

REF: AS11704.220913.L2

16 September 2022

Paul Spratt
Elivia Homes Southern
First Floor West
Solent Business Park
1650 Parkway
Whiteley
PO15 7AH

Dear Paul

AS11704 ABBEY FRUIT FARM**Planning Condition 16 (External Noise Intrusion)**

We are writing with regard to the discharge of Planning Condition 16 in relation to Eastleigh Borough Council's [EBC] planning approval notice, reference O/16/079466.

16. Prior to the commencement of the residential development hereby permitted a further detailed assessment of existing and proposed noise sources and a detailed noise mitigation scheme (with measures to provide satisfactory noise standards to include site and building layout, building construction, glazing and mechanical ventilation) shall be submitted to and approved in writing by the Local Planning Authority. The internal noise standards to be achieved shall be agreed in writing by the Local Planning Authority prior to the submission of the noise mitigation scheme. The noise mitigation measures, as approved in writing by the Local Planning Authority, shall be fully installed and verified as performing as required prior to the first occupation of each dwelling unit, and shall thereafter be retained.

Following liaison with Mr Jon Pyke, environmental health officer at EBC, a two-step method statement was agreed for the discharge of this condition. It was agreed that Clarke Saunders Associates [CSA] would conduct a noise survey to determine the internal ambient noise levels in the agreed habitable rooms within the two construction phases. This letter addresses the remaining plots assessed in Phase 2. See also CSA letter ref. AS11704.220715.L2 with respect to Plot 92 in this block of flats.

Internal Noise Standards

As discussed with Mr Pyke, an environmental noise survey was undertaken at planning stage of the development to inform suitable acoustic mitigation specifications for façade design. Following available guidance, internal noise standards targeted the desirable internal noise levels given in BS8233:2014 *Guidance on Sound Insulation and Noise Reduction for Buildings* as reproduced below.

ACTIVITY	LOCATION	07:00 TO 23:00	23:00 TO 07:00
Resting	Living Room	35 dB $L_{Aeq,16\text{ hour}}$	-
Dining	Dining Room/area	40 dB $L_{Aeq,16\text{ hour}}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16\text{ hour}}$	30 dB $L_{Aeq,8\text{ hour}}$

Table 1: Summary table reproducing desirable internal noise levels for residential purposes.
[dB ref 20µPa]

Based upon further guidance from The Professional Practice Guidance on Planning and Noise (May 2017) and The Guidelines for Community Noise (1999), design intent is for noise events above L_{Amax} 45 dB to be restricted to less than 10-15 times per night.

Post completion measurements

CSA undertook a survey of internal noise levels between 16:15 hours on Thursday 8th September and 14:50 hours on Monday 12th September 2022 in accordance with the agreed method statement, appended for ease of reference. Measurements were undertaken with windows fully closed and trickle vents left in an open position.

The measurements were undertaken in Bedroom 1 of Plot 89 and Plot 91, respectively, a ground floor and first floor flat overlooking Woolston Road. These are the only two bedrooms having windows on this elevation and are, hence, the most affected by road traffic noise in the Phase 2 area of the site. Survey data collected in these rooms can, therefore, be considered the worst case of the entire phase.

Further measurements were undertaken at an external location equidistant from Woolston Road as position LT3, as detailed in the initial noise impact assessment (ref. AS11704.200520.NIA1.0), to allow any variation in noise level on site from the original design survey to be determined. At the time of the survey, Woolston Road was a designated diversion route due to the closure of Grange Road, resulting in a temporary increase in public and construction traffic.

Both plots 89 and 91 were in an unfinished state with no furnishings; only Plot 91 had carpet laid. To account for this, reverberation time measurements were undertaken in both plots for comparison.

The following equipment was used for the survey:

- 2 no. Rion sound level meter type NL32;
- 1 no. NTi sound level meter type XL2;
- 1 no. Rion sound level calibrator type NC74.

The calibration of the sound level meters was verified before and after the survey period. No calibration drift was observed. All CSA equipment has current certified laboratory certification which is available upon request

The construction site was 'live' during the daytime measurement periods with the exception of Sunday 11th September 2022. Site management advised that works were finished within the tested plots and that internal influence should be minimal.

Results

Figures AS11704/TH1-TH4 (Plot 89) and AS11704/TH5-TH8 (Plot 91) show the internal L_{Aeq} , L_{Amax} , L_{A10} , L_{A90} noise levels as time histories. Figures AS11704/TH9-TH13 show the external L_{Aeq} , L_{Amax} , L_{A10} , L_{A90} noise levels as time histories.

Table 2 shows the measured average noise levels in each room alongside the 'typical' maximum noise levels, where relevant, for the night-time period. The typical L_{Amax} noise levels have been calculated using the 10th percentile of the night-time L_{Amax} dataset.

DATE/PERIOD		PLOT 89 BED 1	PLOT 91 BED 1	LT3 RESURVEY (EXTERNAL)
Thursday* 8 th Sep 2022	Day	L _{Aeq} 37dB	L _{Aeq} 38dB	L _{Aeq} 69dB
	Night	L _{Aeq} 31dB L _{Amax} 51dB	L _{Aeq} 31dB L _{Amax} 51dB	L _{Aeq} 62dB L _{Amax} 82dB
Friday 9 th Sep 2022	Day	L _{Aeq} 37dB	L _{Aeq} 37dB	L _{Aeq} 68dB
	Night	L _{Aeq} 31dB L _{Amax} 52dB	L _{Aeq} 31dB L _{Amax} 51dB	L _{Aeq} 61dB L _{Amax} 81dB
Saturday 10 th Sep 2022	Day	L _{Aeq} 36dB	L _{Aeq} 37dB	L _{Aeq} 67dB
	Night	L _{Aeq} 30dB L _{Amax} 52dB	L _{Aeq} 30dB L _{Amax} 50dB	L _{Aeq} 61dB L _{Amax} 81dB
Sunday 11 th Sep 2022	Day	L _{Aeq} 36dB	L _{Aeq} 36dB	L _{Aeq} 66dB
	Night	L _{Aeq} 41dB L _{Amax} 52dB	L _{Aeq} 31dB L _{Amax} 50dB	L _{Aeq} 61dB L _{Amax} 81dB

Table 1: Summary of measured internal noise levels.

*Full daytime period not measured

Construction of the carport roof adjacent to the flats was in progress during the survey period. Periods of construction activity have been excluded from the dataset.

Table 3 shows the measured average noise levels alongside the 'typical' maximum noise levels for the night-time period from position LT3 of the original design survey, where a full daytime and night-time period was captured.

