



**Sound Power Compliance
Boggabri Coal Mobile Fleet
2024
Revision 0**

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Report - Sound Power Compliance - 2024

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Introduction:

Thearle Engineering has prepared this report at the request of Boggabri Coal. This report details the results of the annual requirement of sound power testing of 1/3 of the attenuated HME fleet as required by the current Boggabri Coal Noise Management Plan. The testing has been conducted and reported to maintain consistency with previous sound power testing conducted onsite. The machines were tested utilising methodologies consistent with current testing methods employed onsite and throughout the NSW Coal Industry.

In accordance with the Noise Management Plan, the equipment has been assessed such that when a piece of equipment measures greater than 3 dB against the operational specification, the equipment is regarded as non-compliant and recommended courses of action are provided below.

6.5 Mobile plant monitoring

In accordance with Condition 9 of Schedule 3, equipment and noise control measures used at BCM will have their Sound Power Levels quantified once every three years. BCOPL will test a third of the

equipment each year to achieve a representative sample. The result of this monitoring will be assessed annually against the Sound Power Levels used in the EA (Hansen Bailey, 2010). Any plant found to be exceeding its required Sound Power Level by 3 dB or more will, within the next 12 month period, either be modified via reasonable and feasible attenuation methods or other means (if appropriate), or taken out of service. The exceeding machine will then be re-tested during the next round of monitoring. Where required, the level of acoustic attenuation supplied on new mobile mining equipment will be reviewed against the EA to determine if repairs are required to any existing attenuation.

This annual monitoring program of attenuated plant will aim to assess the effectiveness of the attenuation. Equipment and noise control measures will be maintained to deliver sound power levels that are equal to or better than the sound power levels identified in the EA.

The results of the monitoring and attenuation program will be included in the BCOPL Annual Review, which will be made publically available on the BCM website ([Idemitsu Approvals, Plans & Reports - Idemitsu](#))

Extract from Boggabri Coal Noise Management Plan

Referenced Standards:

AS 5335:2019	Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane
AS ISO 6393:2019	Earth-moving machinery – Determination of sound power level Stationary test conditions
AS ISO 6395:2020	Earth-moving machinery – Determination of sound power level Dynamic test conditions
MDG15	Guideline for mobile and transportable equipment for use in mines
Noise-Management-Rev13-April-2019-Final	Boggabri Coal Operations Pty Ltd Noise Management Plan April 2019, Revision No. 13
J0130-30-R2	Boggabri Coal Pty Limited Acoustic Impact Assessment Continuation of Boggabri Coal Mine Environmental Assessment 12 October 2010
20144 RP#1 V3	Noise Impact Assessment Boggabri Coal Mine Modification 8 - Amendment

Test Configuration:

In accordance with previous years of Annual Sound Testing, testing has been conducted using the methods described in AS ISO 6393 and AS ISO 6395. Haul Truck dynamic testing has been adjusted to Uphill Loaded and Downhill Unloaded. Water Cart and Service Cart dynamic testing has been adjusted to Uphill and Downhill Loaded. The methodology utilised is noted in the test results.

Note: Where the Acoustic Impact Assessment reports values to 1 significant figure, these have been rounded to the nearest integer to align with the requirements of AS 5335:2019.

Testing Equipment:

Class I Sound Meters Pattern Approved to IEC 61672:2013 and IEC 61260:2014.

	Serial Number	Microphone and Preamp Serial Number	Calibration Date	Calibration Expiry
NTI XL2-TA	A2A-18907-E0	A20339 / 9696	11/08/2023	11/08/2025
NTI XL2-TA	A2A-18699-E0	A20326 / 9691	11/08/2023	11/08/2025
NTI XL2-TA	A2A-18906-E0	A19781 / 9601	11/08/2023	11/08/2025
NTI XL2-TA	A2A-15022-E0	A16148 / 7762	16/01/2023	16/01/2025
NTI XL2-TA	A2A-15297-E0	A16173 / 9954	13/01/2023	13/01/2025
NTI XL2-TA	A2A-14999-E0	A16149 / 1888	10/01/2023	10/01/2025
Precision Calibrator CAL200	18292		10/08/2023	10/08/2024
Precision Calibrator CAL200	15642		05/03/2024	05/03/2025
Precision Calibrator CAL200	15048		05/03/2024	05/03/2025

Calibration Certificates are supplied separately on request.

Atmospheric Conditions:

Test Date:	Temperature	Wind Speed	Barometric Pressure	Relative Humidity
02/04/2024	24 °C	< 30 km/hr	1016 hPa	60 %
05/06/2024	12 °C	< 10KPH	1018 hPa	80 %
17/06/2024	12 °C	< 10KPH	1017 hPa	65 %
15/07/2024	13 °C	< 20KPH	1012 hPa	70 %
20/08/2024	21 °C	< 30KPH	1021 hPa	60 %
21/08/2024	24 °C	< 30KPH	1019 hPa	60 %
02/10/2024	26 °C	< 20KPH	1024 hPa	45 %
08/10/2024	30 °C	< 20KPH	1016 hPa	40 %
26/11/2024	30 °C	< 30KPH	1012 hPa	35 %
27/11/2024	27 °C	< 20KPH	1012 hPa	60 %

Results:

Unit Number	Model	Test Date	Stationary	Dynamic		Boggabri Coal Target	Exceedance	Compliant
EX126	9800	02/04/2024	115 dBA / 123 dB	117 dBA / 117 dB		117 dBA / 126 dB	- dBA / - dB	Yes
EX127	PC450LC	15/07/2024	105 dBA / 115 dB	106 dBA / 116 dB		120 dBA / 130 dB*	- dBA / - dB	Yes
EX128	PC300LC	15/07/2024	103 dBA / 113 dB	104 dBA / 115 dB		120 dBA / 130 dB*	- dBA / - dB	Yes
EX131	9800	02/04/2024	115 dBA / 129 dB	119 dBA / 131 dB		117 dBA / 126 dB	2 dBA / 5 dB	No
EX257	6030	27/11/2024	115 dBA / 121 dB	117 dBA / 123 dB		123 dBA / 129 dB	- dBA / - dB	Yes
EX255	6060	27/11/2024	121 dBA / 129 dB	123 dBA / 130 dB		123 dBA / 131 dB	- dBA / - dB	Yes

Unit Number	Model	Test Date	Stationary	Forwards	Reverse	Boggabri Coal Target	Exceedance	Compliant
GR061	16M	27/11/2024	107 dBA / 113 dB	107 dBA / 112 dB	Not Applicable	107 dBA / 114 dB	- dBA / - dB	Yes
GR069	24M	27/11/2024	108 dBA / 115 dB	108 dBA / 117 dB	Not Applicable	108 dBA / 117 dB	- dBA / - dB	Yes
WV190	WA600	27/11/2024	107 dBA / 117 dB	107 dBA / 117 dB	108 dBA / 118 dB	110 dBA / 123 dB	- dBA / - dB	Yes
TD003	D475A	08/10/2024	105 dBA / 118 dB	109 dBA / 118 dB	109 dBA / 119 dB	117 dBA / 122 dB	- dBA / - dB	Yes
TD010	D11T	08/10/2024	109 dBA / 120 dB	113 dBA / 122 dB	115 dBA / 122 dB	116 dBA / 126 dB*	- dBA / - dB	Yes
TD080	D475A	08/10/2024	104 dBA / 116 dB	109 dBA / 117 dB	112 dBA / 119 dB	117 dBA / 122 dB	- dBA / - dB	Yes
TD082	D475A	08/10/2024	104 dBA / 115 dB	109 dBA / 117 dB	112 dBA / 119 dB	117 dBA / 122 dB	- dBA / - dB	Yes
TD083	D475A	08/10/2024	104 dBA / 115 dB	106 dBA / 116 dB	109 dBA / 117 dB	117 dBA / 122 dB	- dBA / - dB	Yes
TD085	D475A	08/10/2024	105 dBA / 117 dB	110 dBA / 118 dB	114 dBA / 120 dB	117 dBA / 122 dB	- dBA / - dB	Yes



Unit Number	Model	Test Date	Stationary	Uphill	Downhill	Boggabri Coal Target	Exceedance	Compliant
WC031	HD785	02/10/2024	116 dBA / 123 dB	116 dBA / 125 dB	115 dBA / 119 dB	120 dBA / 126 dB	- dBA / - dB	Yes

Unit Number	Model	Test Date	Stationary	Uphill	Downhill	Boggabri Coal Target	Exceedance	Compliant
DT263	930E-4	21/08/2024	117 dBA / 125 dB	118 dBA / 128 dB	121 dBA / 125 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT264	930E-4	26/11/2024	114 dBA / 124 dB	116 dBA / 127 dB	121 dBA / 123 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT265	930E-4	21/08/2024	117 dBA / 124 dB	117 dBA / 127 dB	118 dBA / 121 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT266	930E-4	02/10/2024	115 dBA / 123 dB	116 dBA / 127 dB	121 dBA / 123 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT267	930E-4	26/11/2024	117 dBA / 126 dB	120 dBA / 128 dB	121 dBA / 123 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT291	930E-4	21/08/2024	119 dBA / 126 dB	119 dBA / 128 dB	121 dBA / 125 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT292	930E-4	02/10/2024	115 dBA / 124 dB	116 dBA / 126 dB	121 dBA / 122 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT304	EH3500	20/08/2024	116 dBA / 125 dB	117 dBA / 129 dB	115 dBA / 123 dB	117 dBA / 129 dB	- dBA / - dB	Yes
DT306	EH3500	20/08/2024	114 dBA / 125 dB	116 dBA / 129 dB	115 dBA / 122 dB	117 dBA / 129 dB	- dBA / - dB	Yes
DT309	EH3500	02/10/2024	117 dBA / 126 dB	117 dBA / 129 dB	115 dBA / 123 dB	117 dBA / 129 dB	- dBA / - dB	Yes
DT328	EH3500	05/06/2024	110 dBA / 117 dB	114 dBA / 121 dB	115 dBA / 120 dB	117 dBA / 129 dB	- dBA / - dB	Yes
DT329	EH3500	17/06/2024	110 dBA / 117 dB	114 dBA / 121 dB	116 dBA / 120 dB	117 dBA / 129 dB	- dBA / - dB	Yes
DT747	930E-4	21/08/2024	120 dBA / 127 dB	120 dBA / 130 dB	121 dBA / 125 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT754	930E-4	02/10/2024	117 dBA / 125 dB	118 dBA / 126 dB	119 dBA / 121 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT801	930E-5	20/08/2024	116 dBA / 124 dB	120 dBA / 129 dB	115 dBA / 123 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT802	930E-5	20/08/2024	113 dBA / 120 dB	119 dBA / 128 dB	109 dBA / 120 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT803	930E-5	02/10/2024	115 dBA / 123 dB	119 dBA / 129 dB	110 dBA / 119 dB	121 dBA / 130 dB	- dBA / - dB	Yes

Unit Number	Model	Test Date	Stationary	Uphill	Downhill	Boggabri Coal Target	Exceedance	Compliant
DT804	930E-5	20/08/2024	117 dBA / 124 dB	120 dBA / 130 dB	111 dBA / 121 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT805	930E-5	20/08/2024	114 dBA / 122 dB	119 dBA / 130 dB	111 dBA / 124 dB	121 dBA / 130 dB	- dBA / - dB	Yes
DT806	930E-5	20/08/2024	113 dBA / 122 dB	119 dBA / 130 dB	110 dBA / 122 dB	121 dBA / 130 dB	- dBA / - dB	Yes

* Indicates no equivalent level from Modification 8. Target sourced from 2010 Noise Impact Assessment J0130-30-R2.



