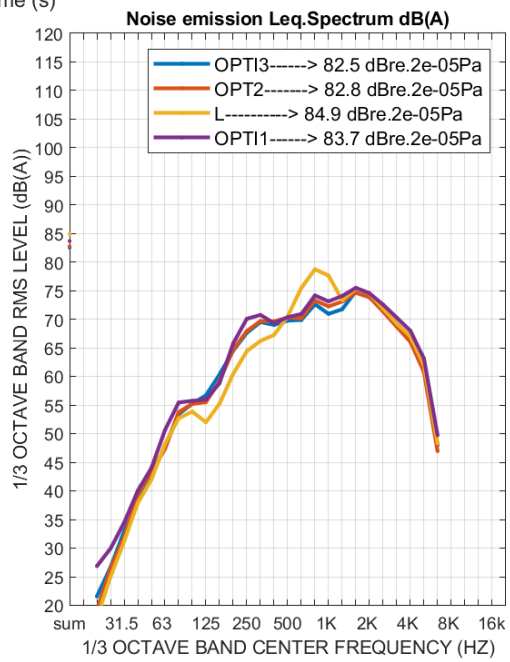
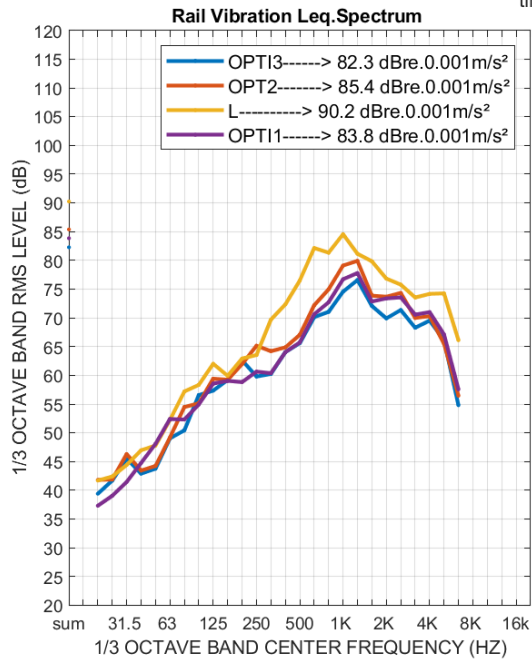
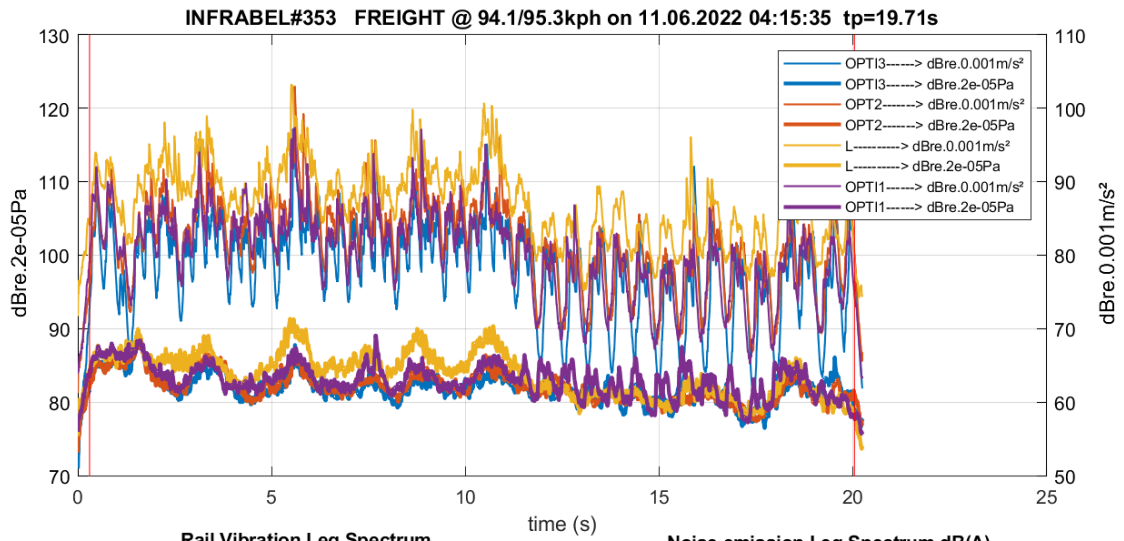