DATE/PERIOD	LT3 (EXTERNAL – ORIGINAL SURVEY)	
Friday 21 st May 2020	Day	L _{Aeq} 67dB
	Night	L _{Aeq} 57dB L _{Amax} 79dB
Saturday 22 nd May 2020	Day	L _{Aeq} 64dB
	Night	L _{Aeq} 56dB L _{Amax} 80dB
Sunday 23 rd May 2020	Day	L _{Aeq} 64dB
	Night	L _{Aeq} 56dB L _{Amax} 79dB

When comparing the equivalent days, the results of the repeated external noise survey indicate an increase of 2 to 3 dB (L_{Aeq,T}) during the daytime, and 4 to 5 dB (L_{Aeq,T}) consistently during the night-time, with the typical night-time L_{Amax} increasing by around 2dB. This is likely to be a result of increased traffic flows on the Woolston Road diversion route, including construction vehicles for the development site.

Analysis of the measured reverberation times within the bedrooms suggests that internal noise levels, once furnished, could decrease by up to around 3dB from the measured results.

Upon full completion and fitout for occupation, and the resumption of 'normal' traffic conditions, acoustic conditions within both are expected to comply with the targeted internal noise standards as agreed with the Local Authority.

The above internal noise levels can therefore be accepted as evidence that the noise mitigation measures are performing as required and the condition can be discharged for this area of the site.

We trust the above to be of assistance. Please do not hesitate to contact us with any queries you may have.

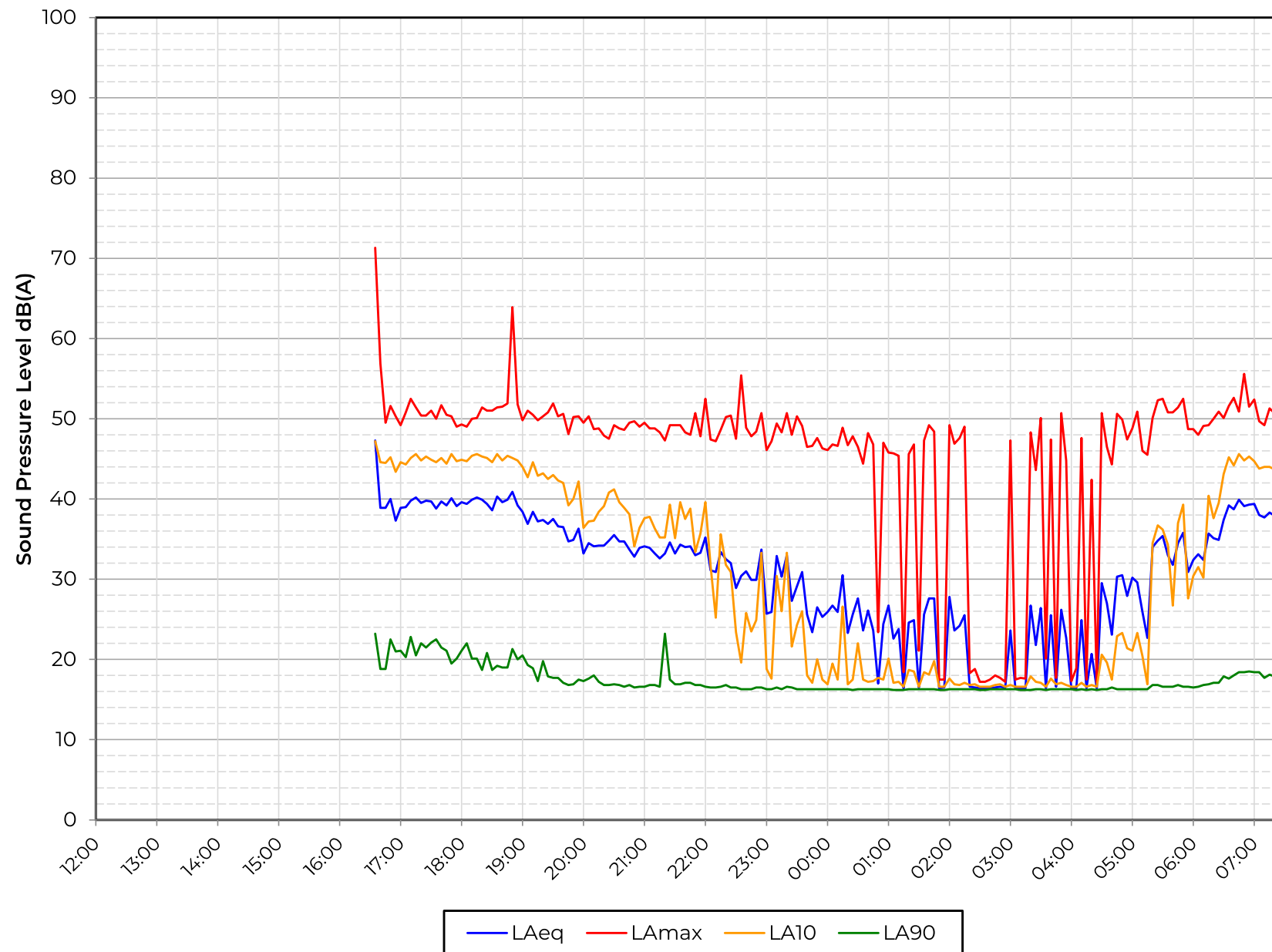
Yours sincerely
for CLARKE SAUNDERS ASSOCIATES