Appendix A

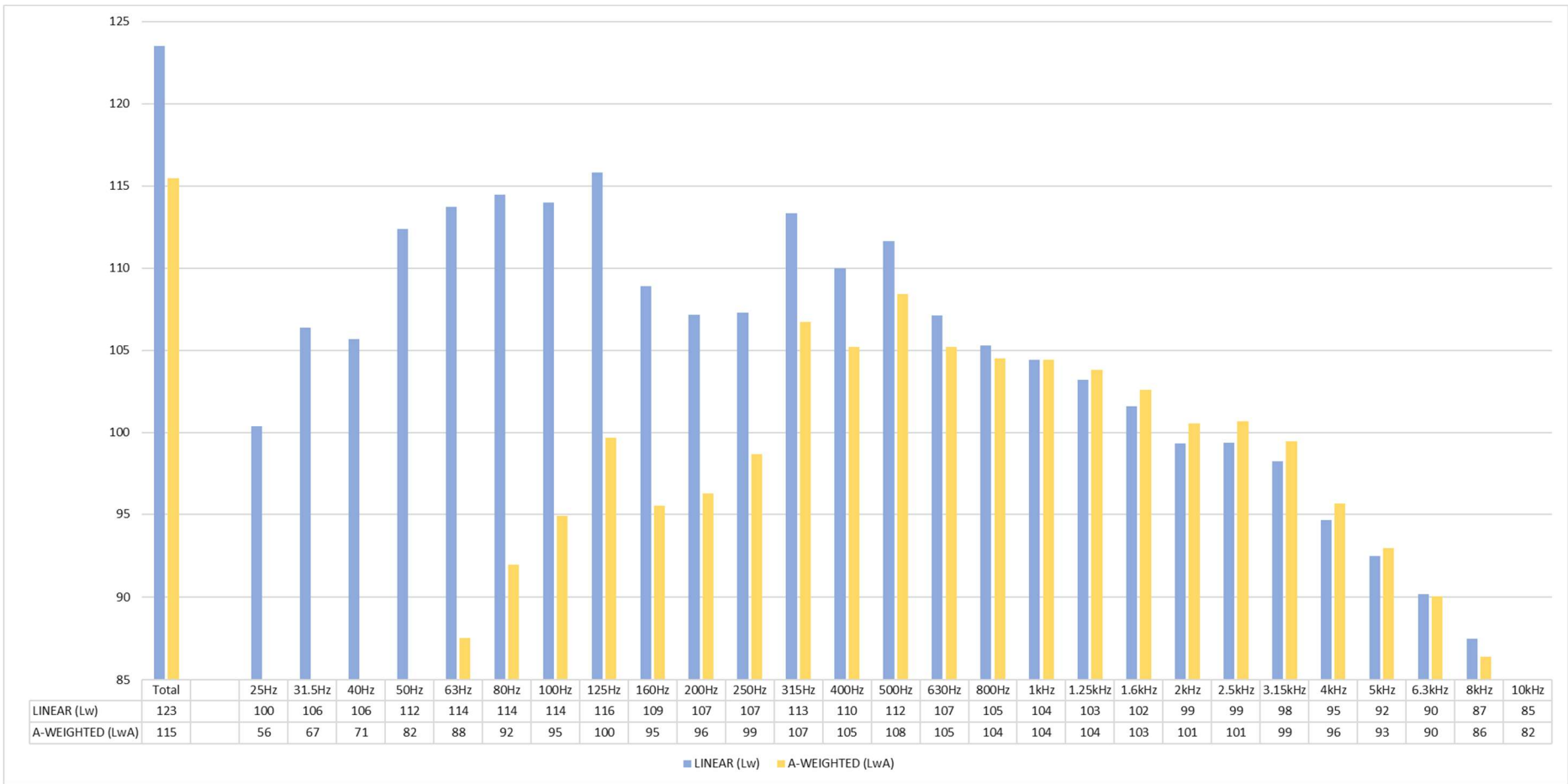


Figure 1: EX126 Stationary

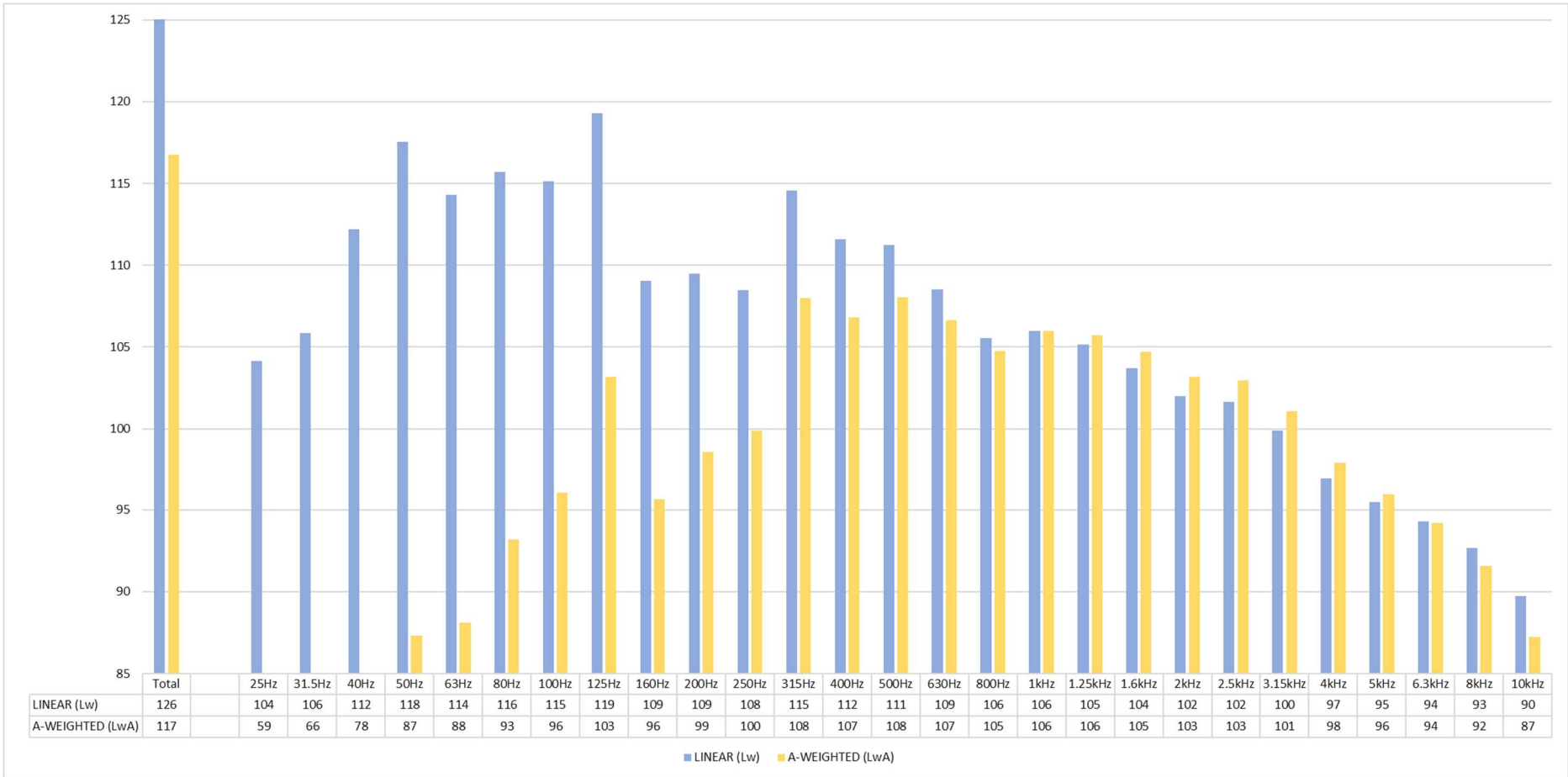


Figure 2: EX126 Dynamic

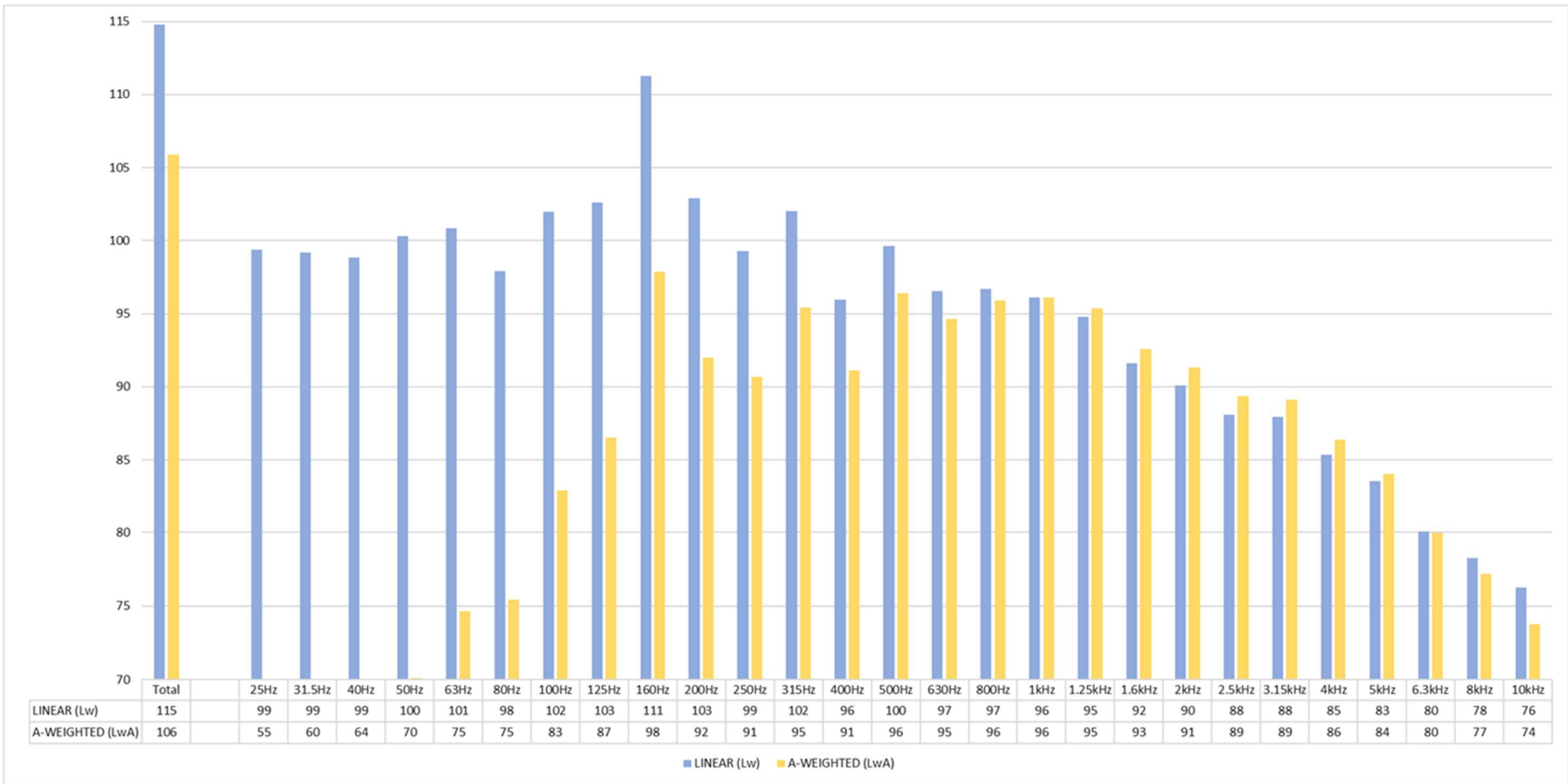


Figure 3: EX127 Stationary

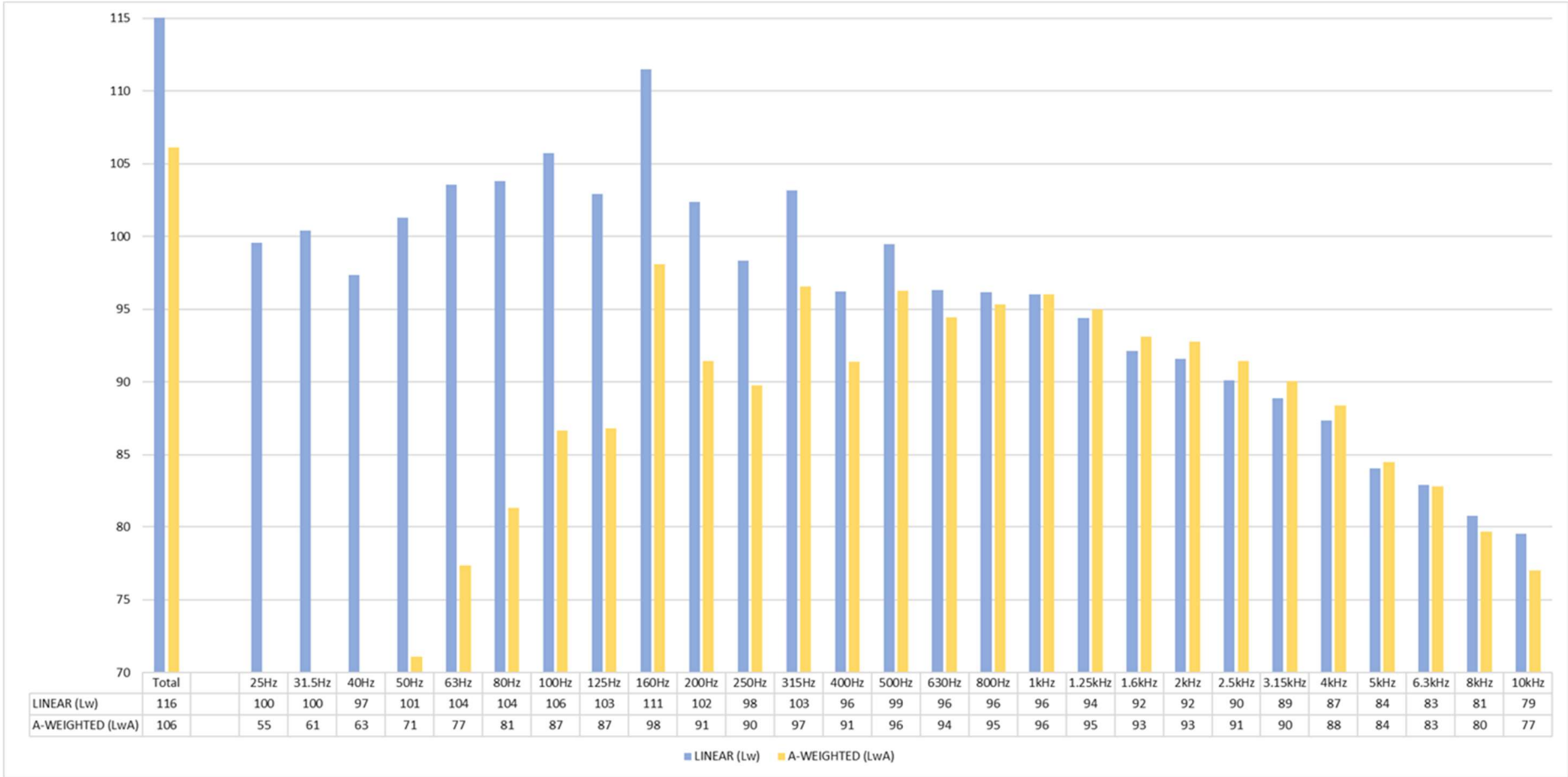


Figure 4: EX127 Dynamic

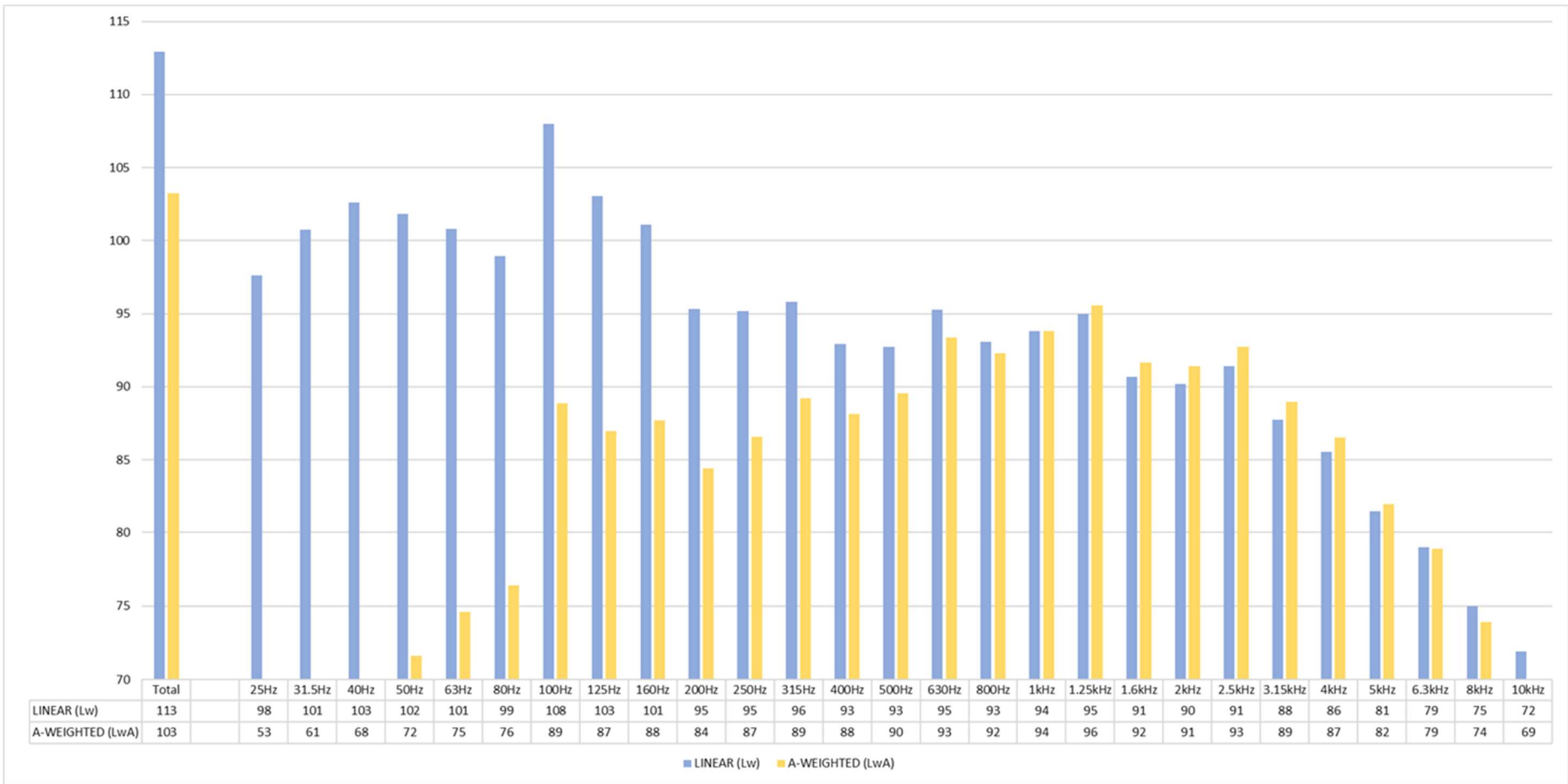