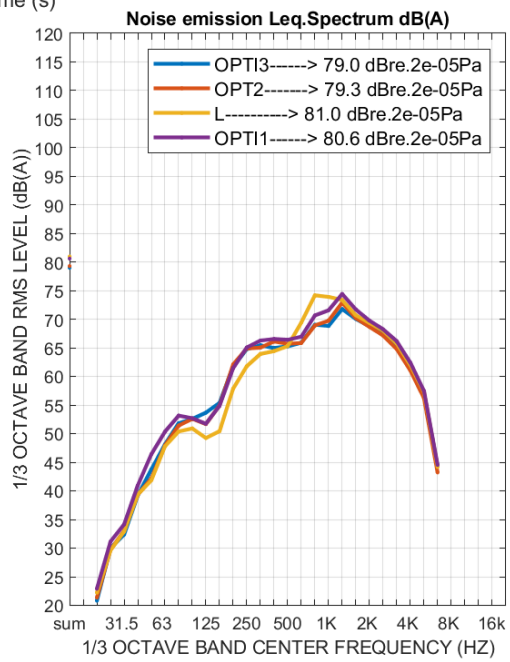
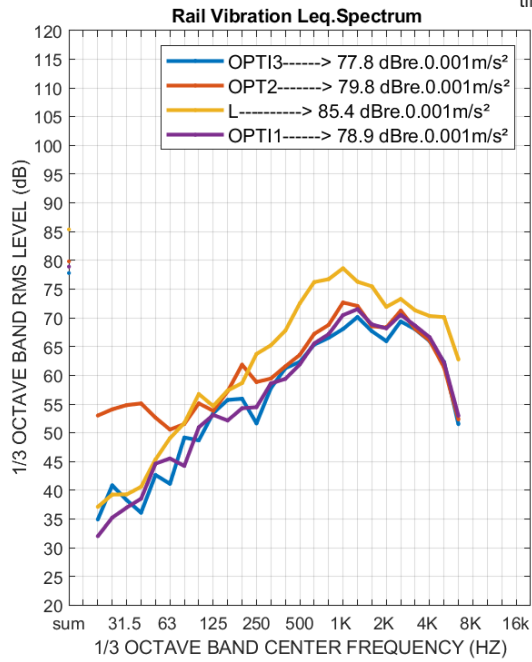
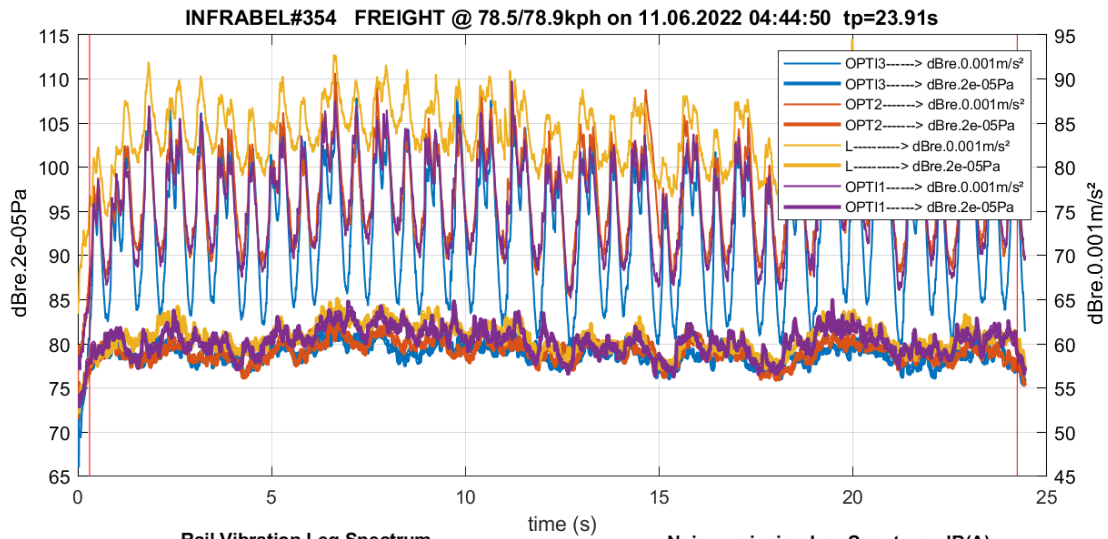