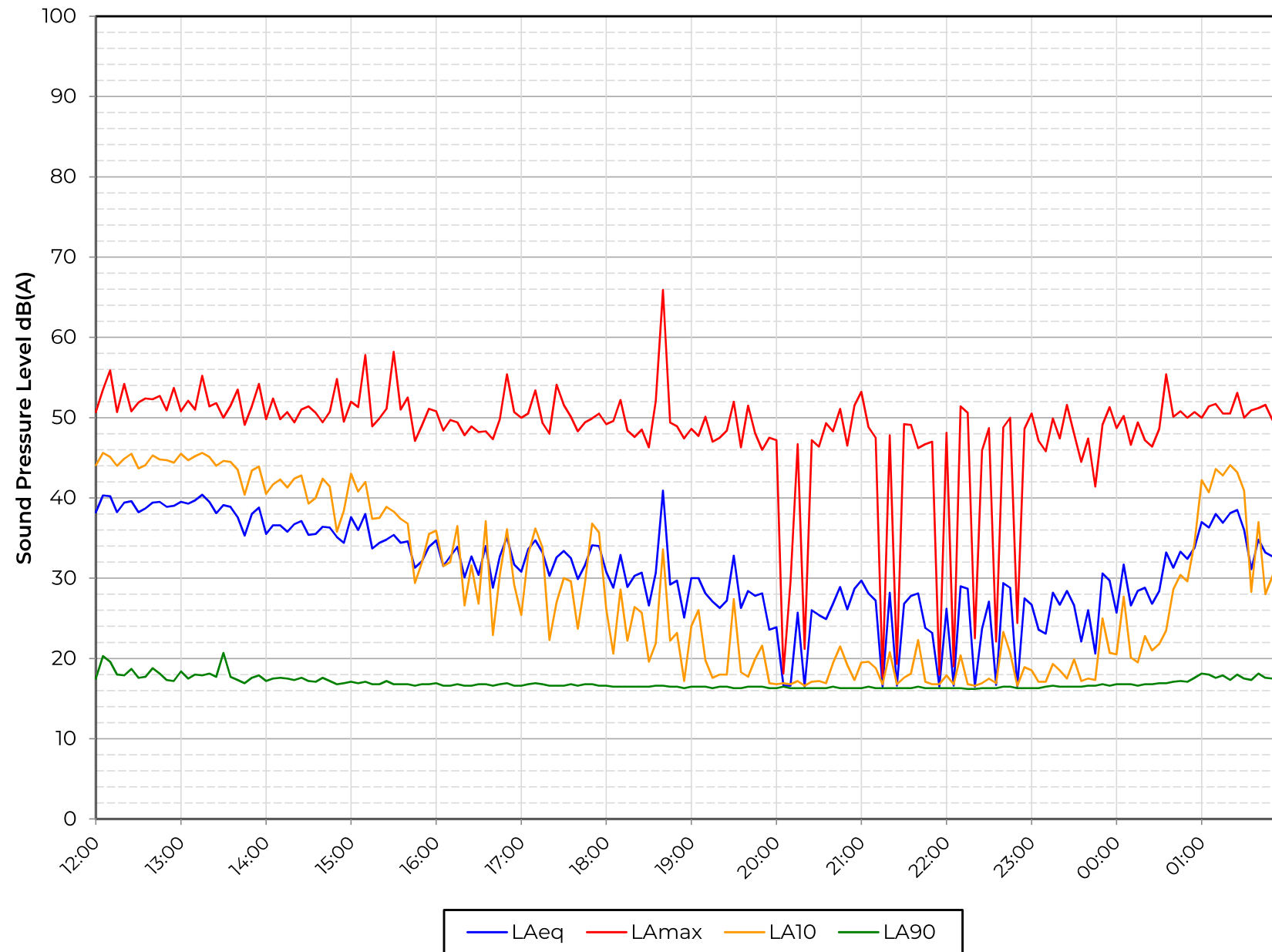
Will Fairman

email: wfairman@clarkesaunders.com

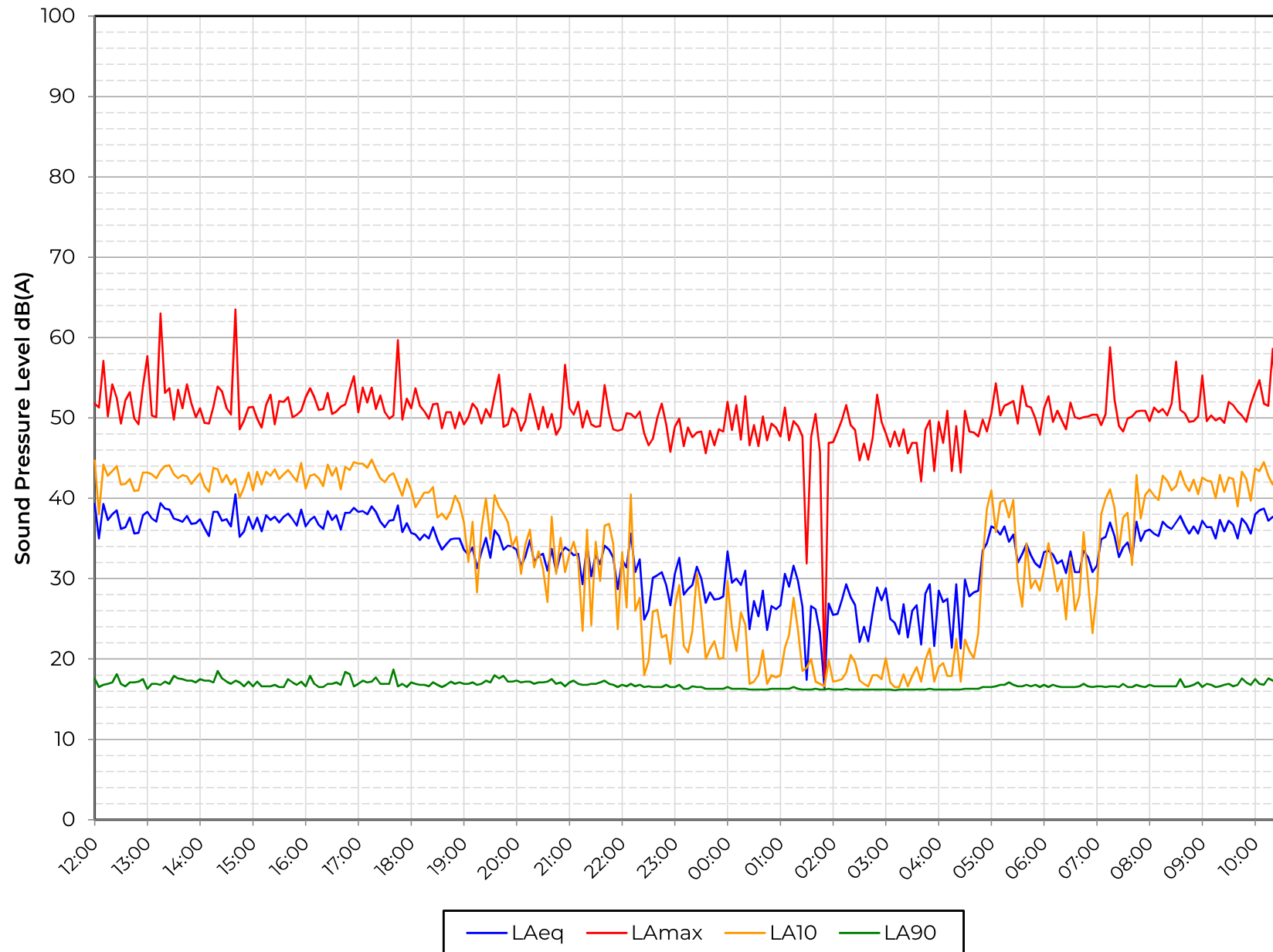