Figure 5: EX128 Stationary

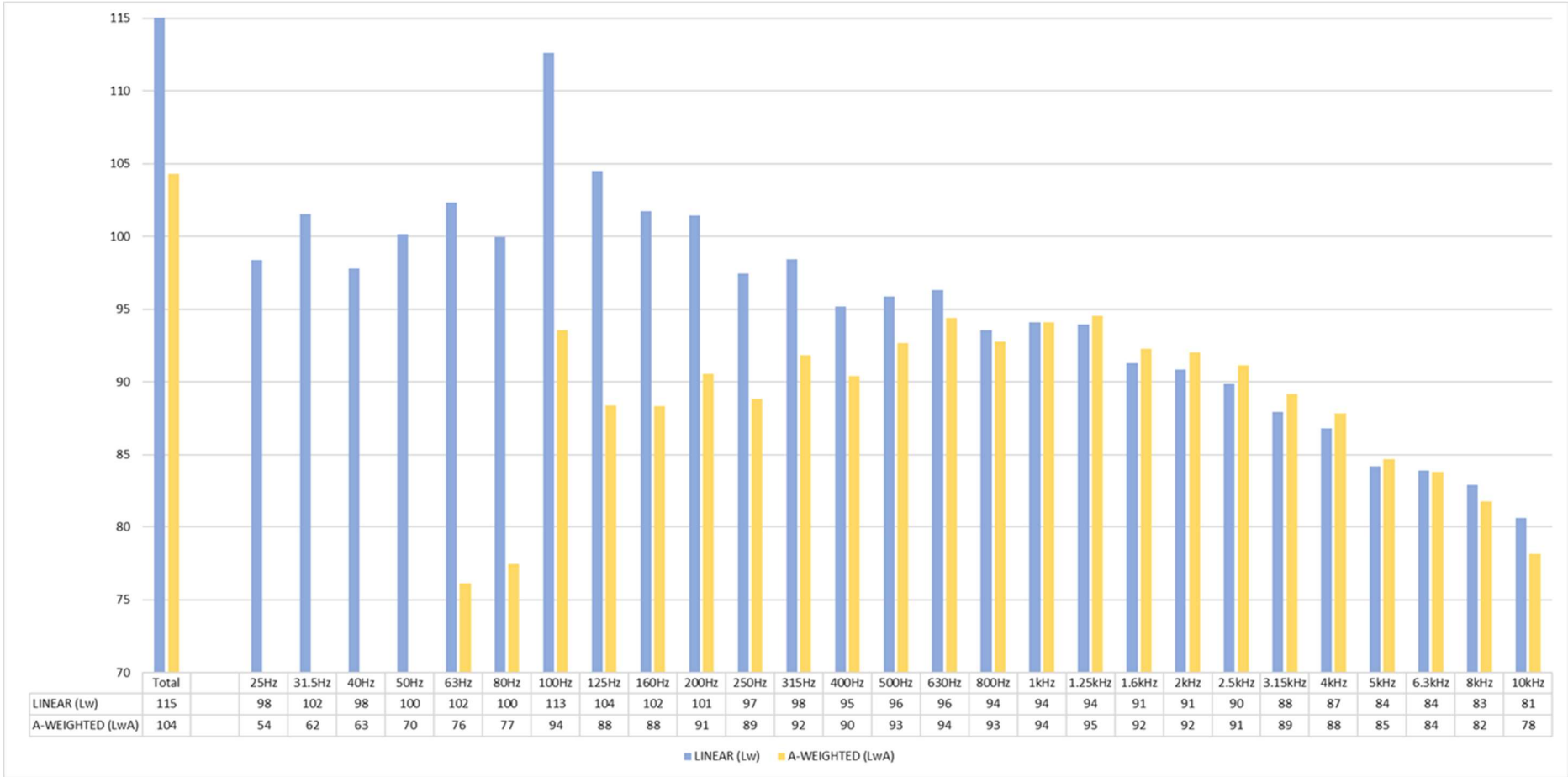


Figure 6: EX128 Dynamic

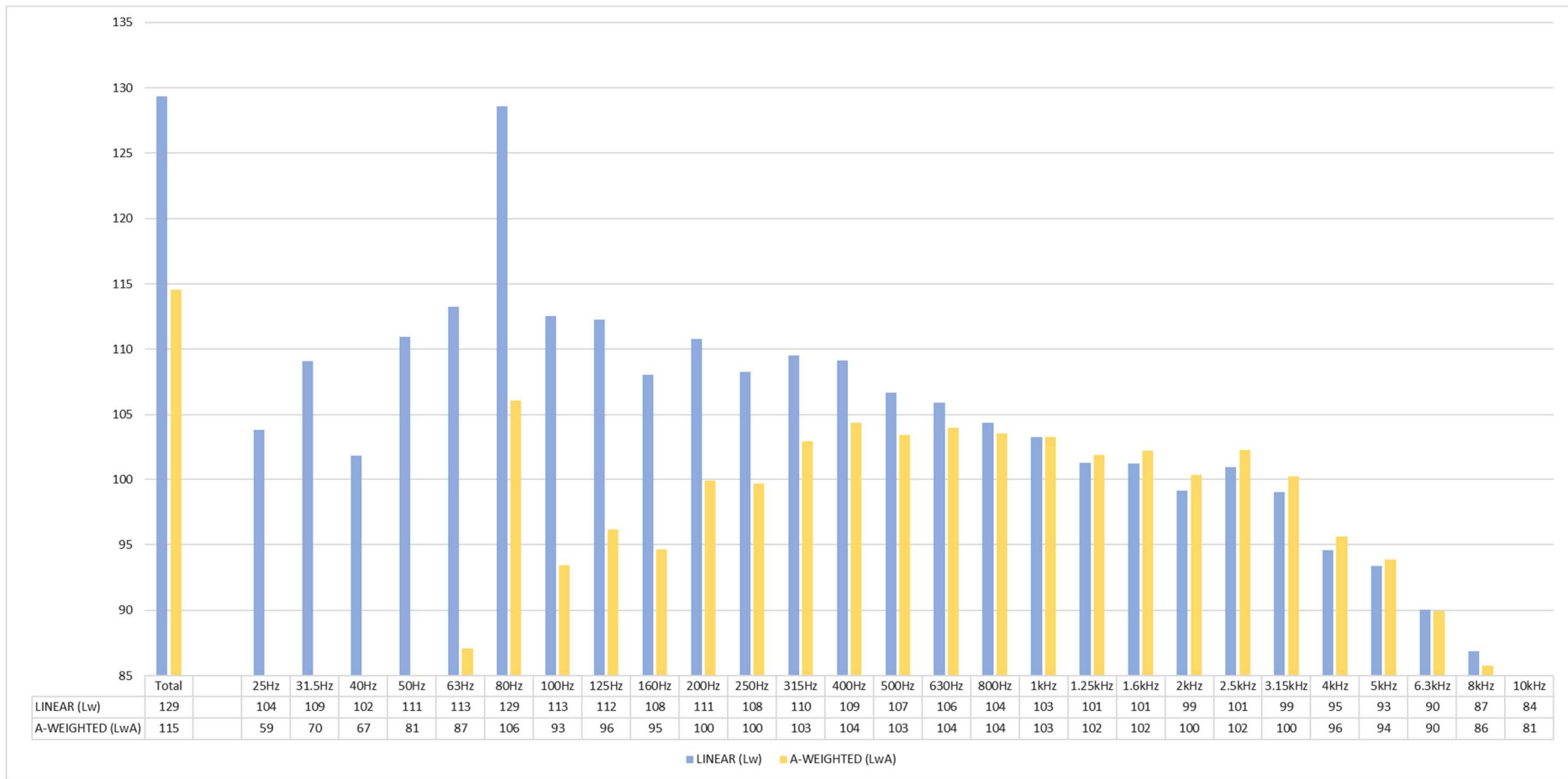


Figure 7: EX131 Stationary

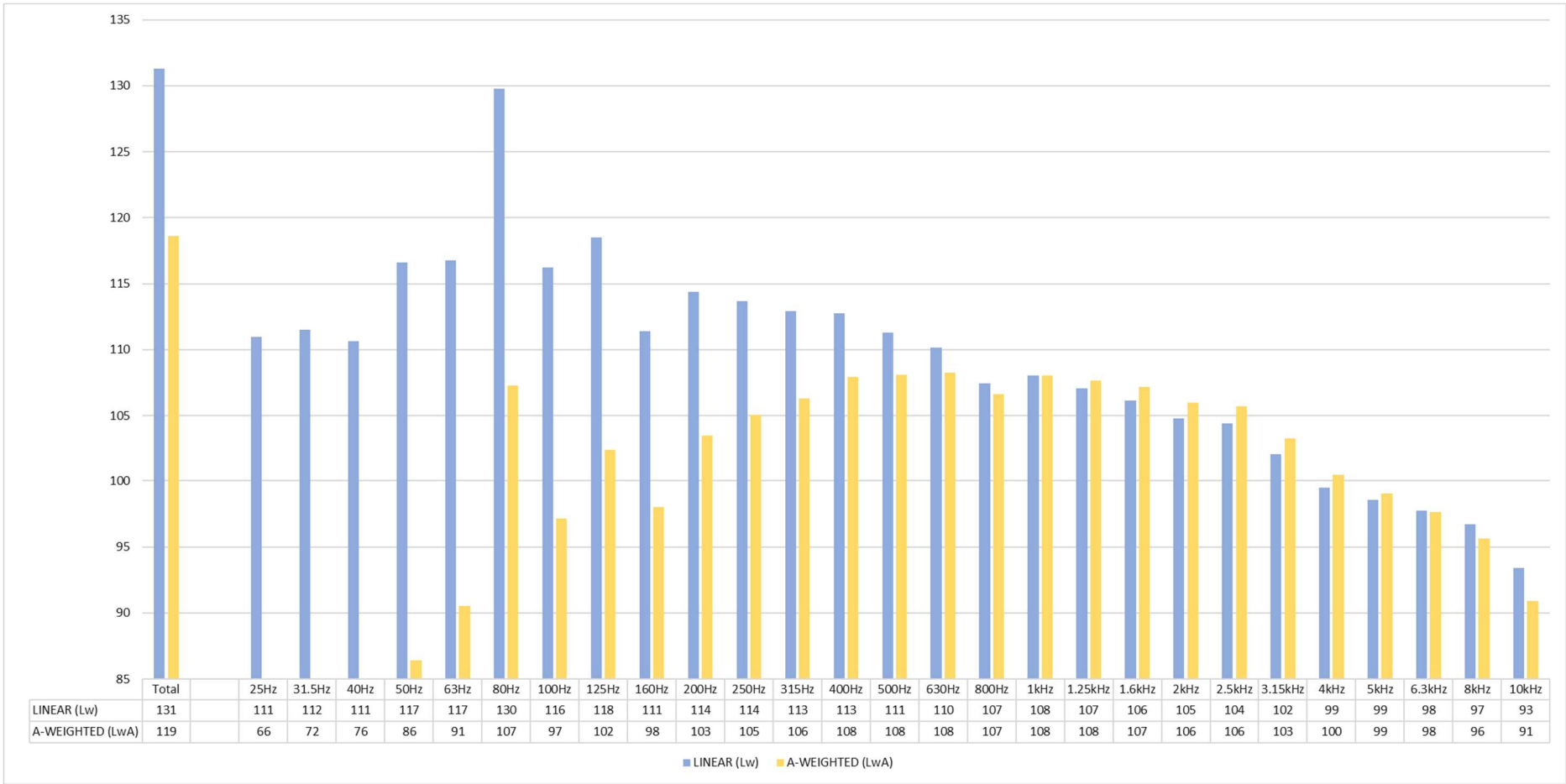


Figure 8: EX13I Dynamic

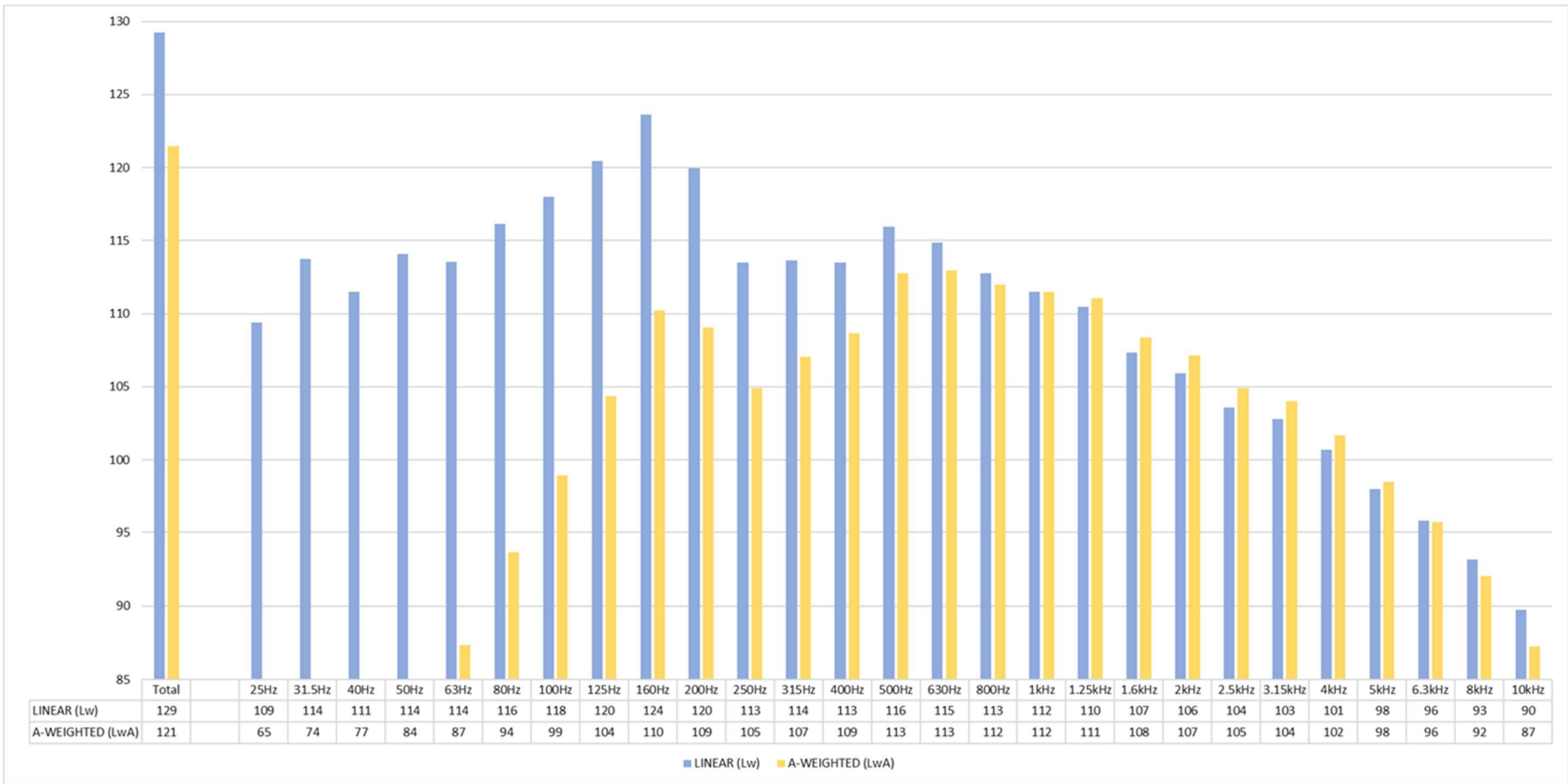


Figure 9: EX255 Stationary