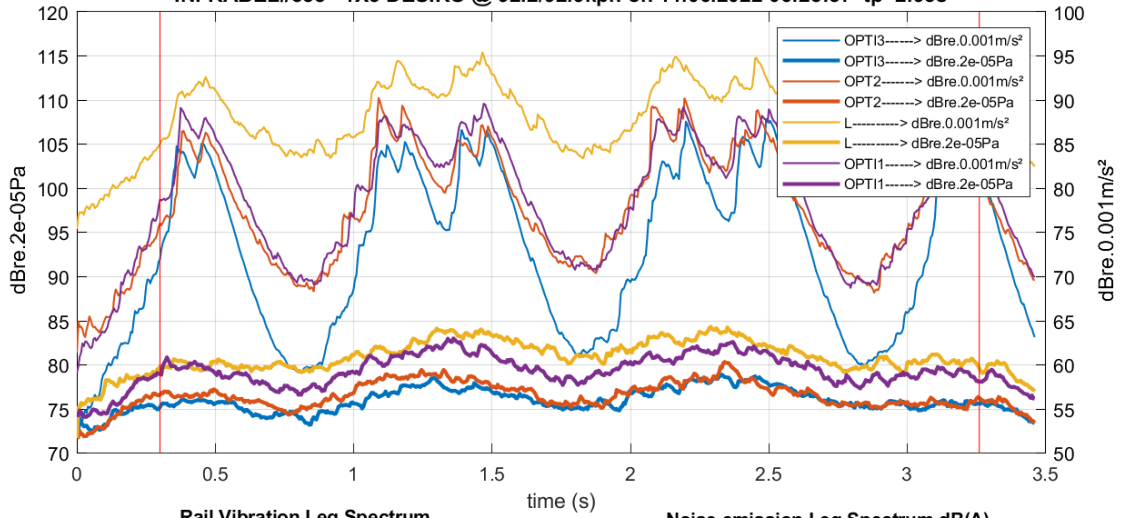




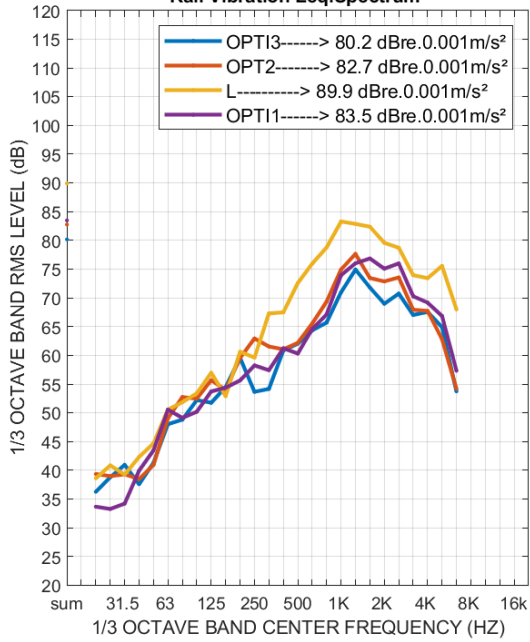




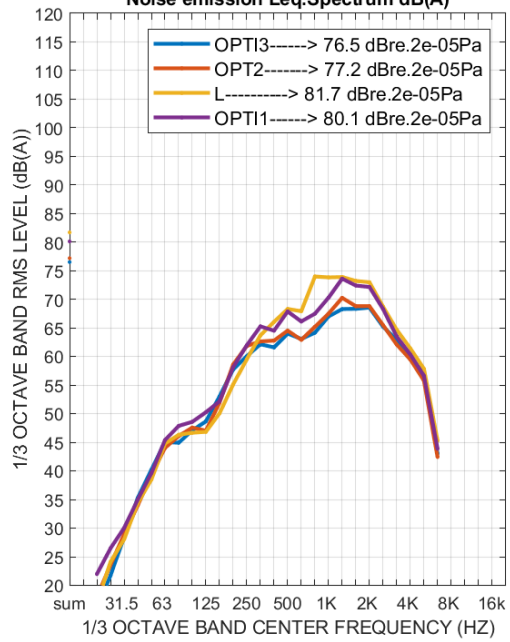
INFRABEL#355 1X3 DESIRO @ 92.2/92.9kph on 11.06.2022 06:23:57 tp=2.93s