Position Plot 89



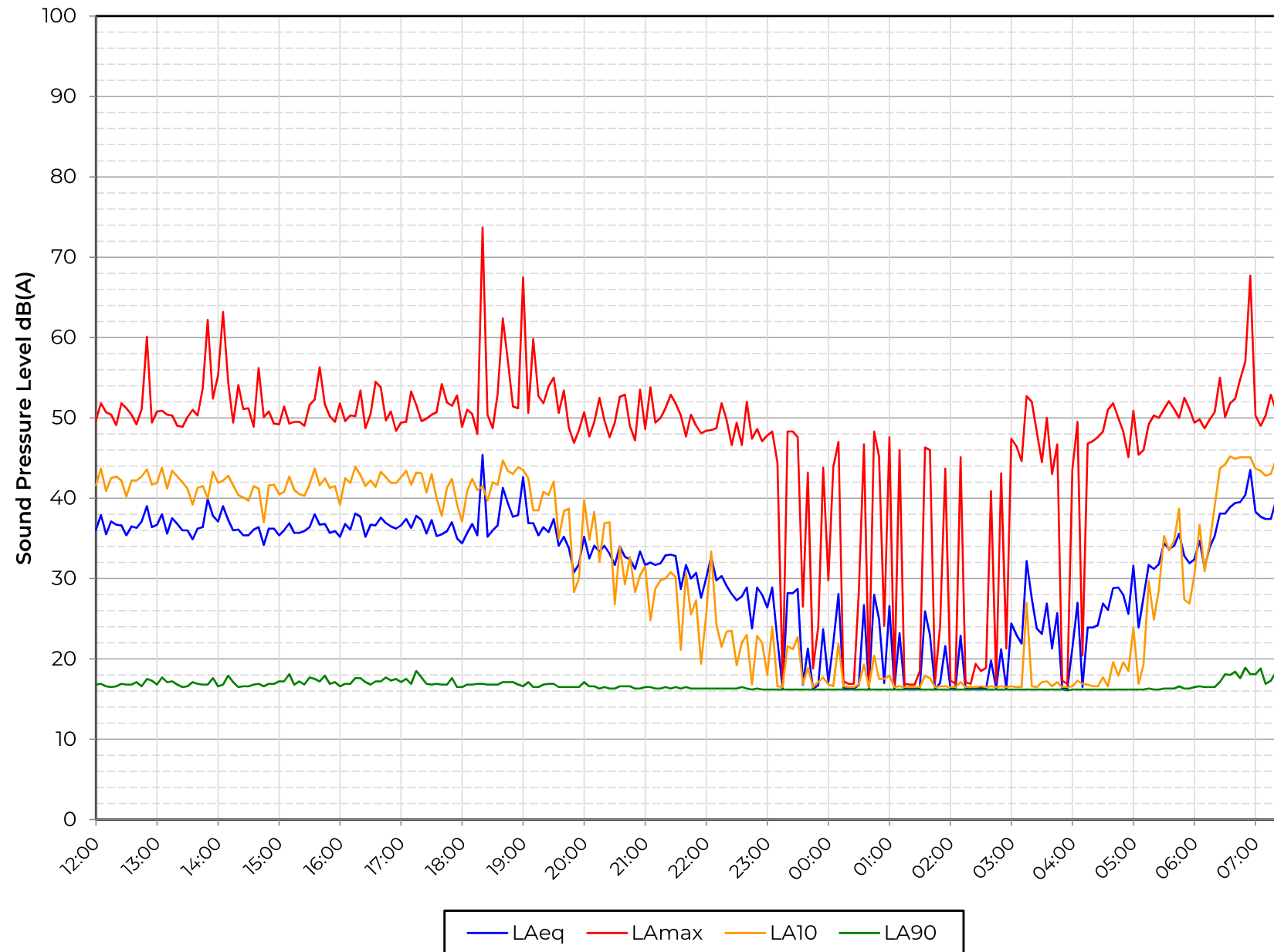
Position Plot 89



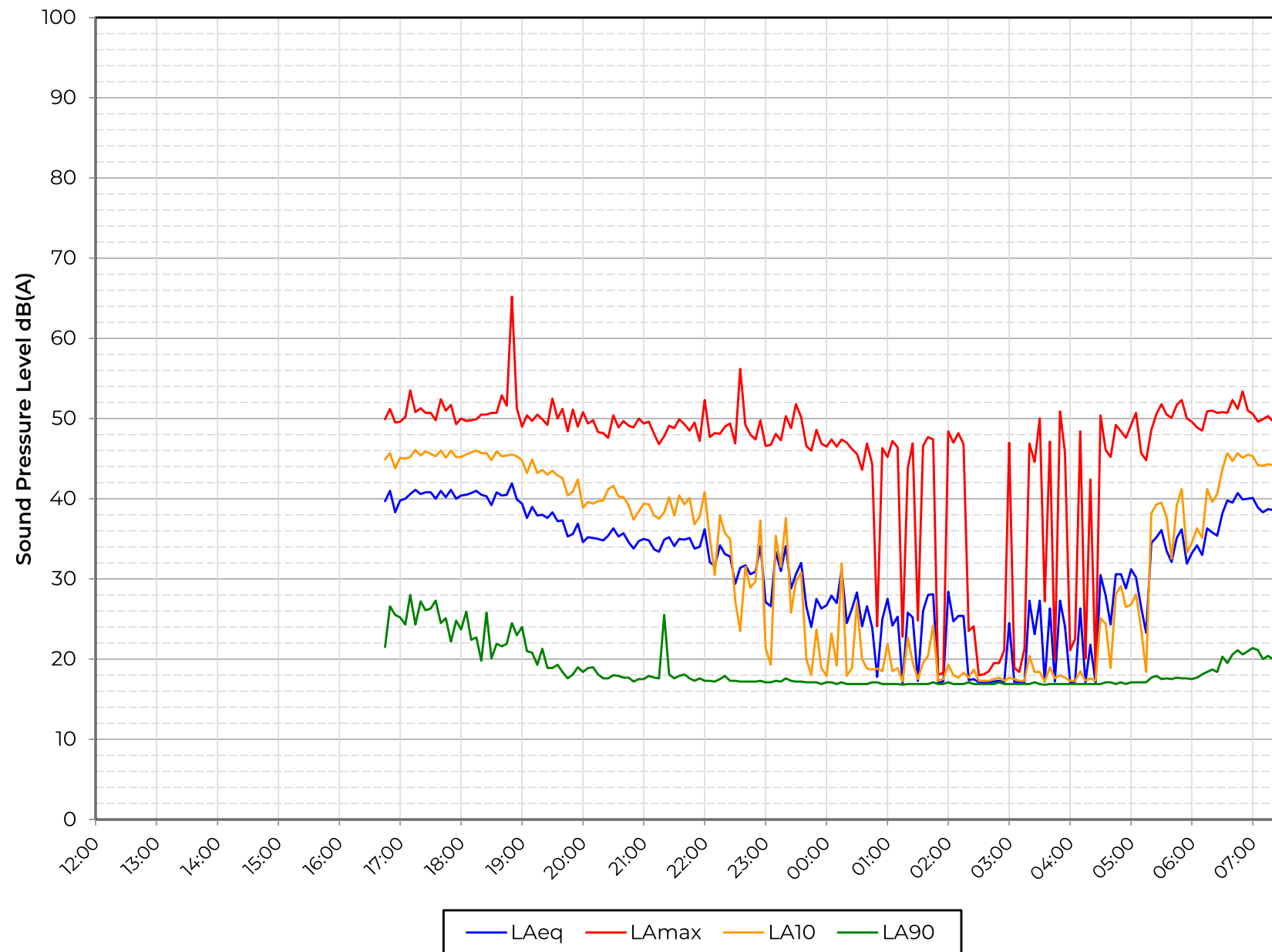