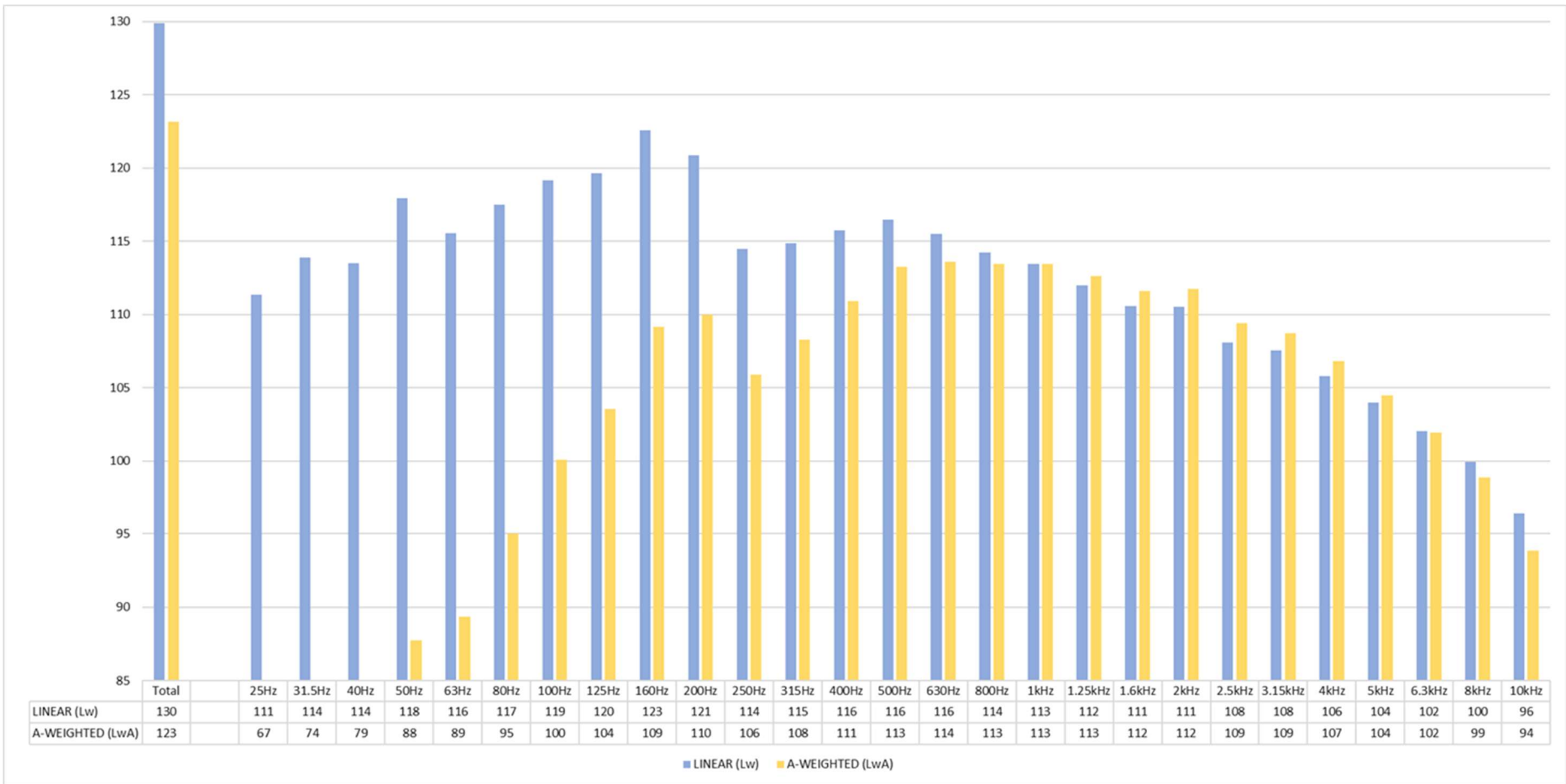


Figure 10: EX255 Dynamic

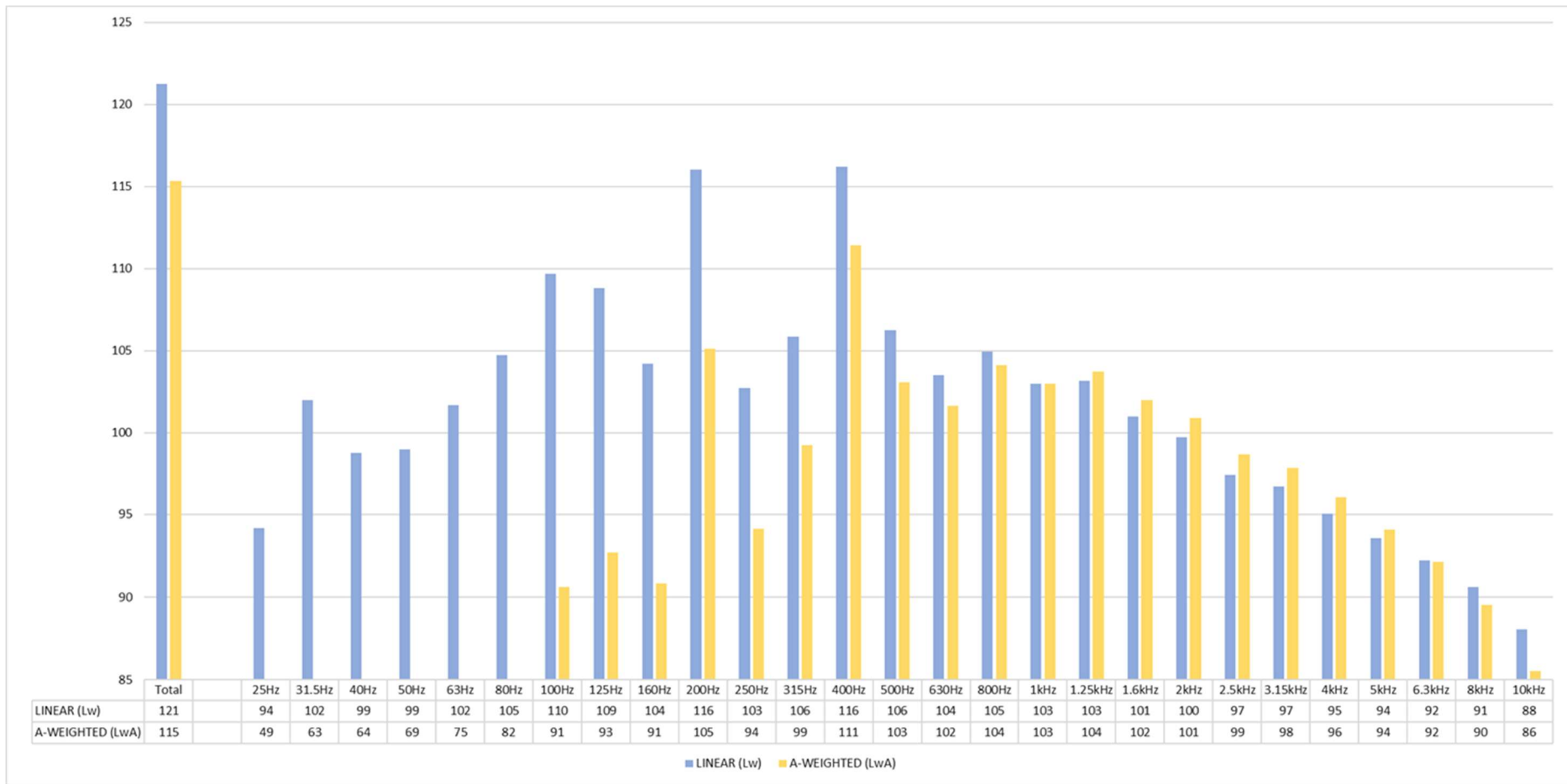


Figure 11: EX257 Stationary

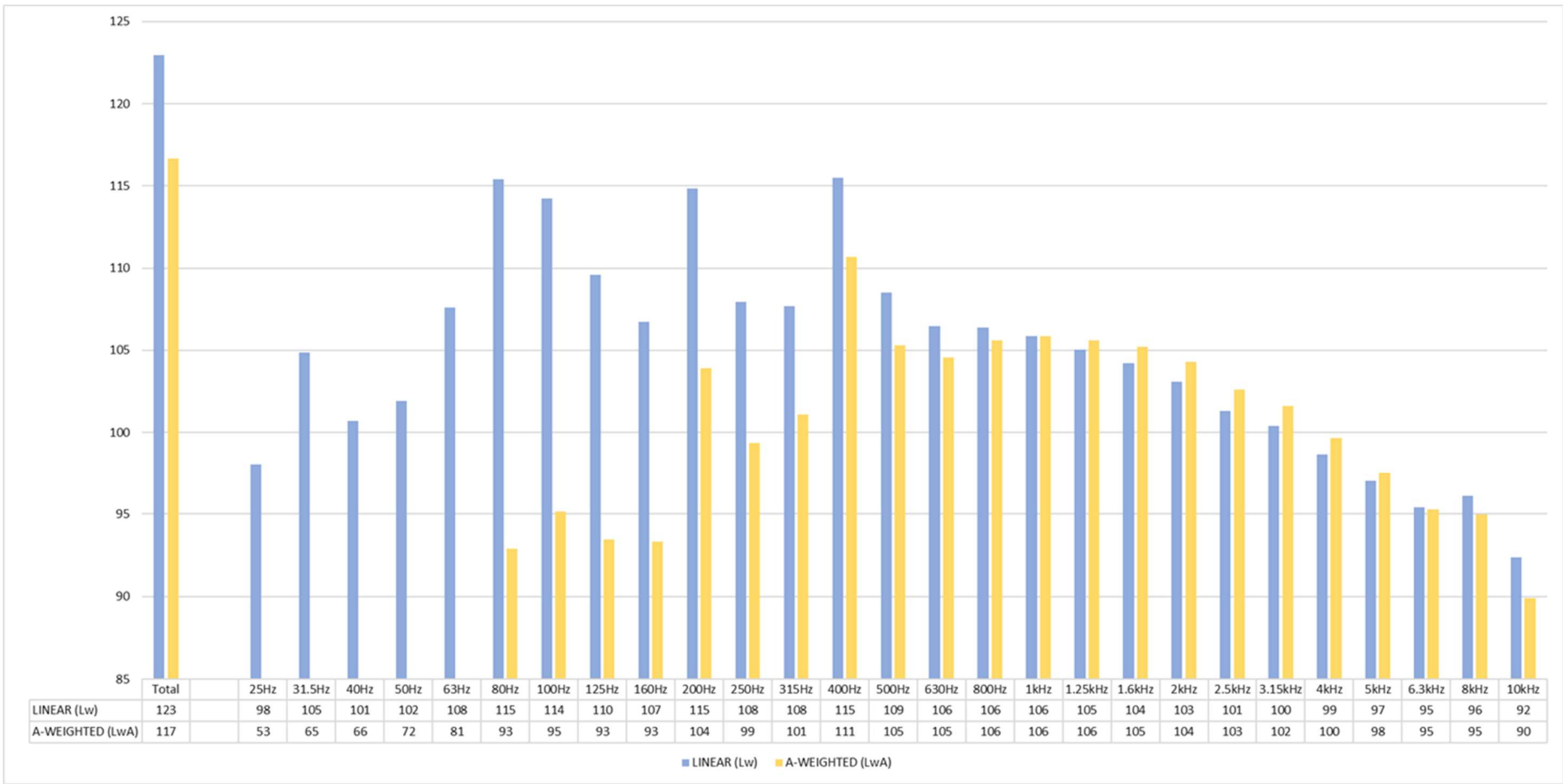


Figure 12: EX257 Dynamic

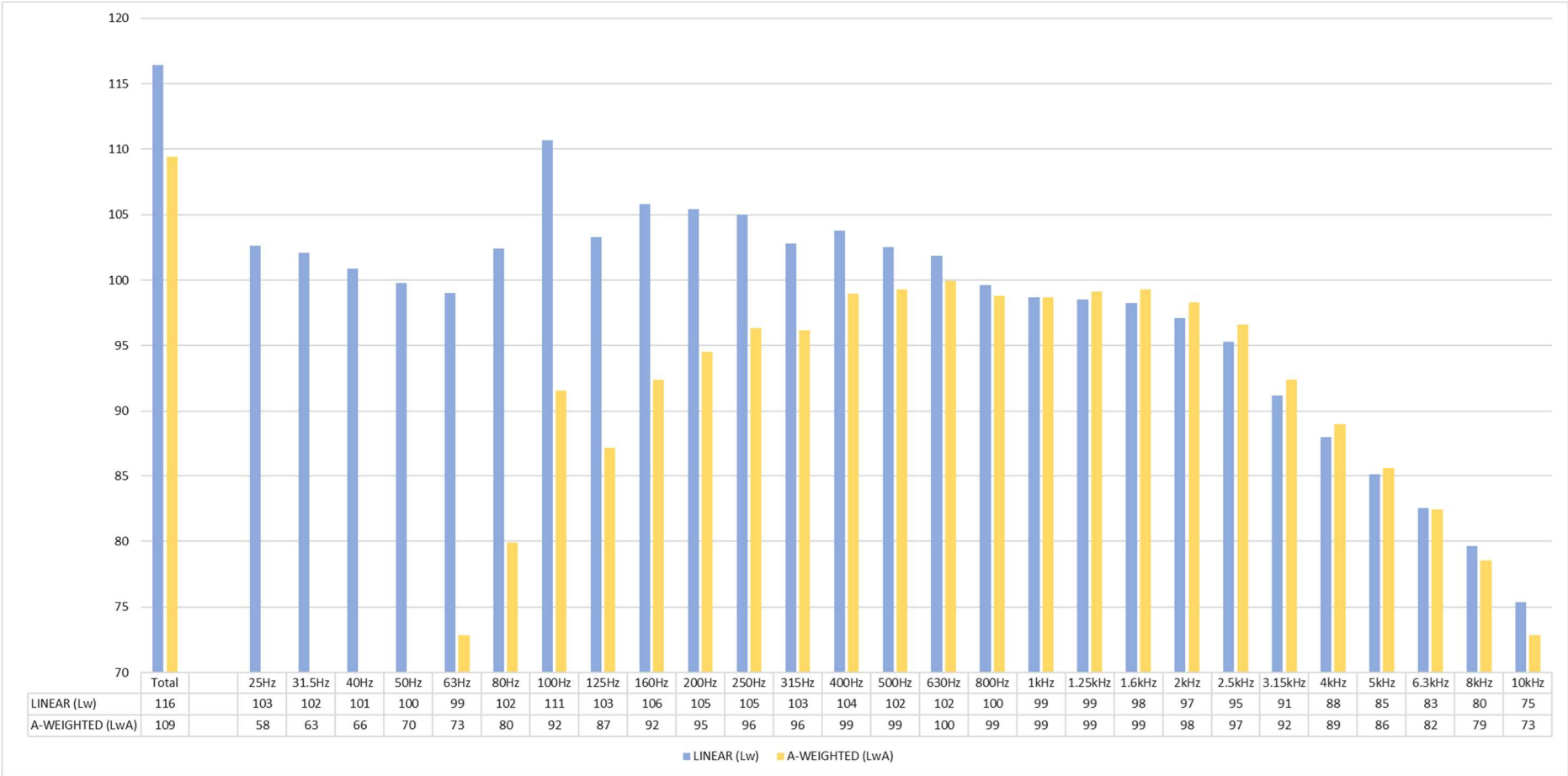


Figure I3: GR06I Stationary

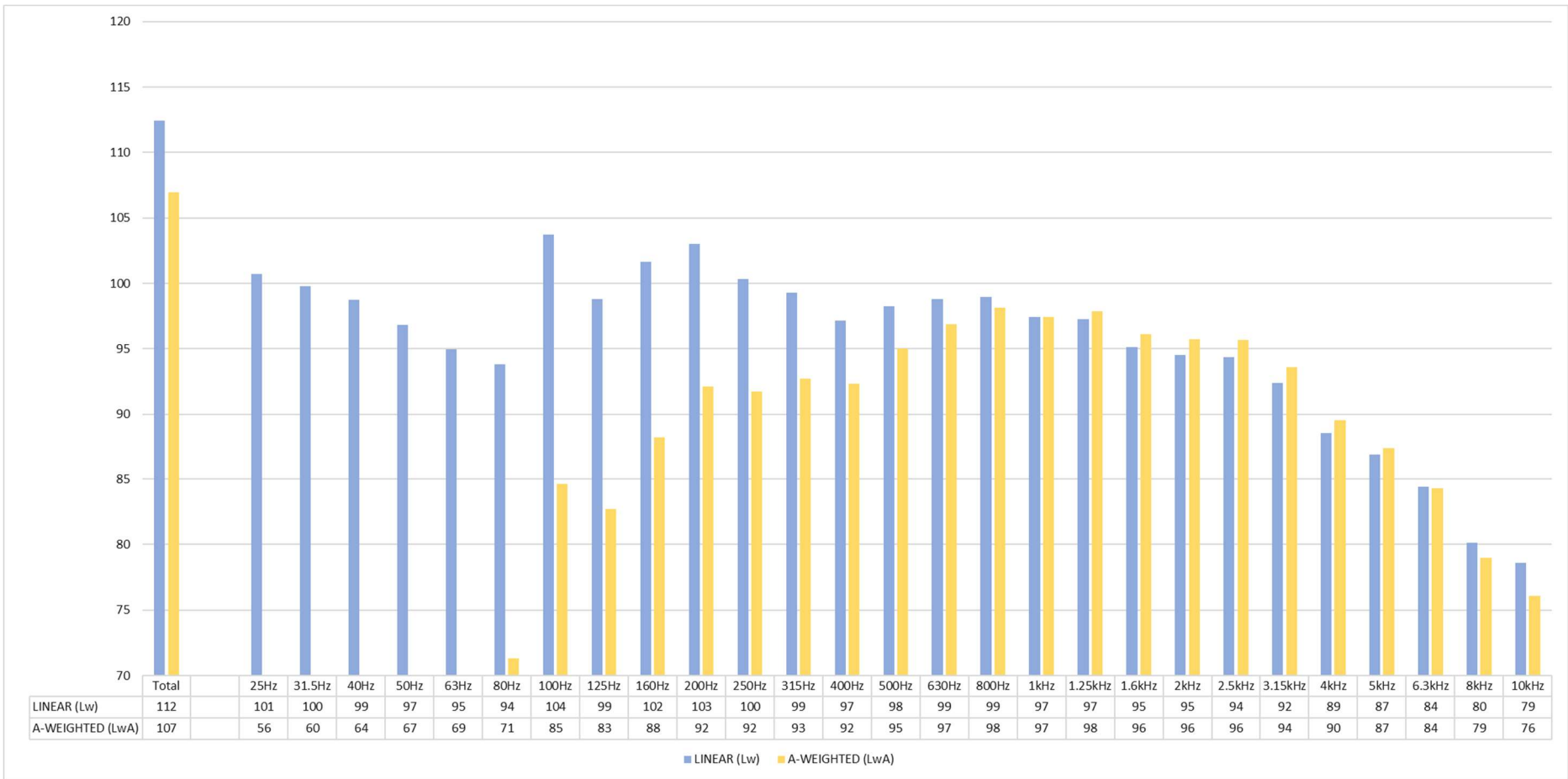