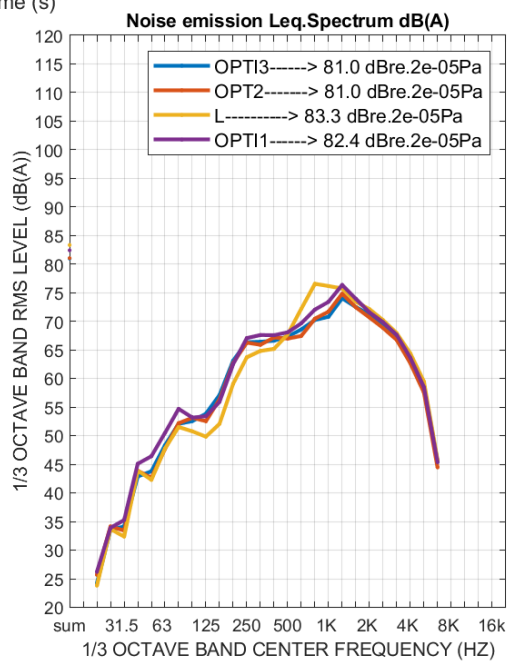
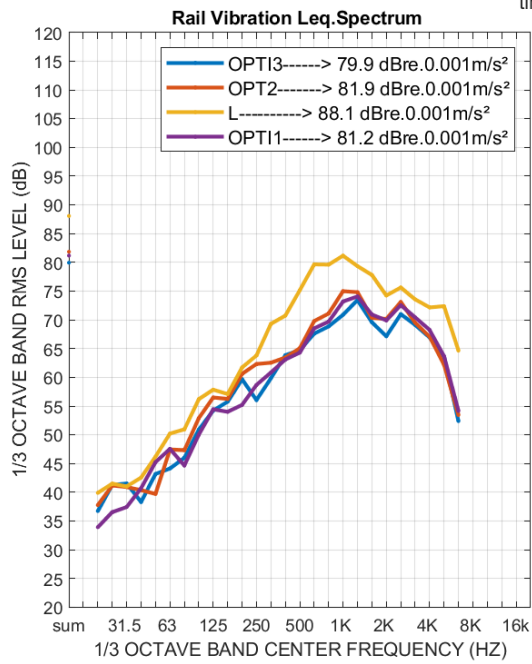
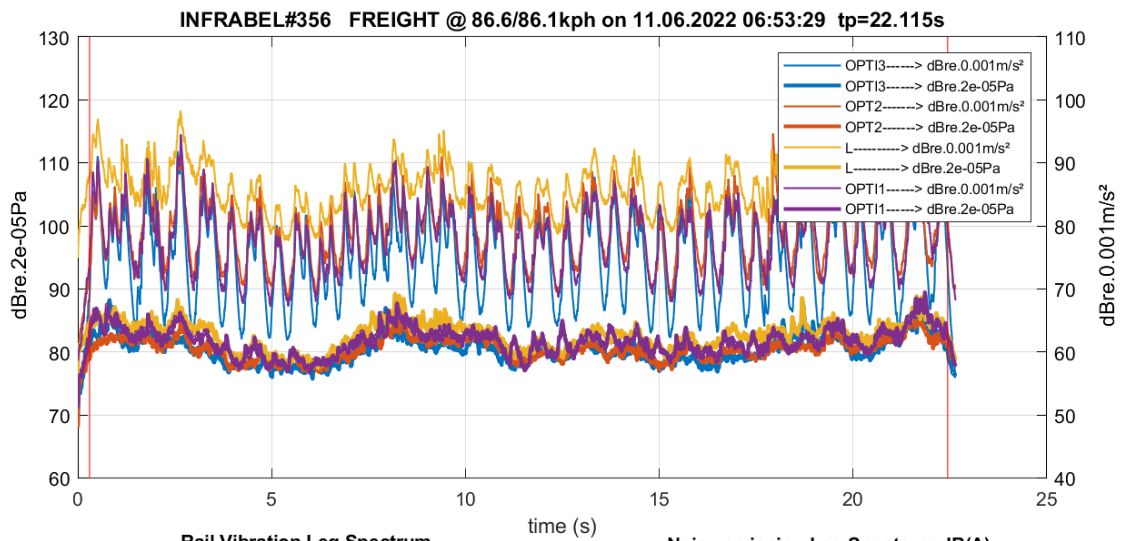