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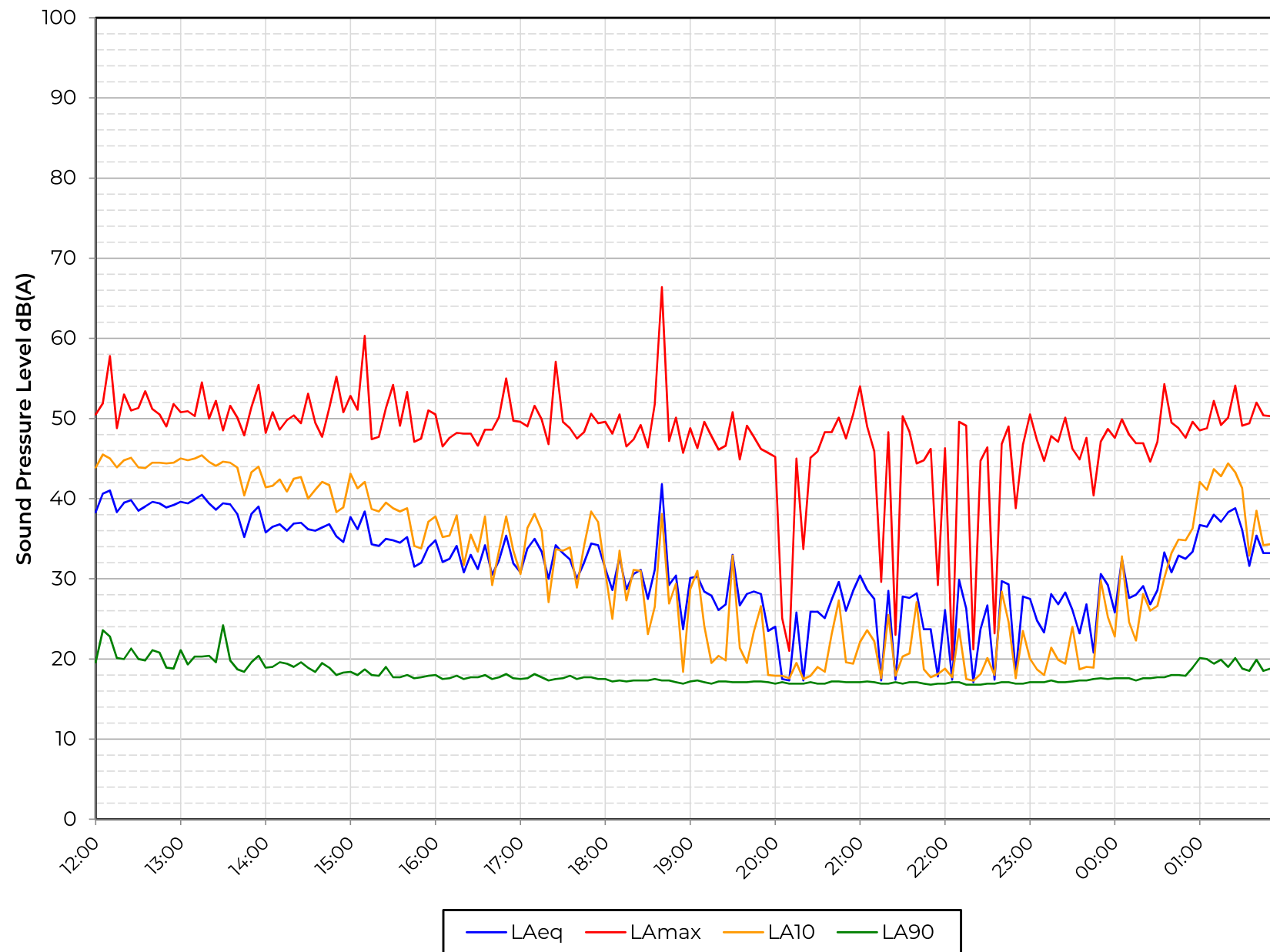
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