Figure 14: GR06I Dynamic Forwards

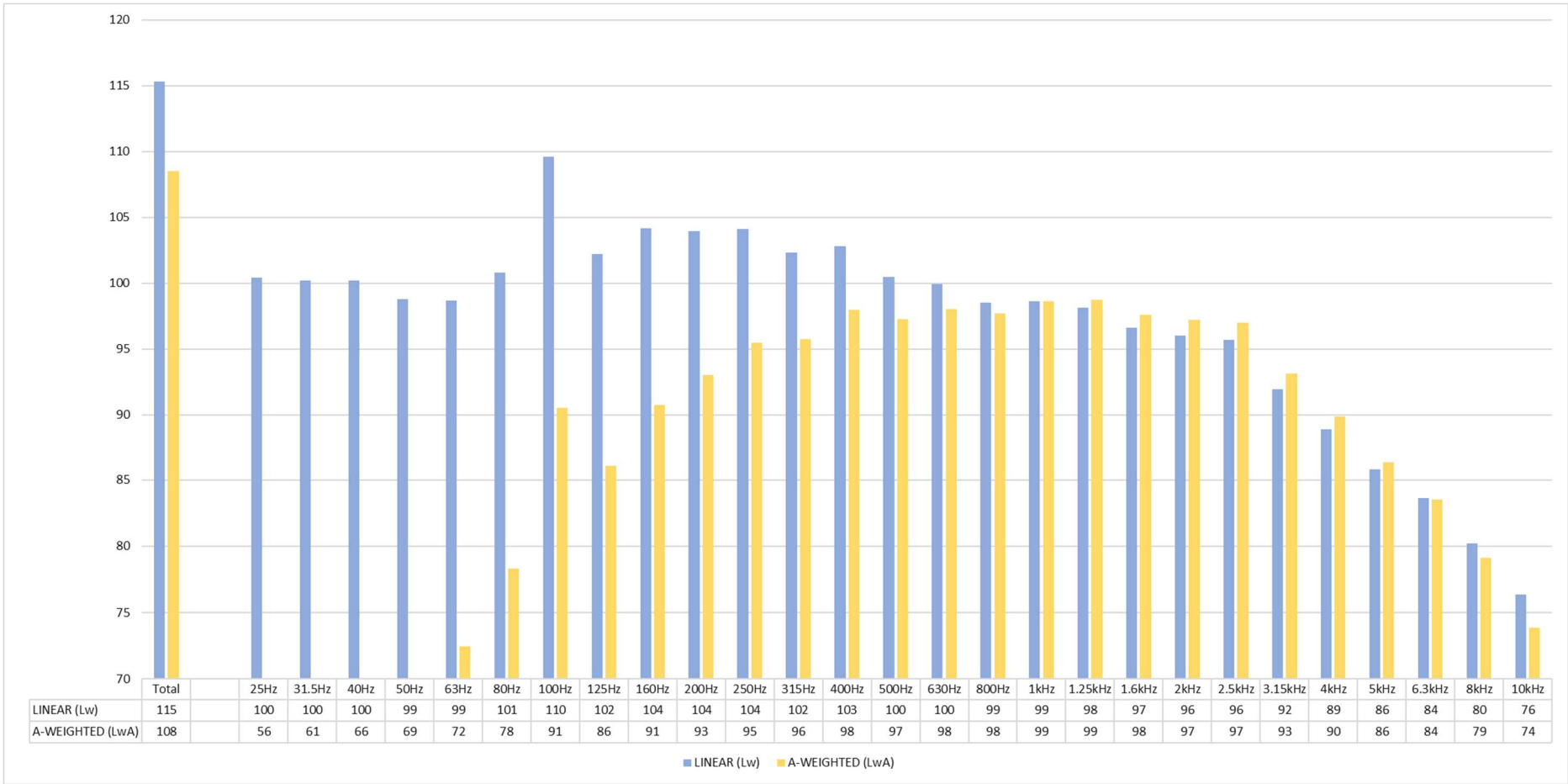


Figure I5: GR069 Stationary

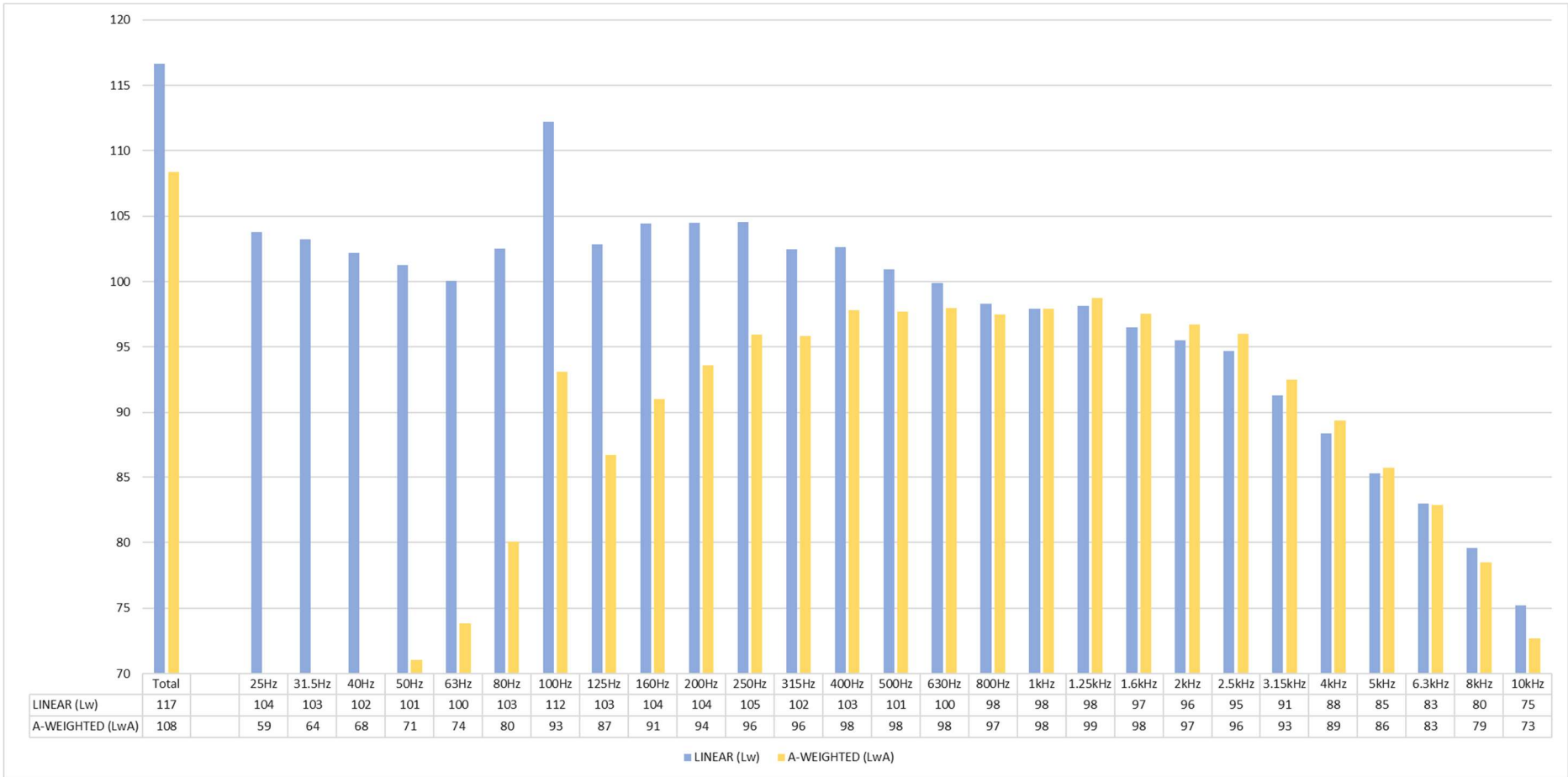


Figure 16: GR069 Dynamic Forwards

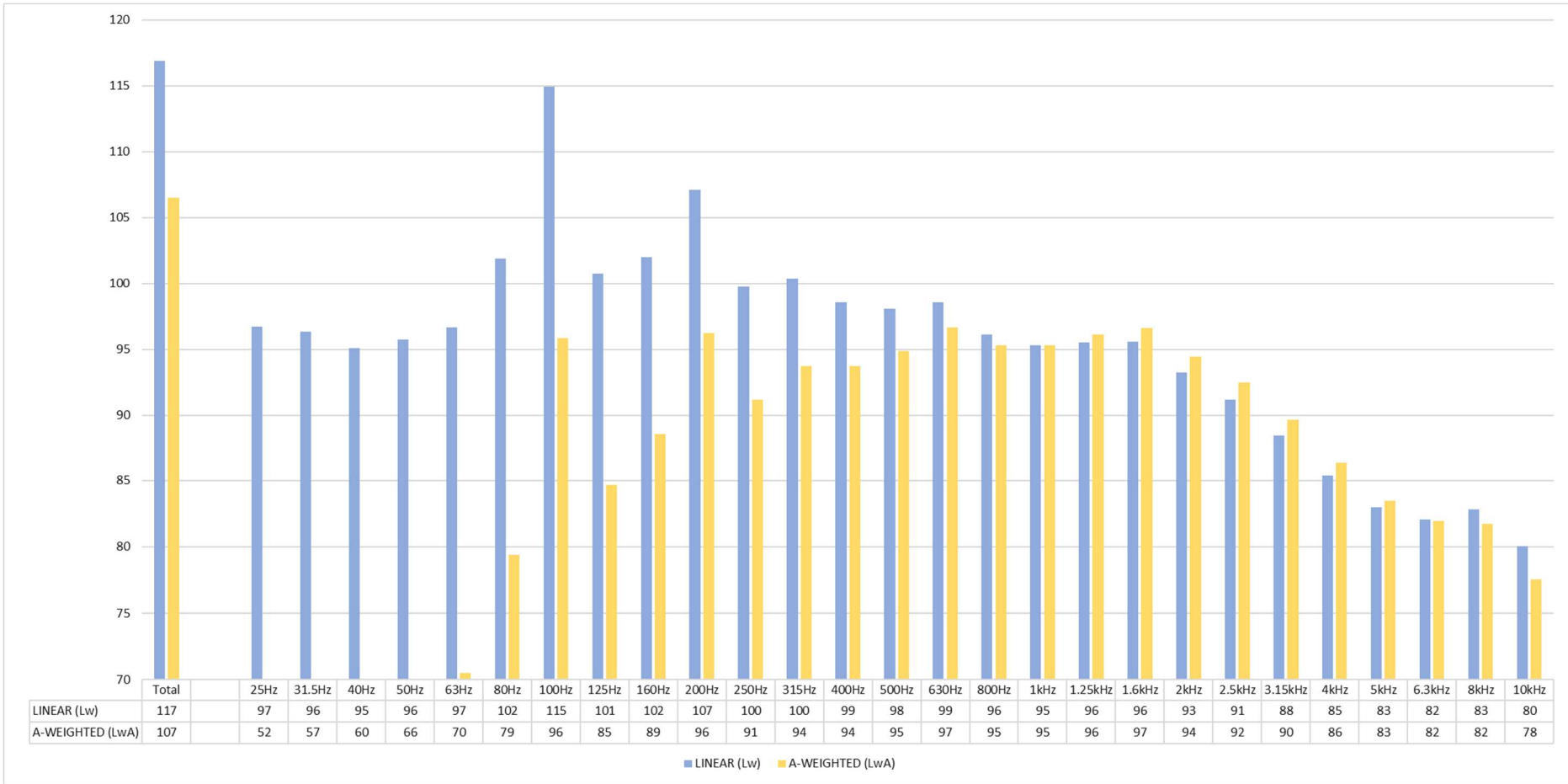


Figure 17: WLI90 Stationary

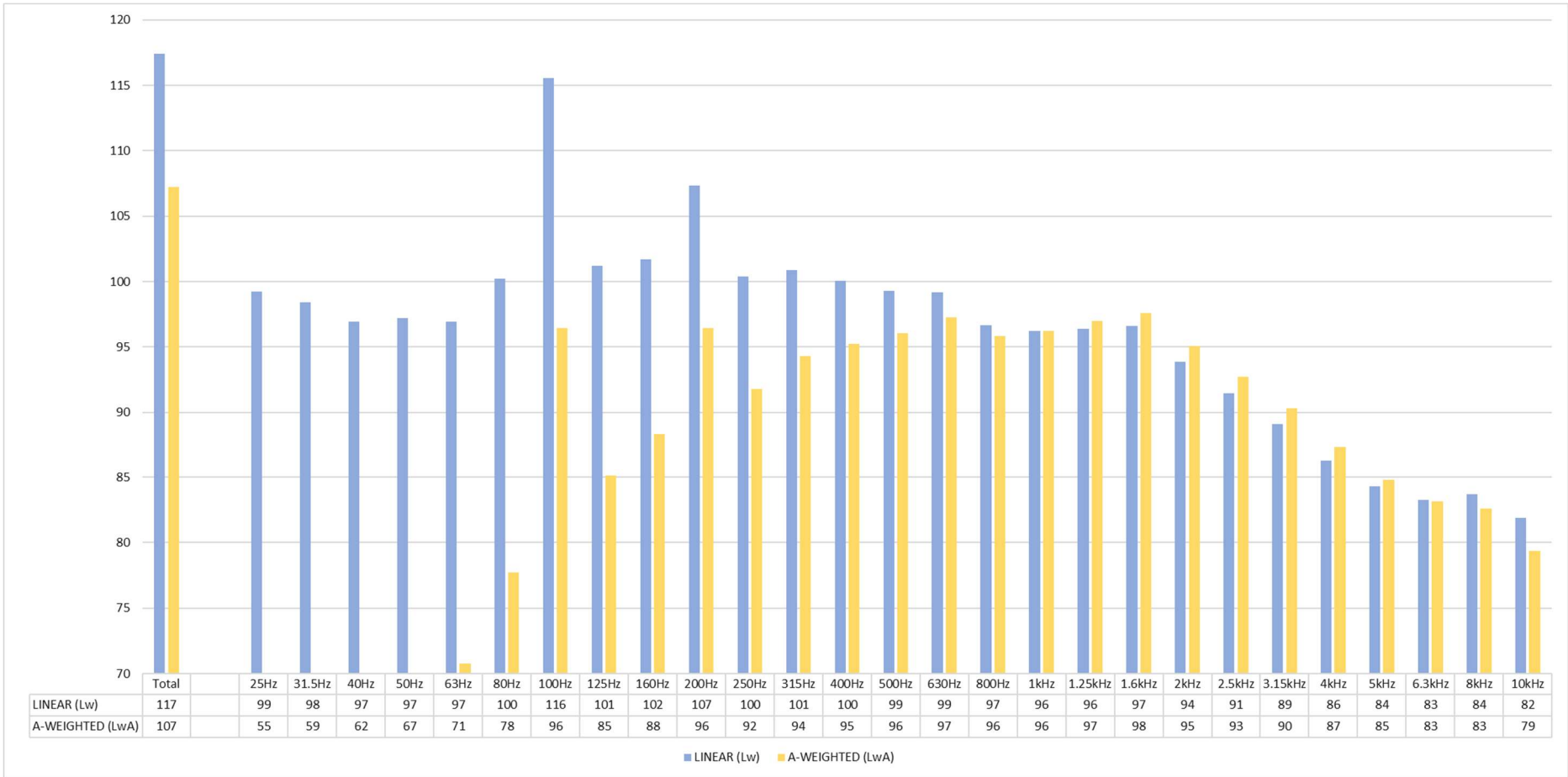


Figure 18: WLI90 Dynamic Forwards