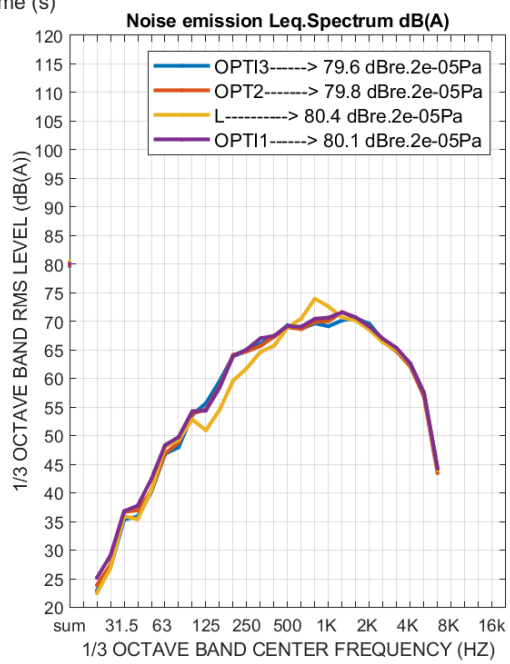
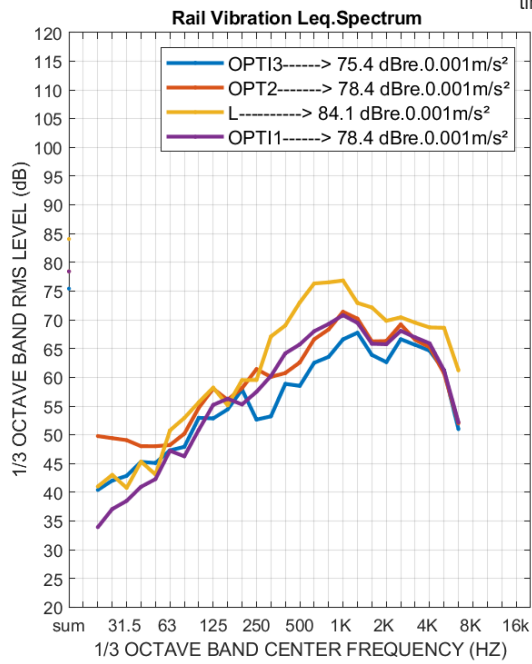
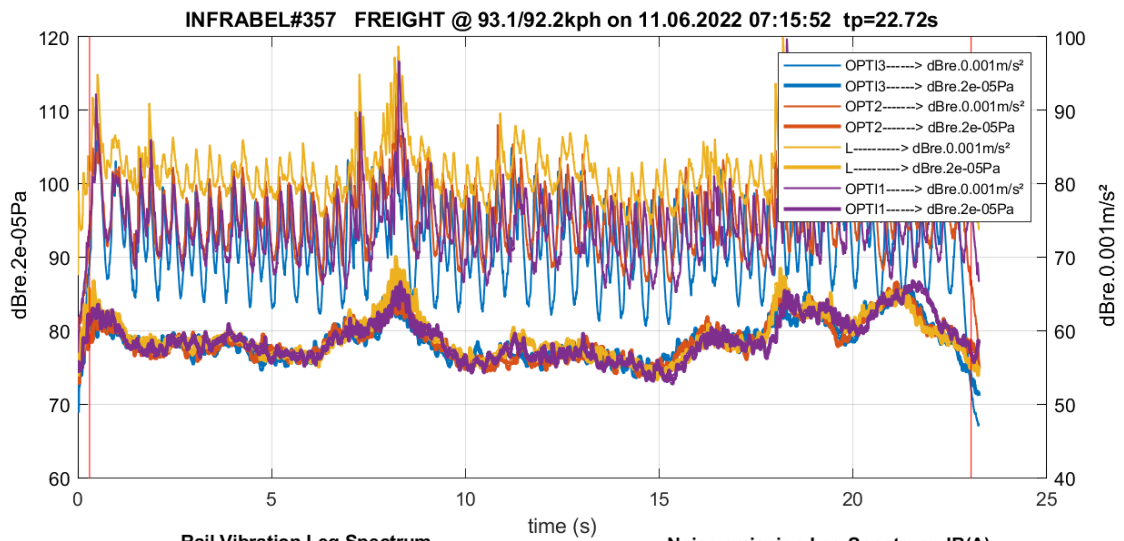
Rail Vibration Leq.Spectrum