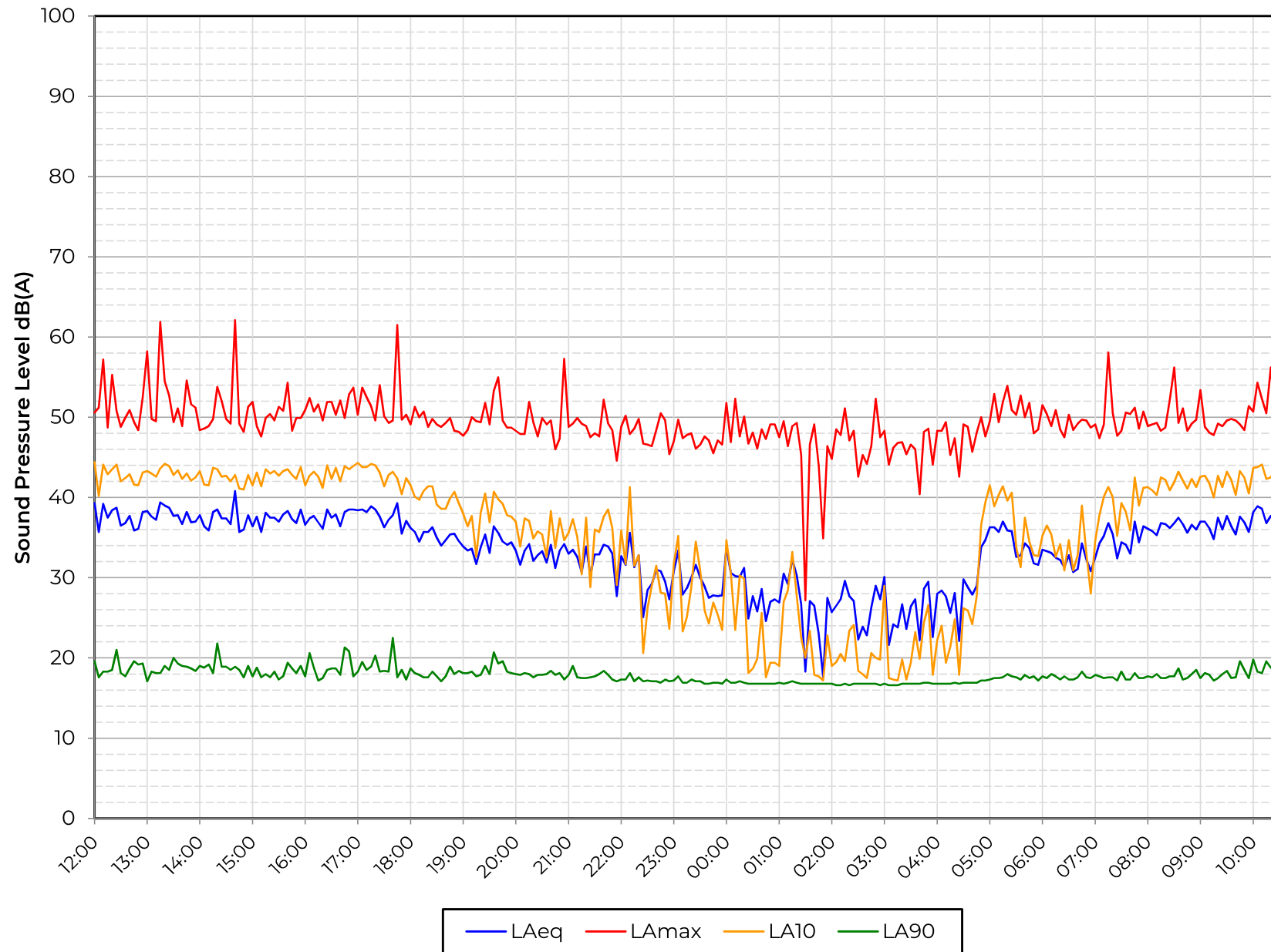
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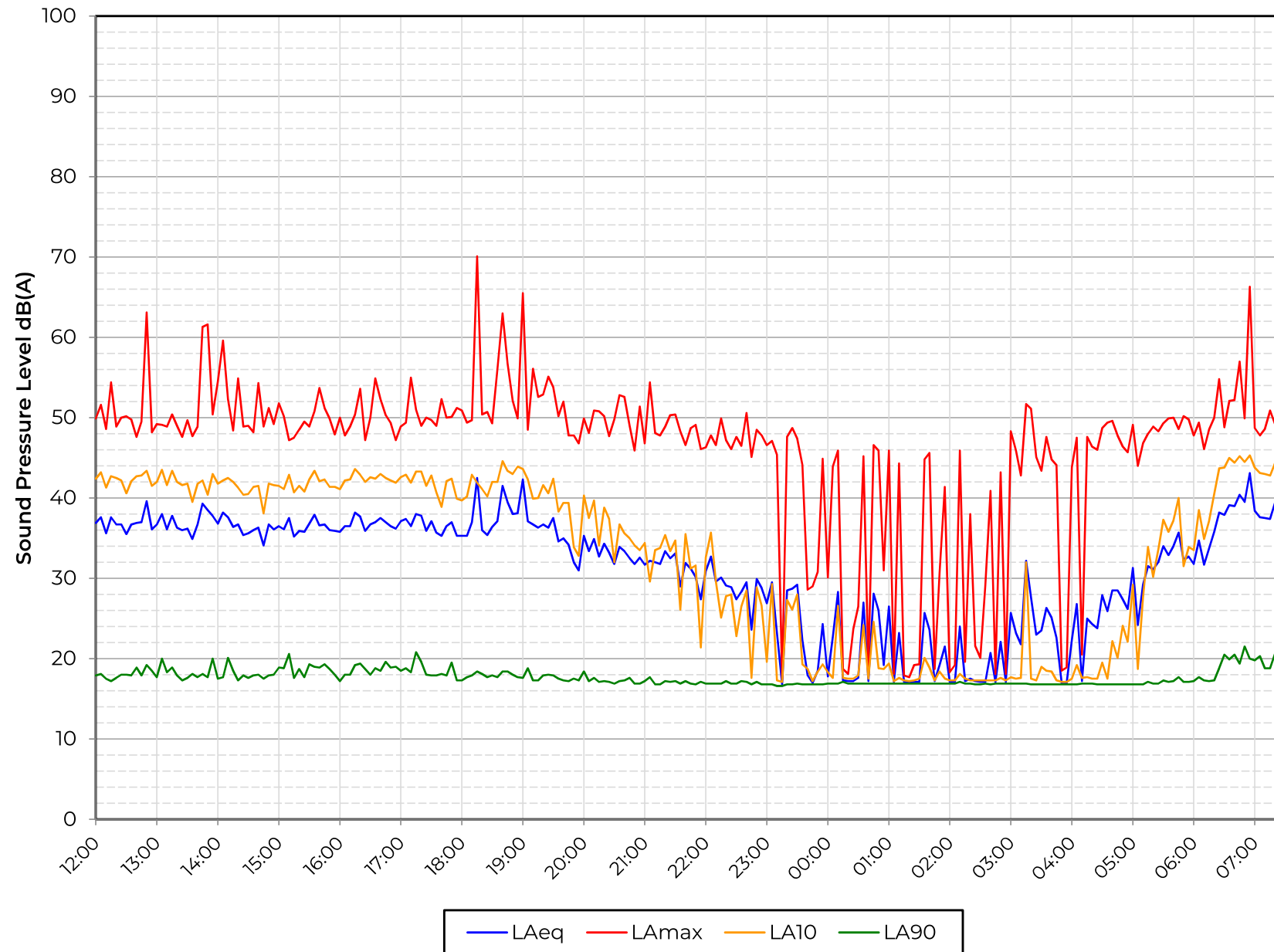
Position Plot 91