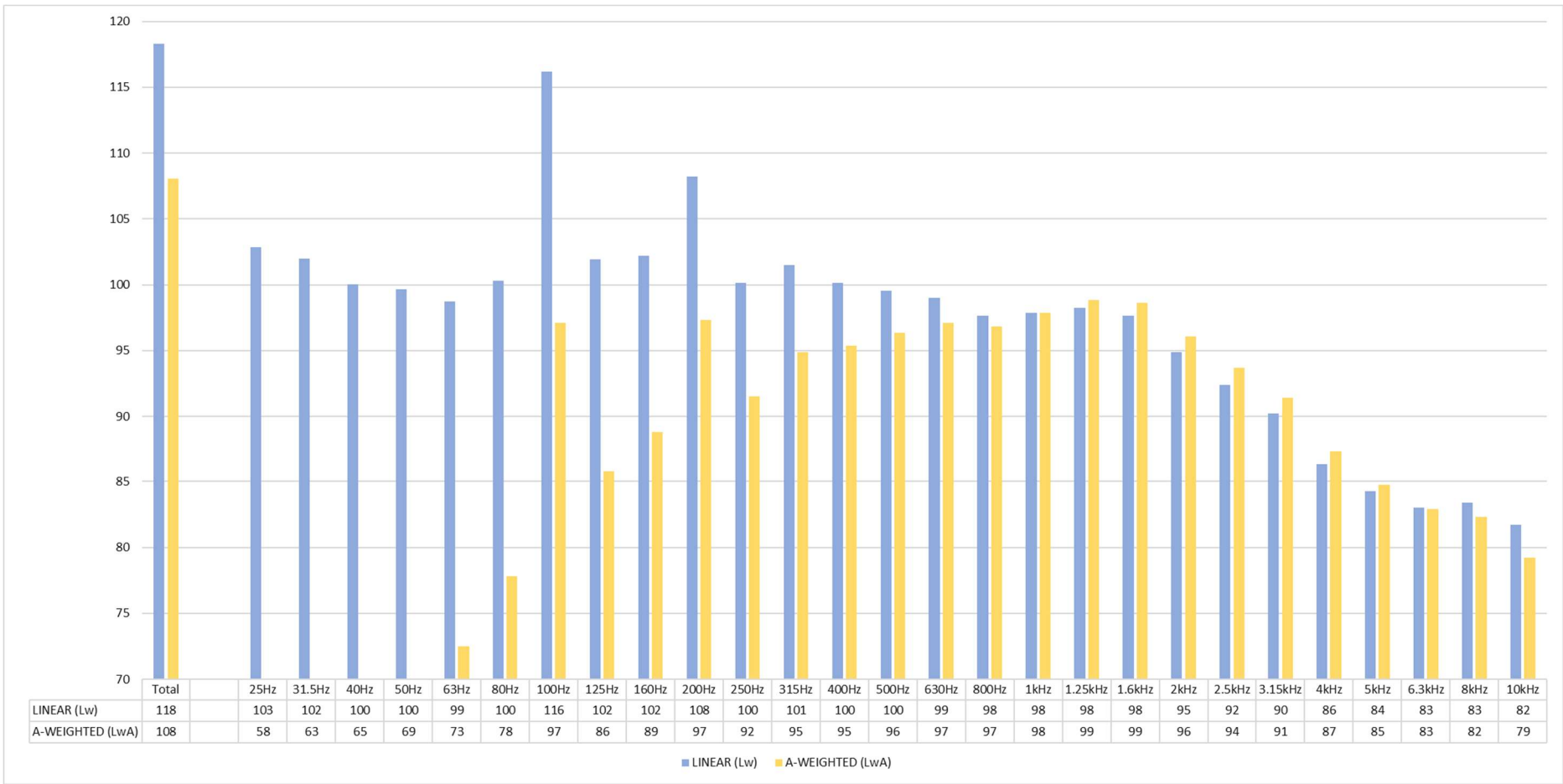


Figure 19: WLI90 Dynamic Reverse

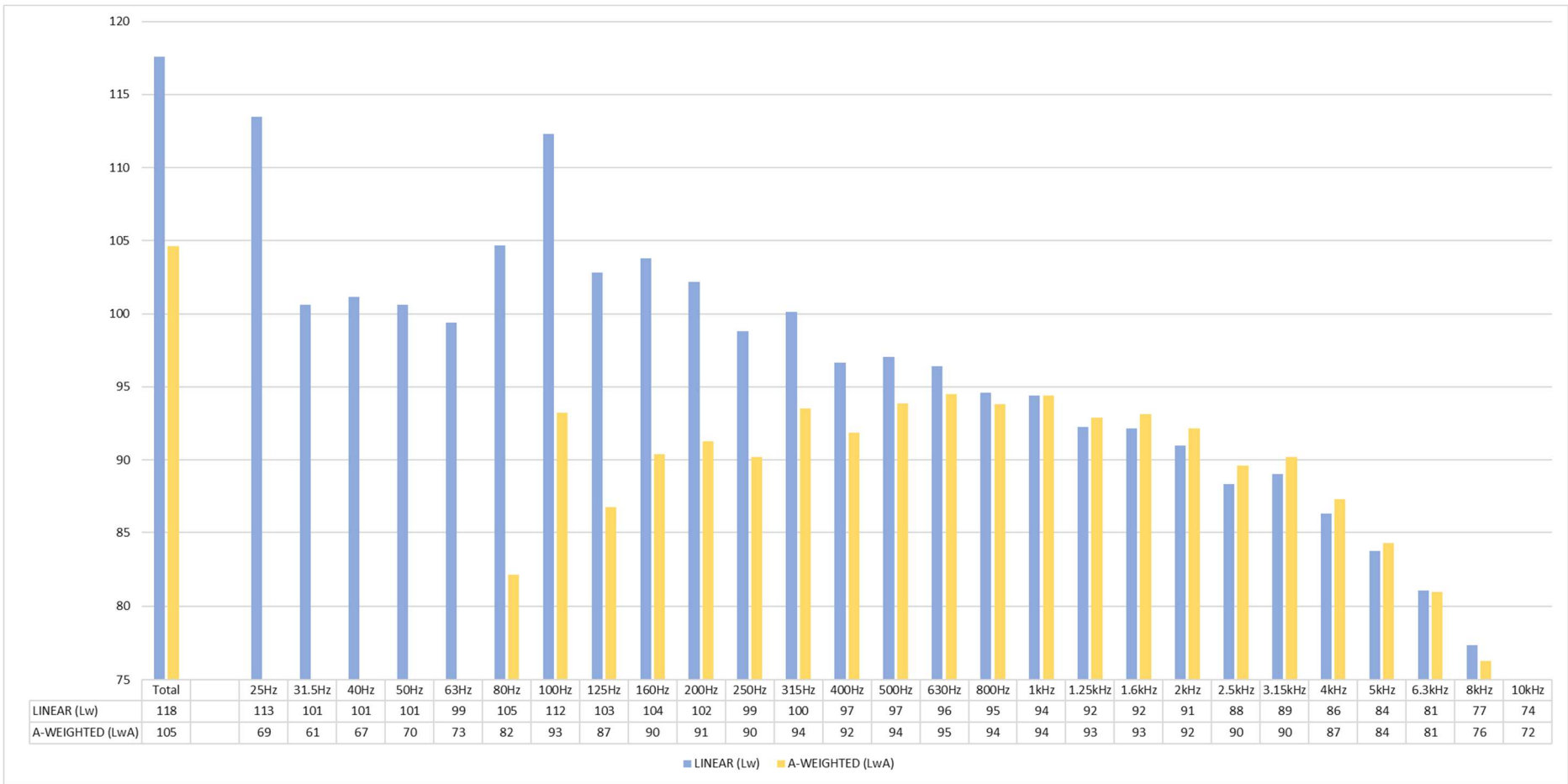


Figure 20: TD03 Stationary

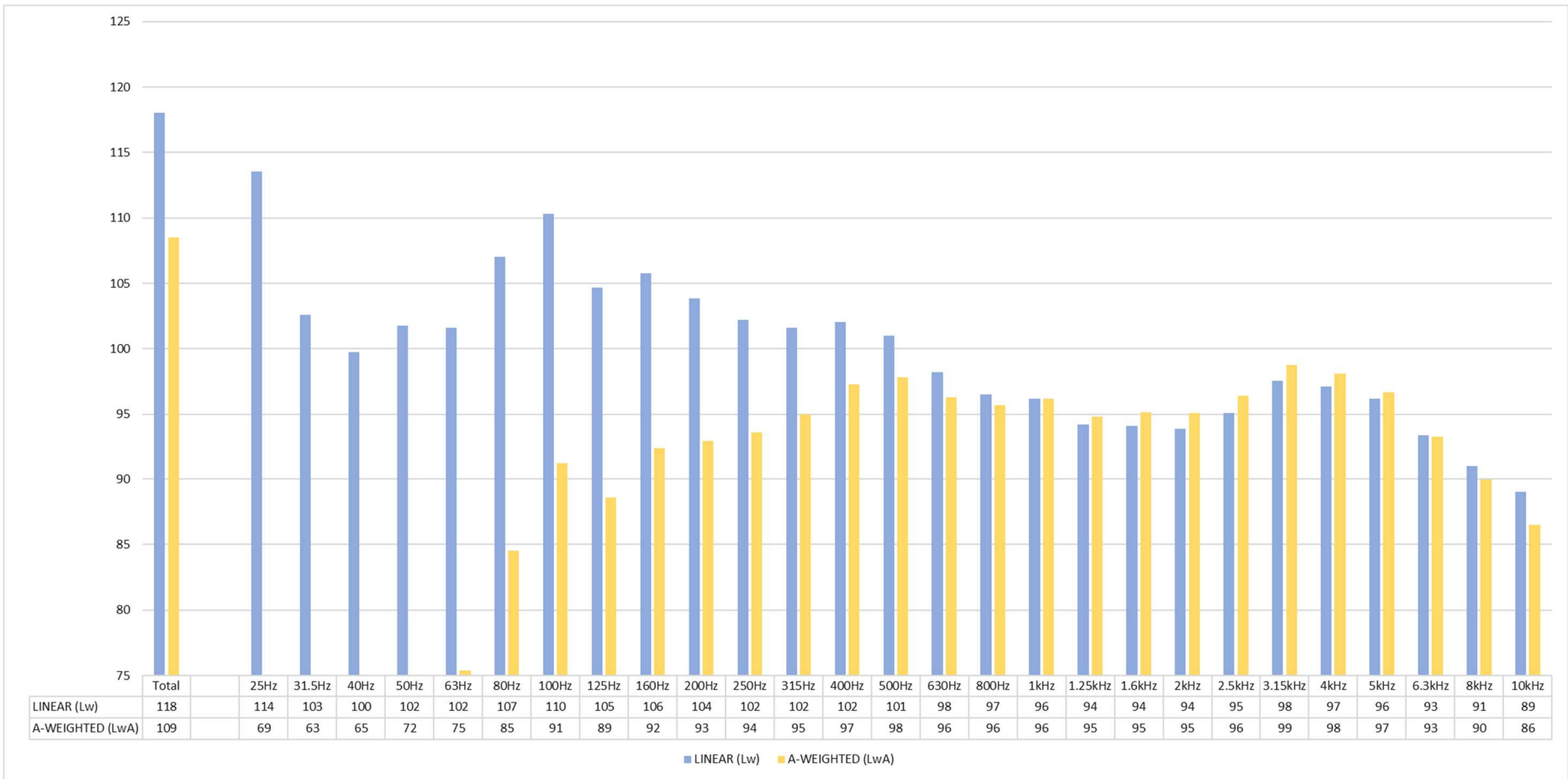


Figure 21: TD03 Dynamic Forwards

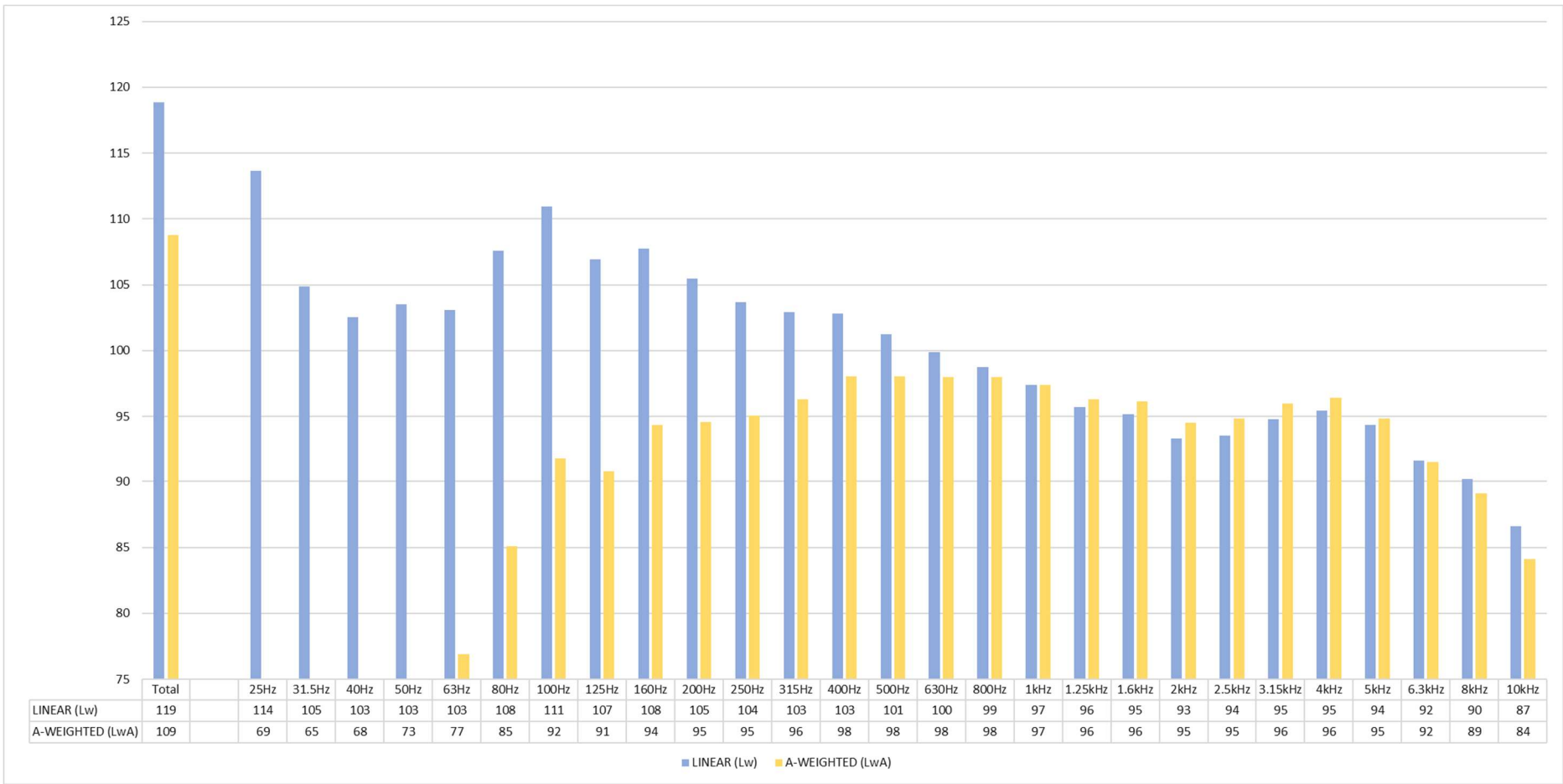


Figure 22: TD03 Dynamic Reverse

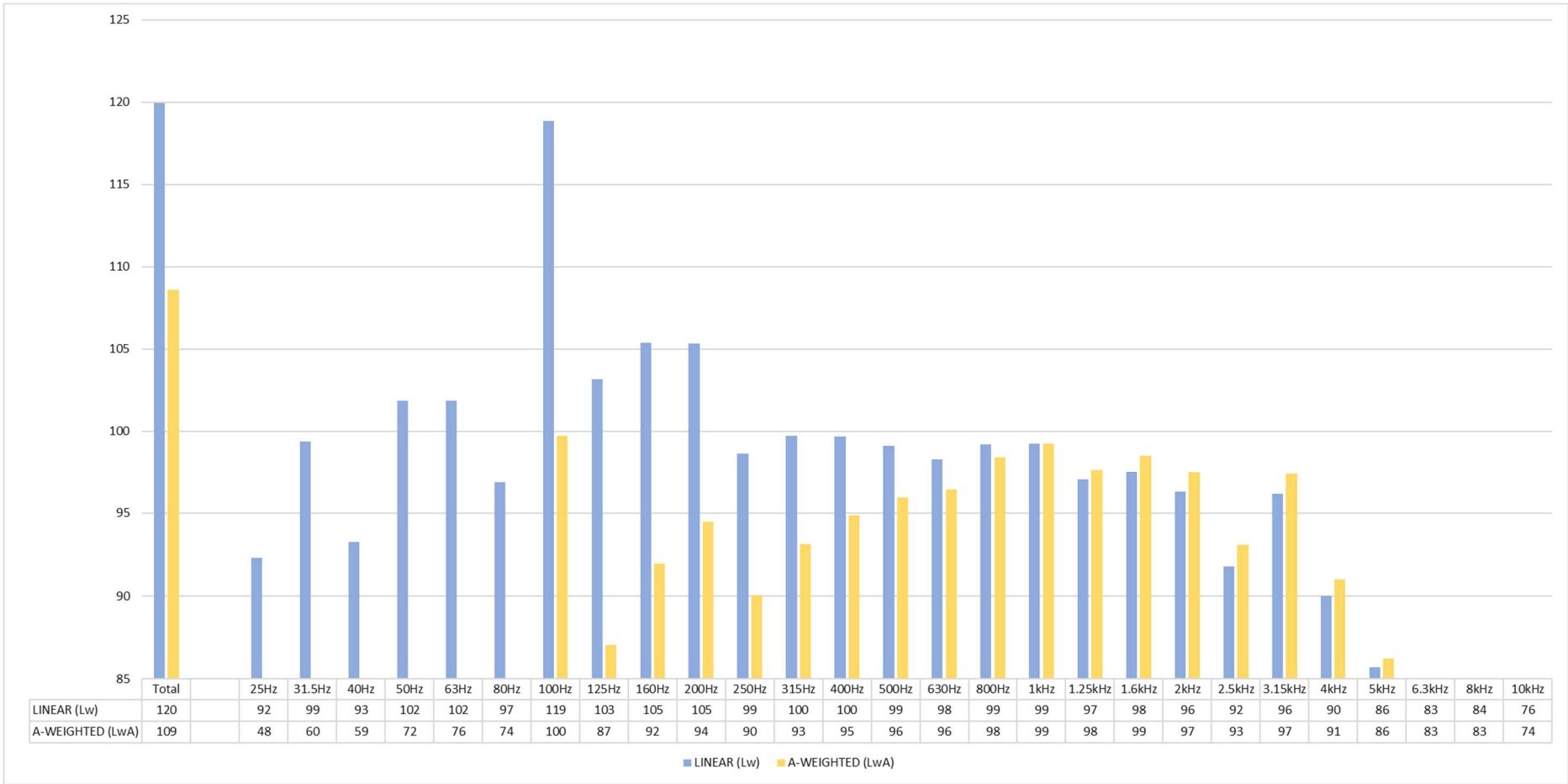