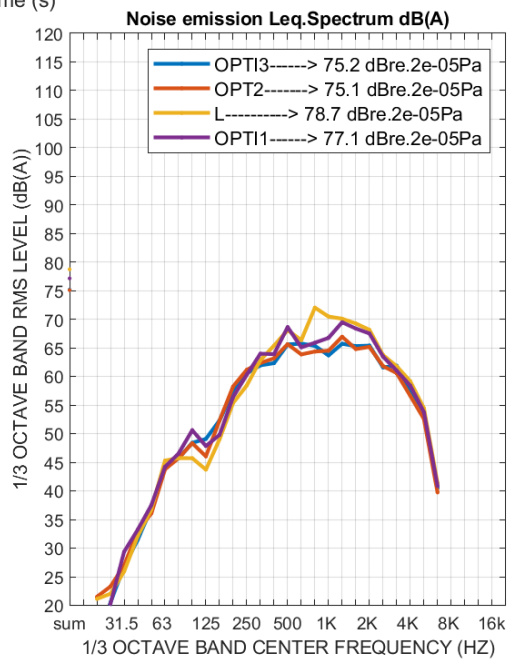
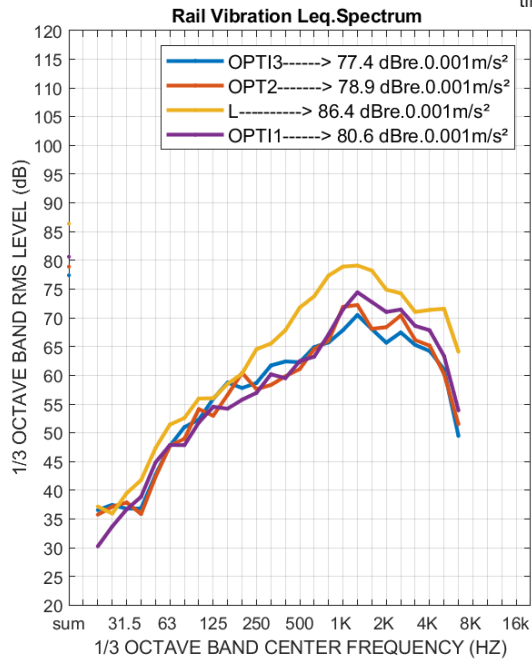
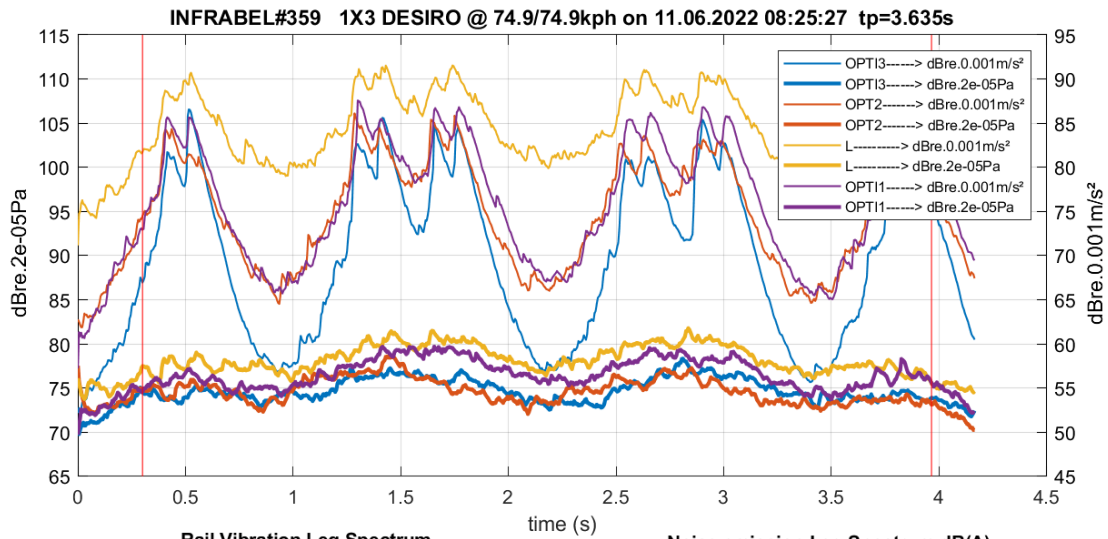


Noise emission Leq.Spectrum dB(A)









INTERNATIONAL UNION OF RAILWAYS
16, rue Jean Rey - 75015 Paris - France
Tel. +33 (0)1 44 49 20 20
Fax +33 (0)1 44 49 20 29
E-mail: info@uic.org

Published by: UIC Sustainability
Directors of publication: Pinar Yilmazer, Lorenzo Franzoni
Cover and layout: Ludovic Wattignies
Photo credits: DB AG, Infrabel
Printing: UIC

ISBN 978-2-7461-3337-2
Copyright deposit: October 2023

www.uic.org



#UICrail