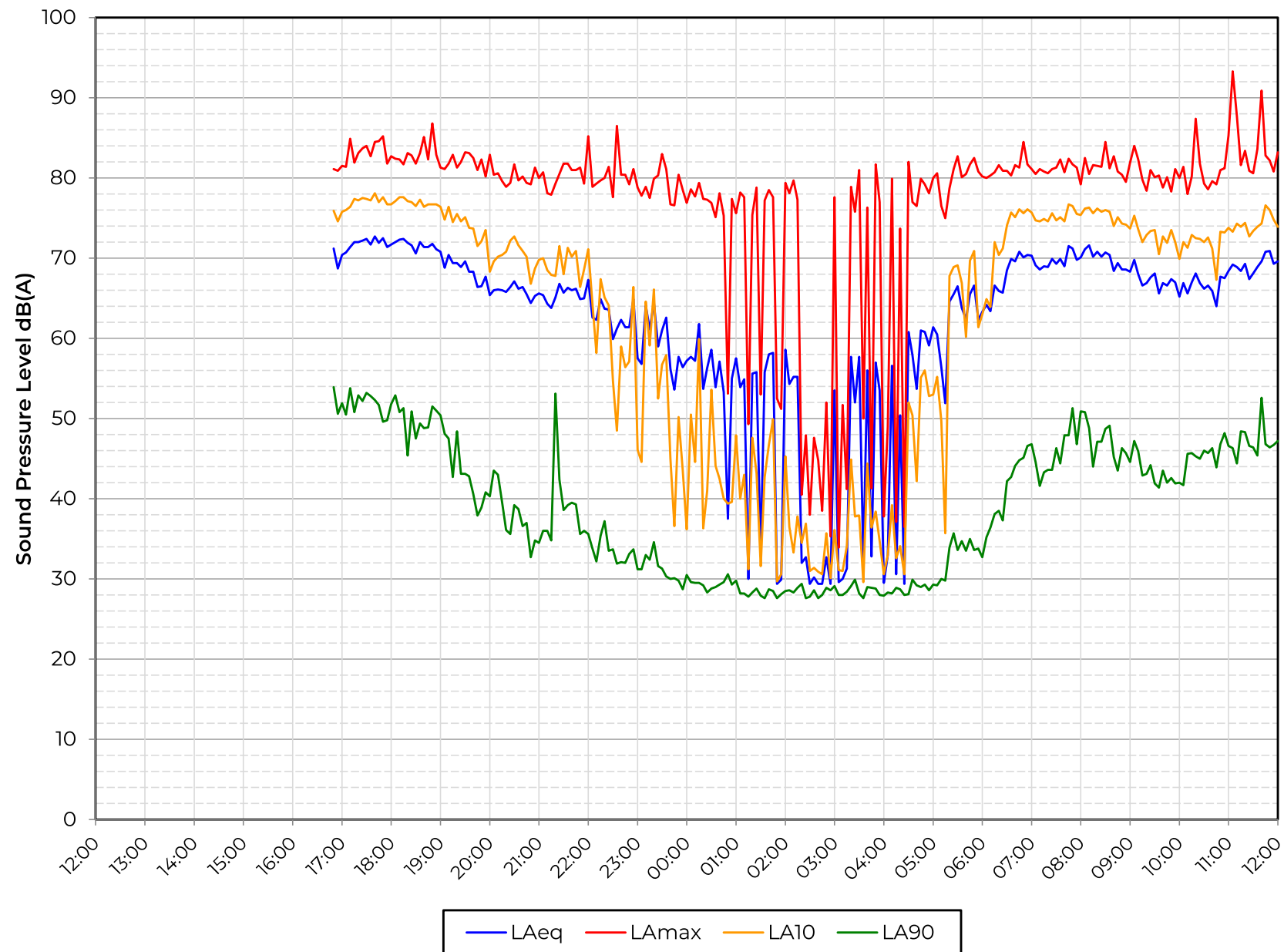
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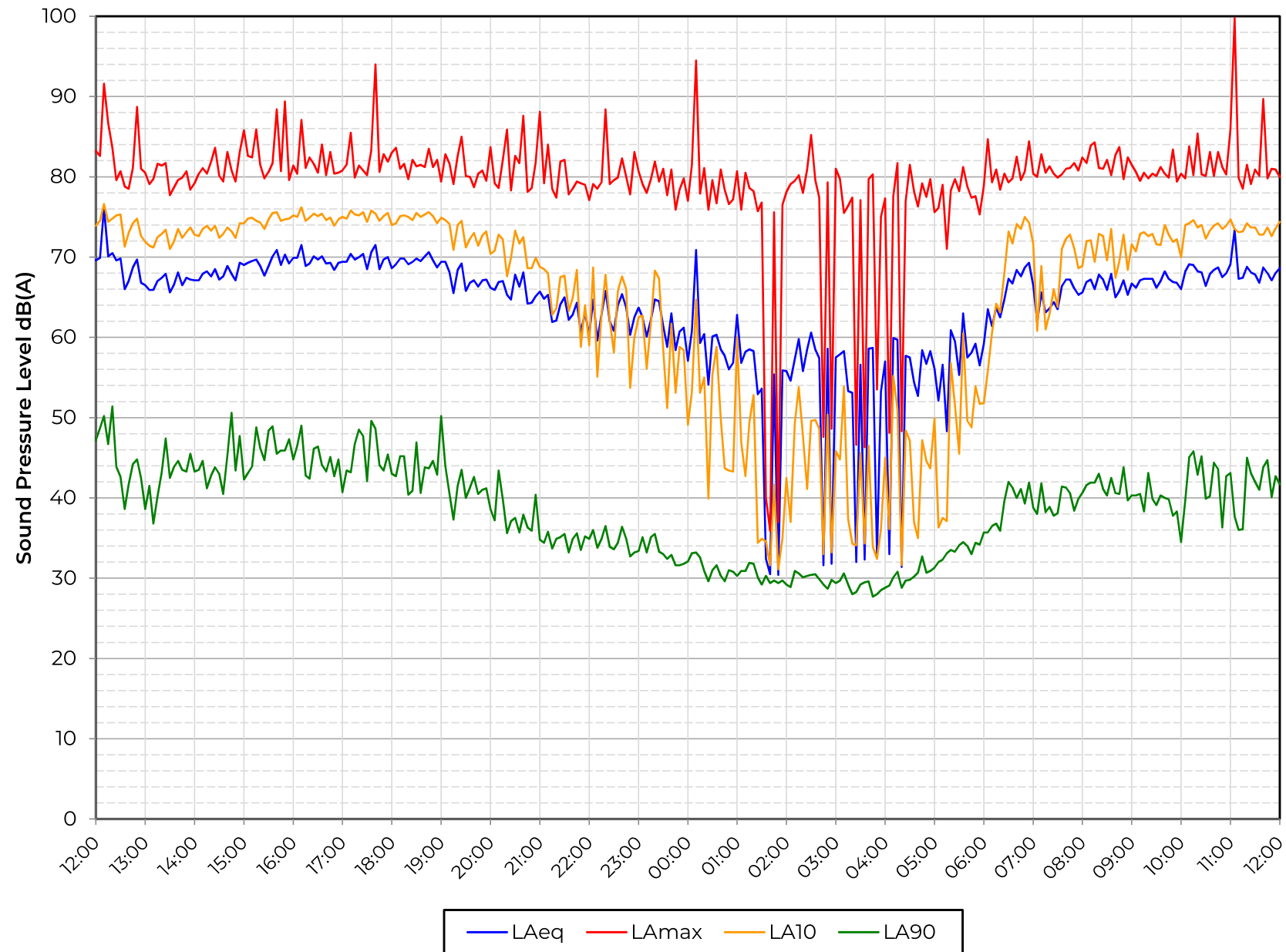
Position Plot 91