Figure 23: TD010 Stationary

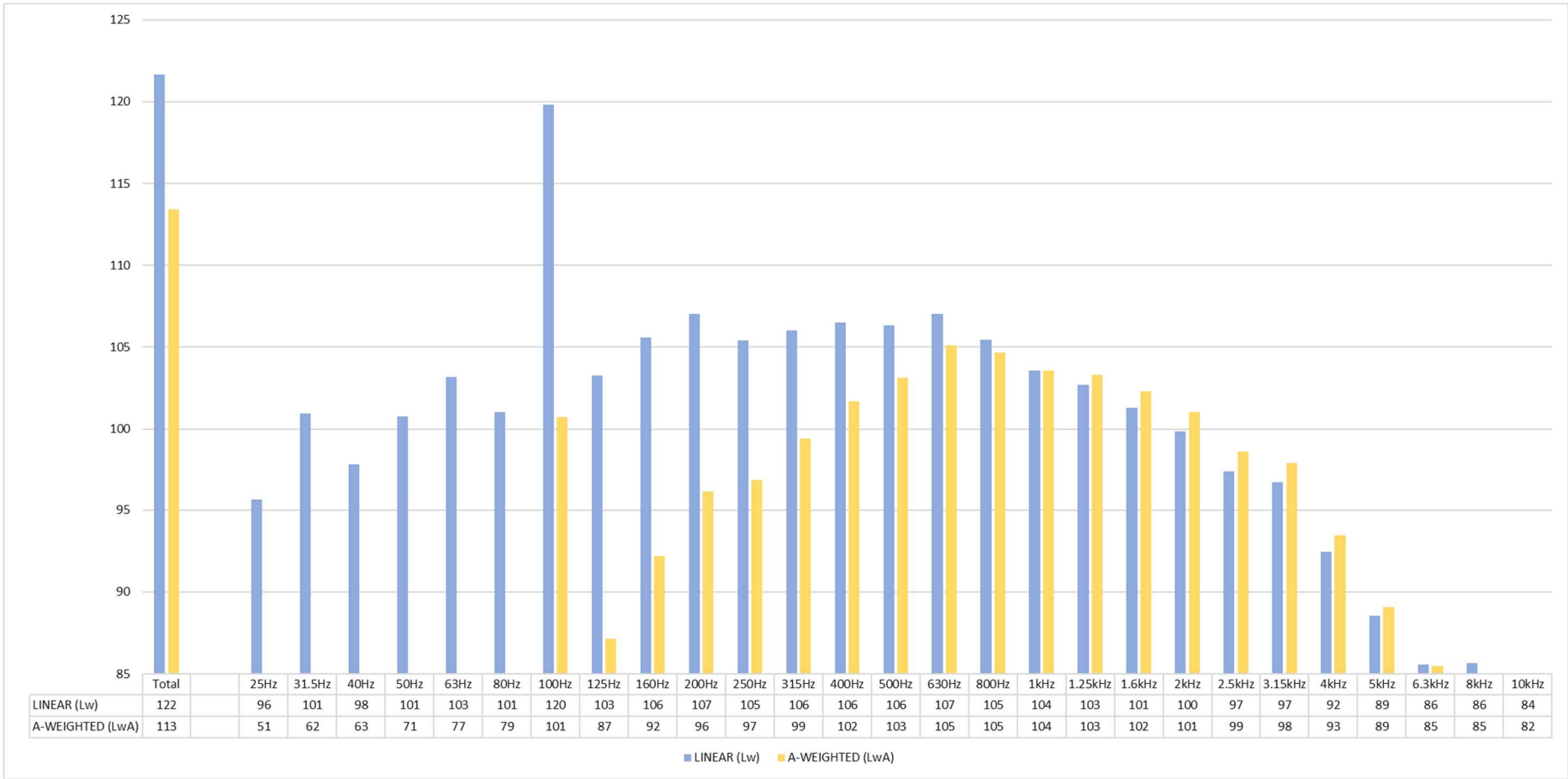


Figure 24: TD010 Dynamic Forwards

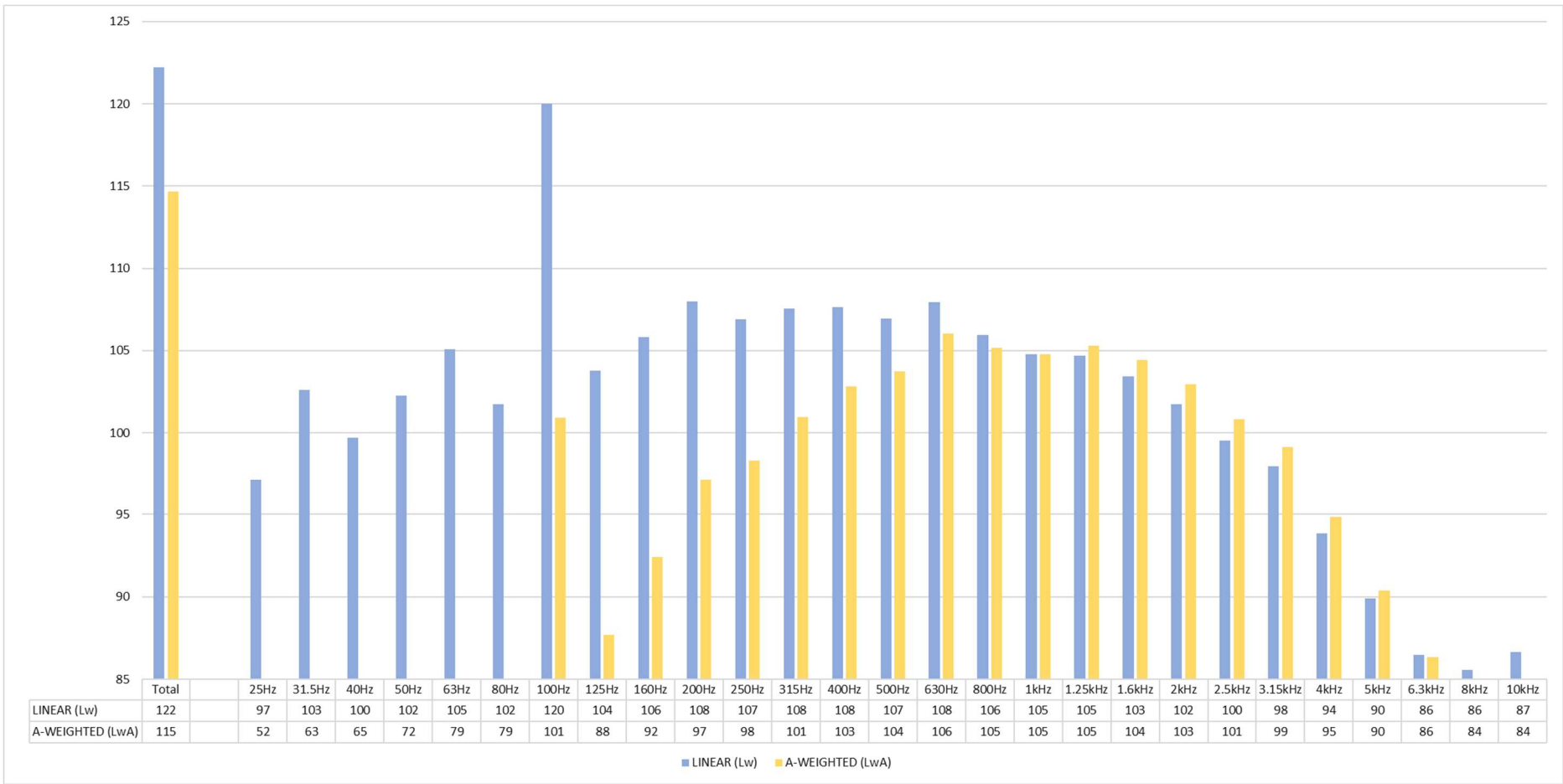


Figure 25: TD010 Dynamic Reverse

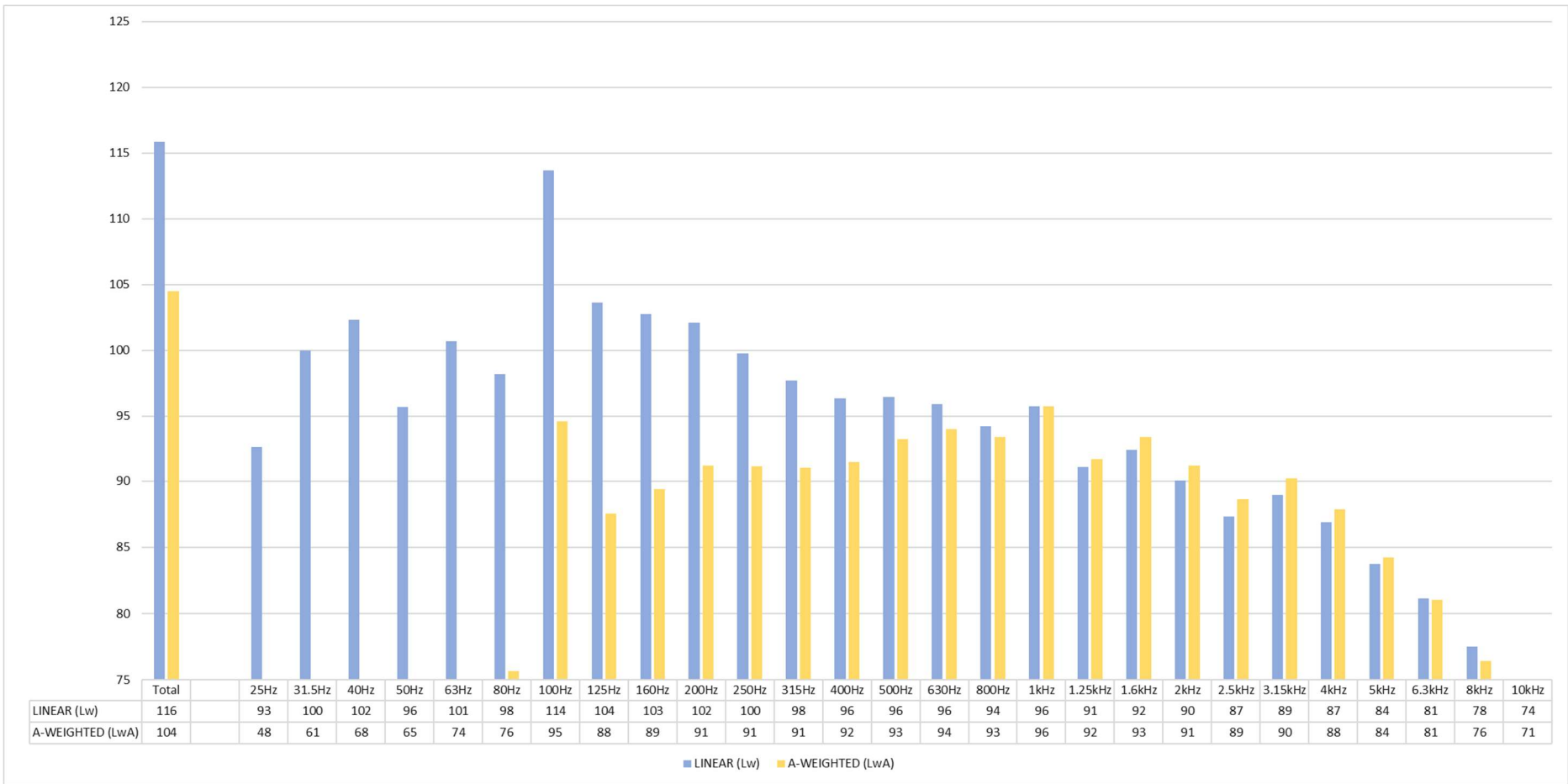


Figure 26: TD080 Stationary

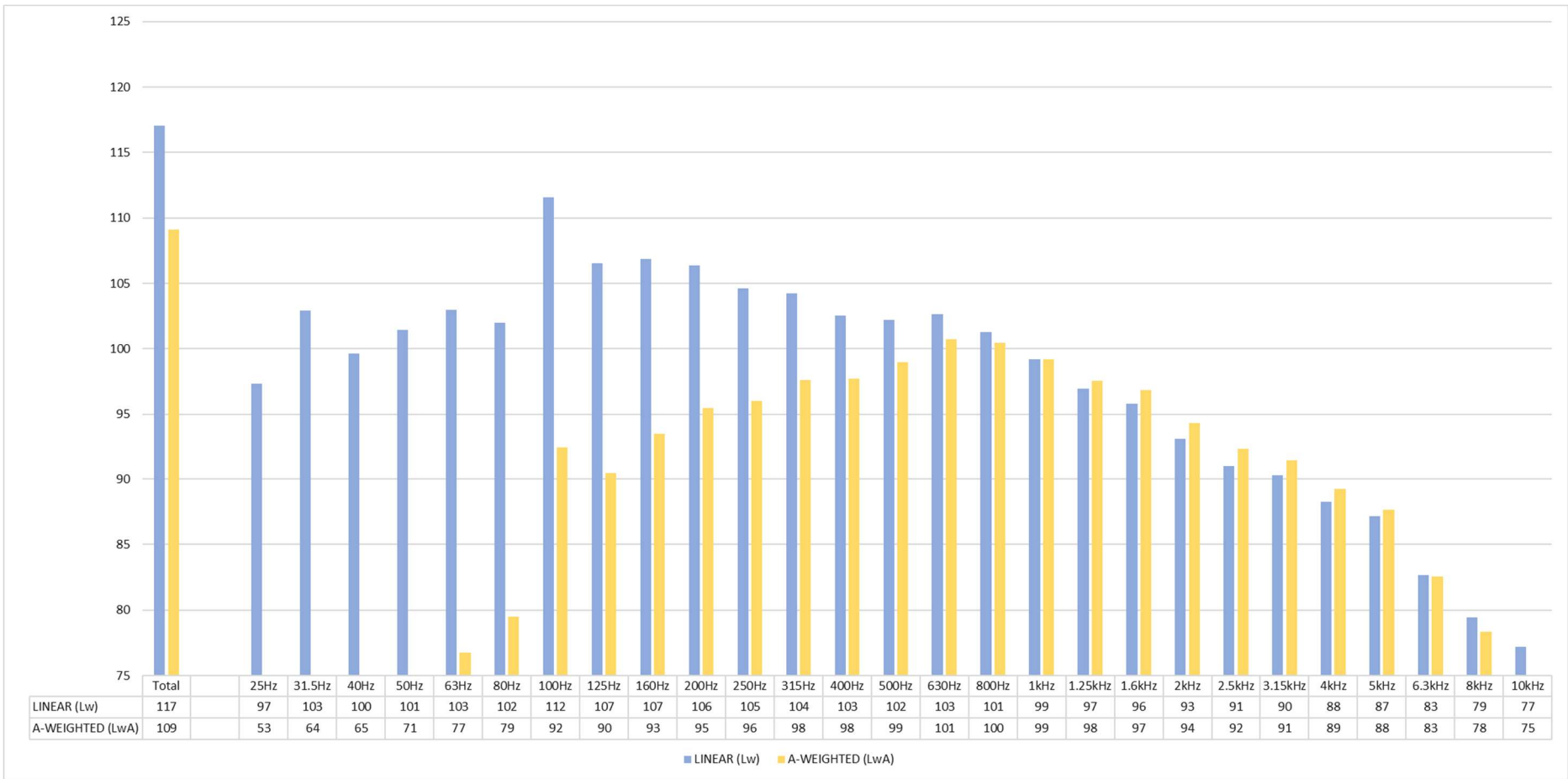