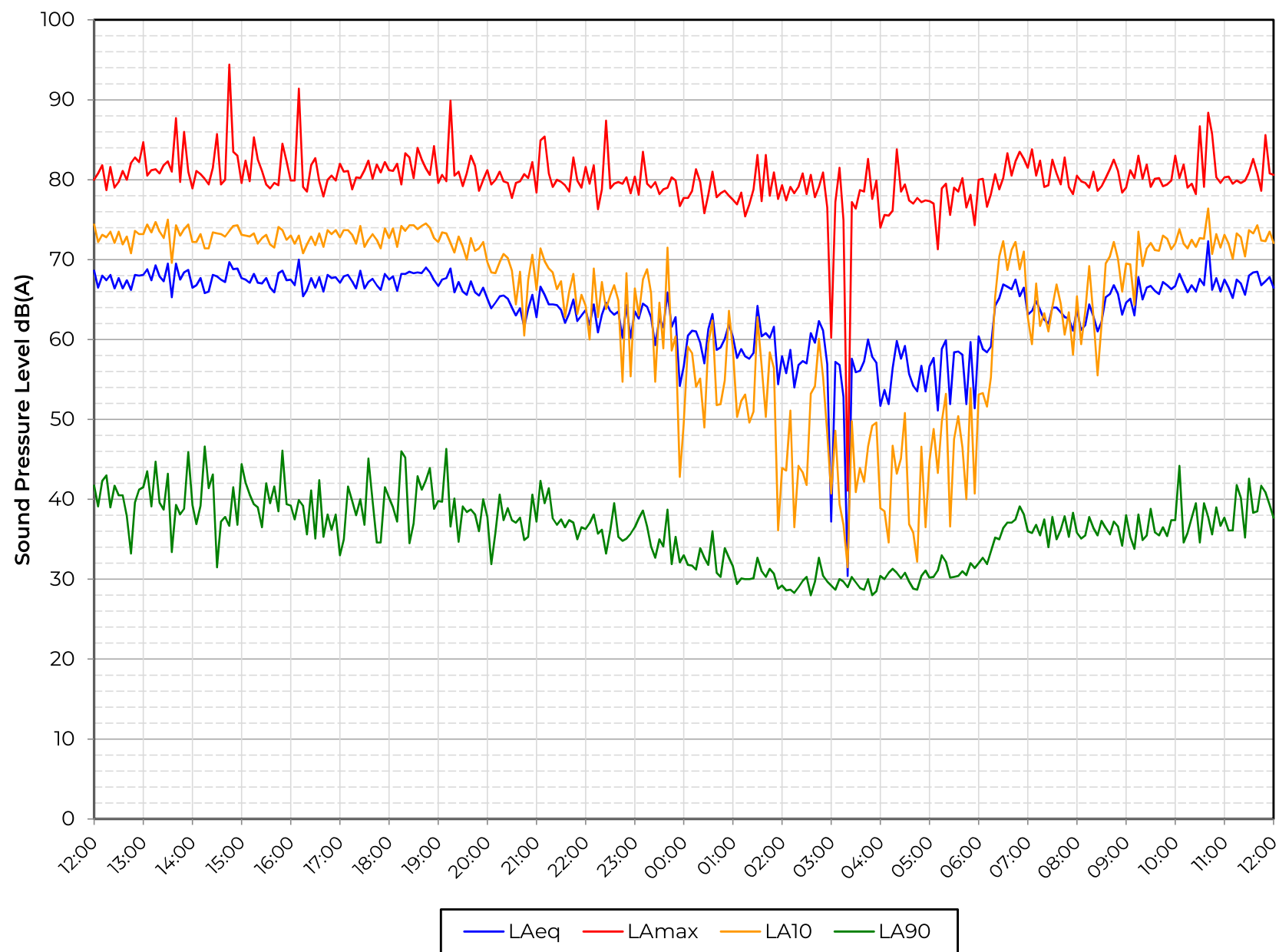
Position LT3



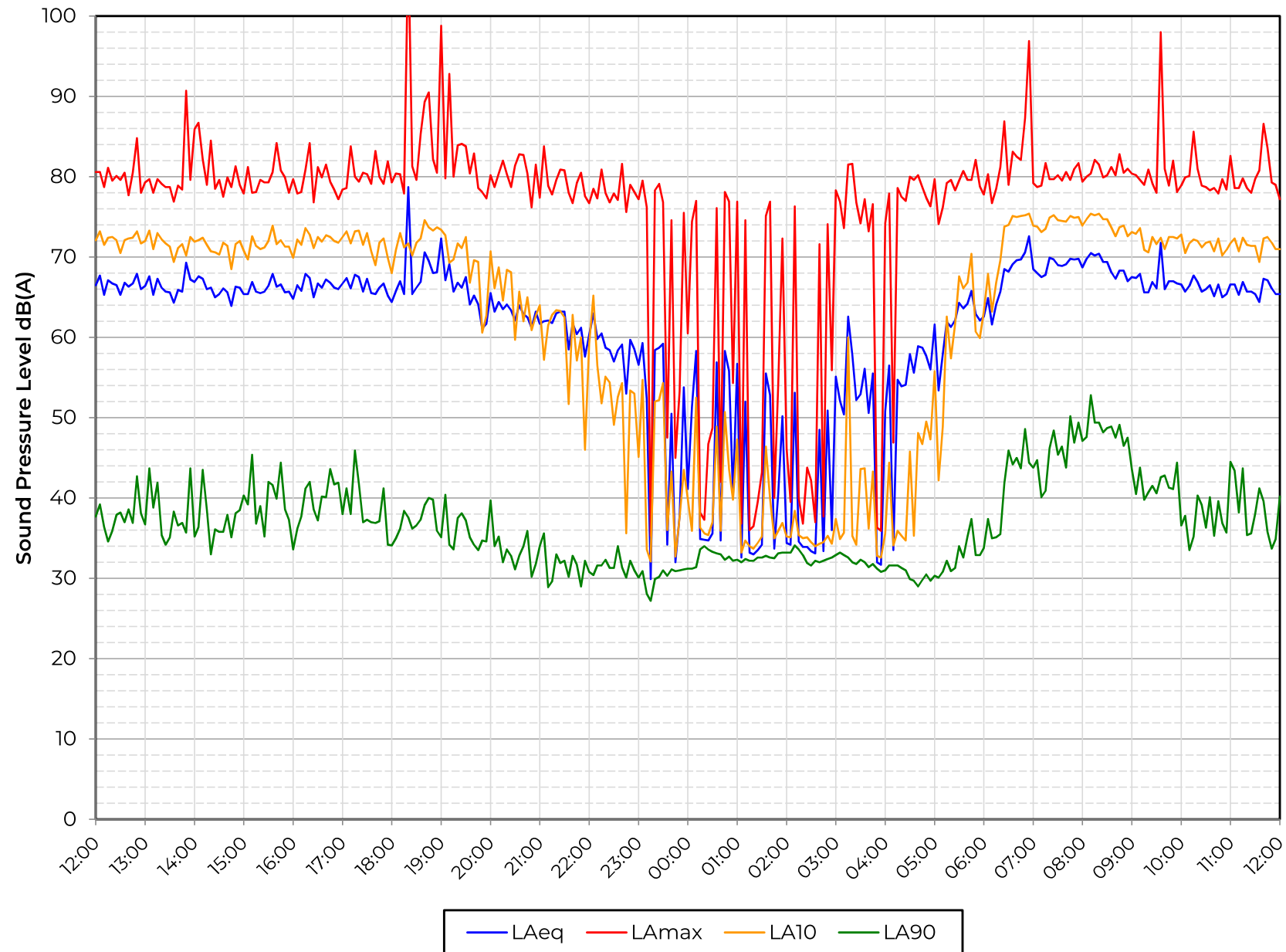
Position LT3



Position LT3



Position LT3



Position LT3