Figure 27: TD080 Dynamic Forwards

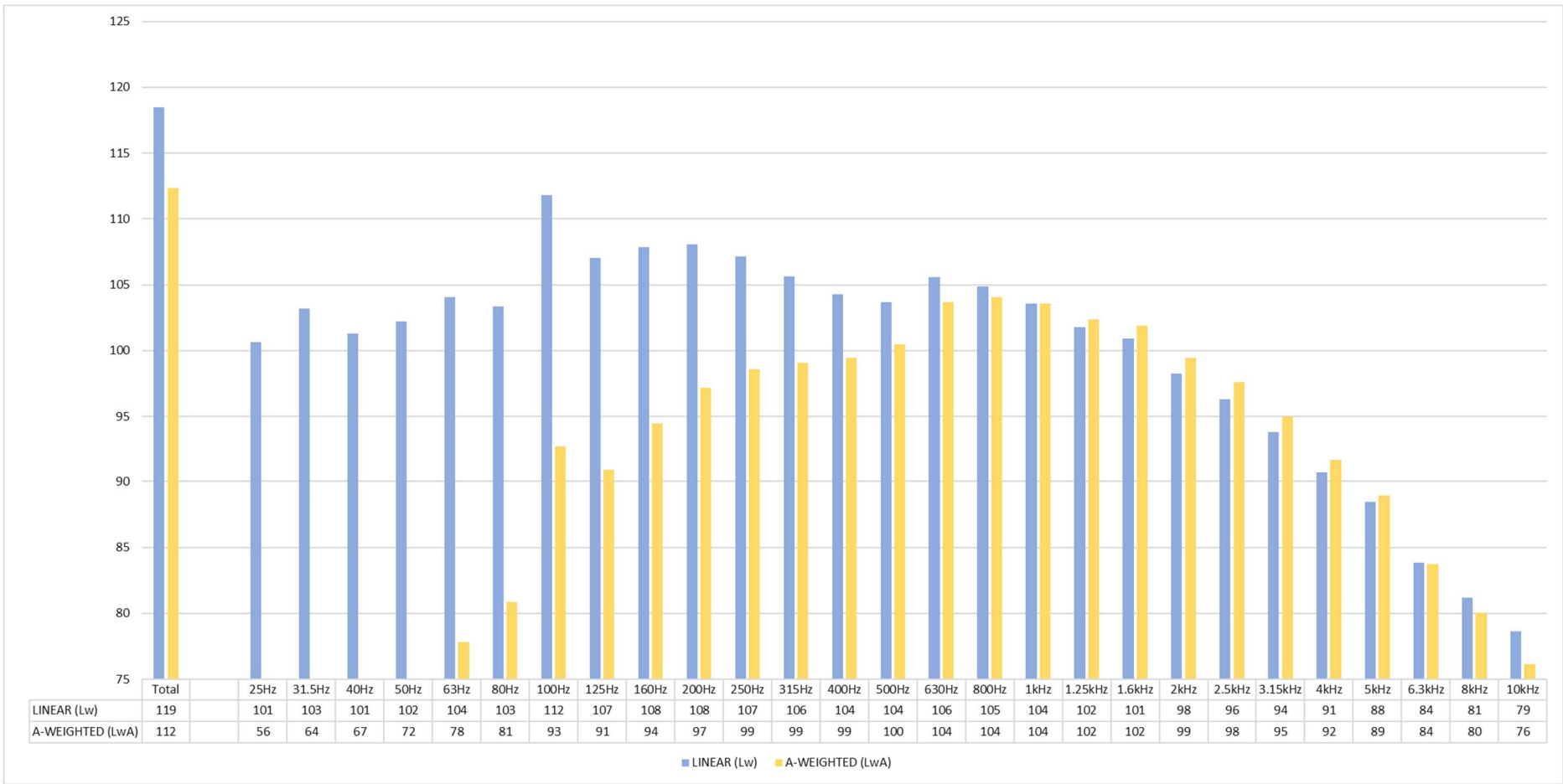


Figure 28: TD080 Dynamic Reverse

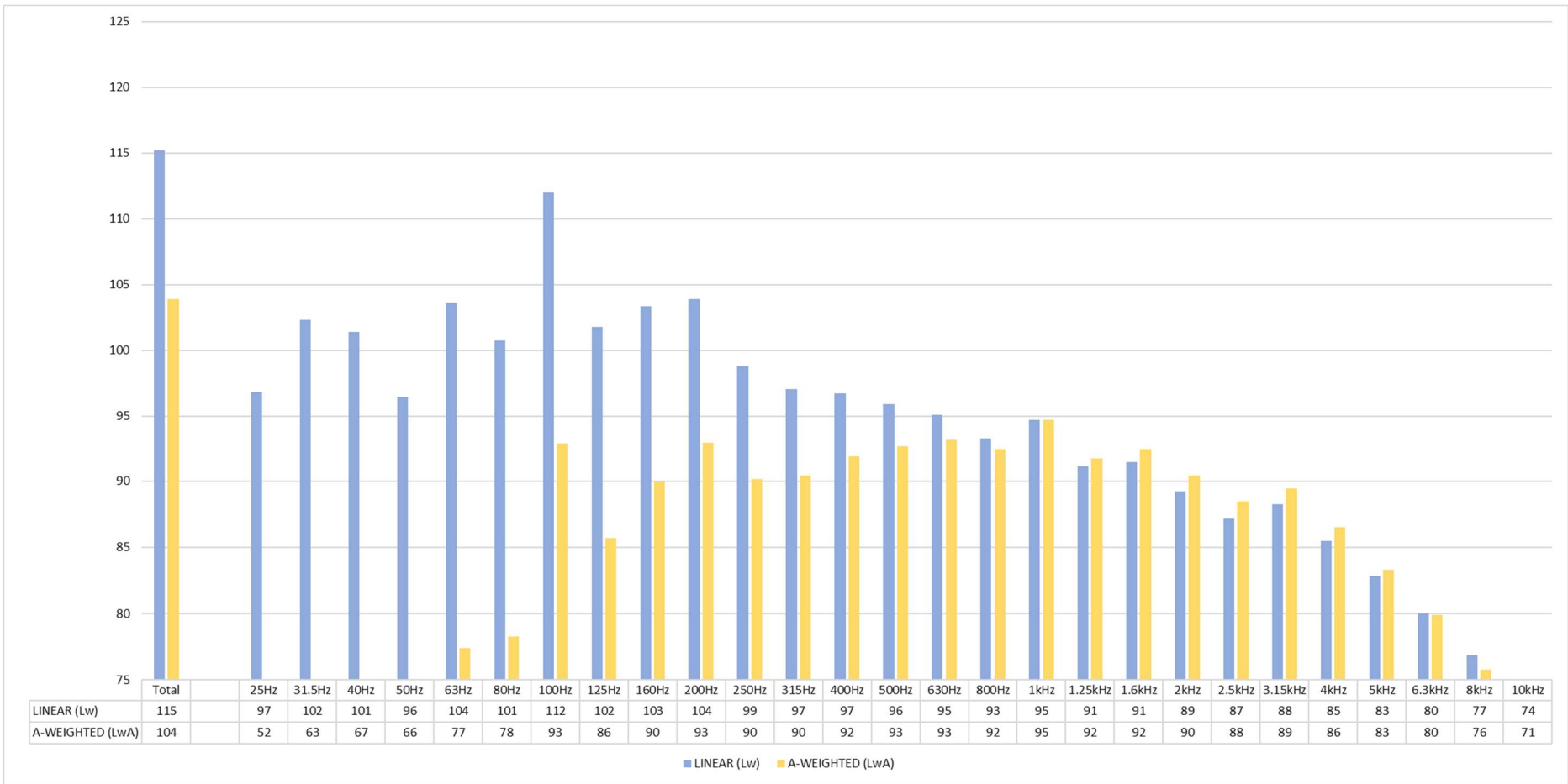


Figure 29: TD082 Stationary

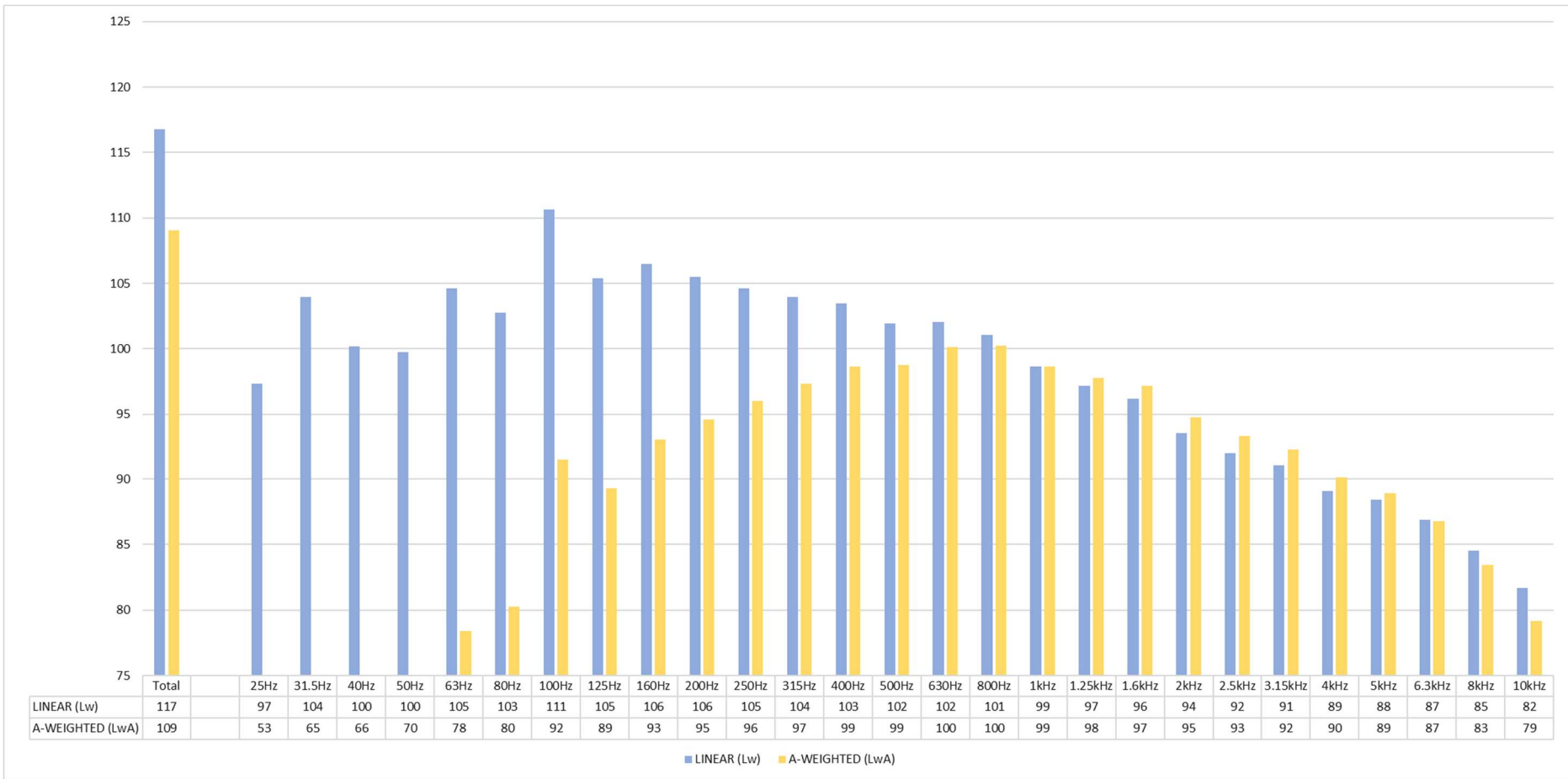


Figure 30: TD082 Dynamic Forwards

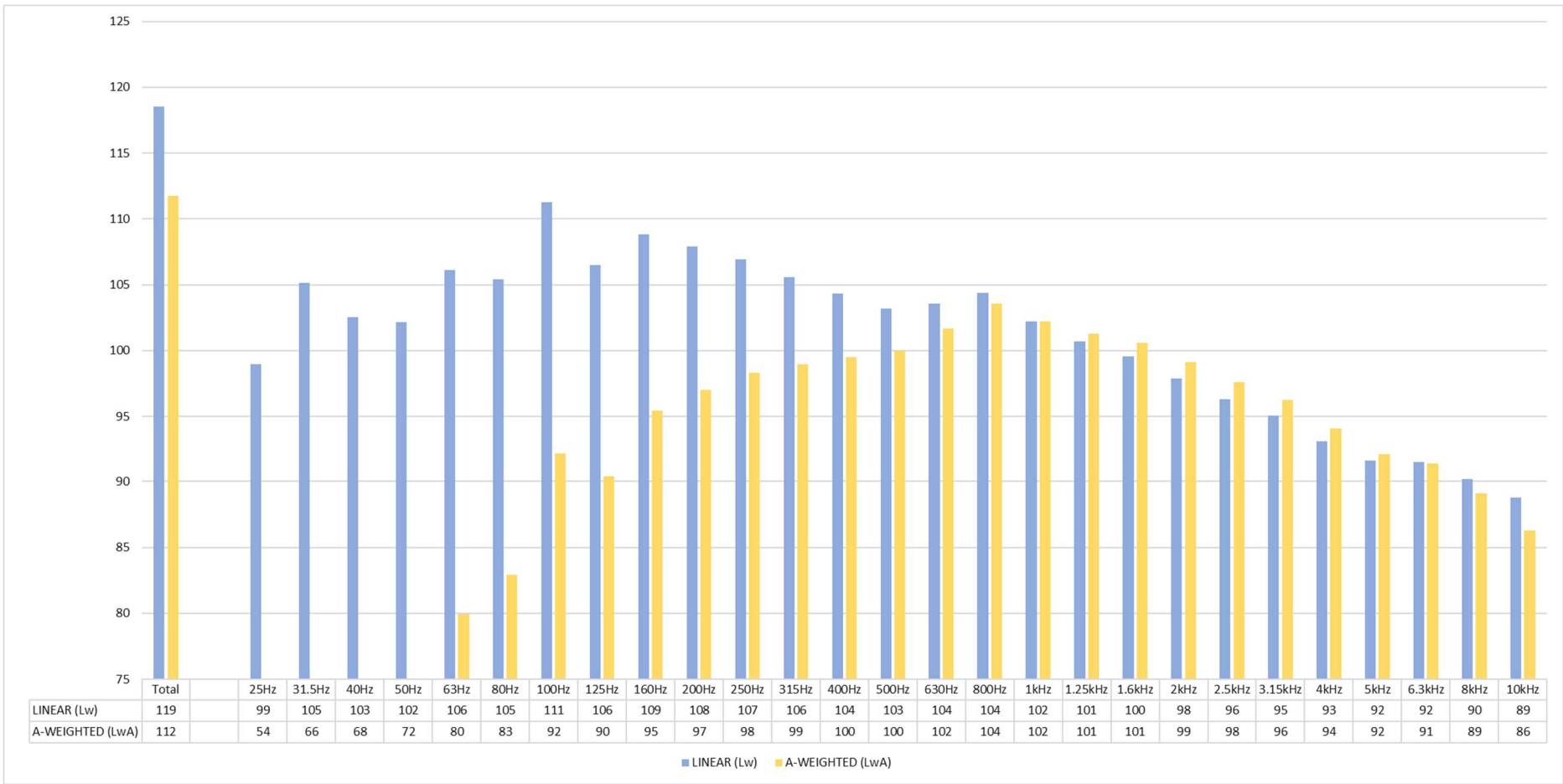


Figure 31: TD082 Dynamic Reverse

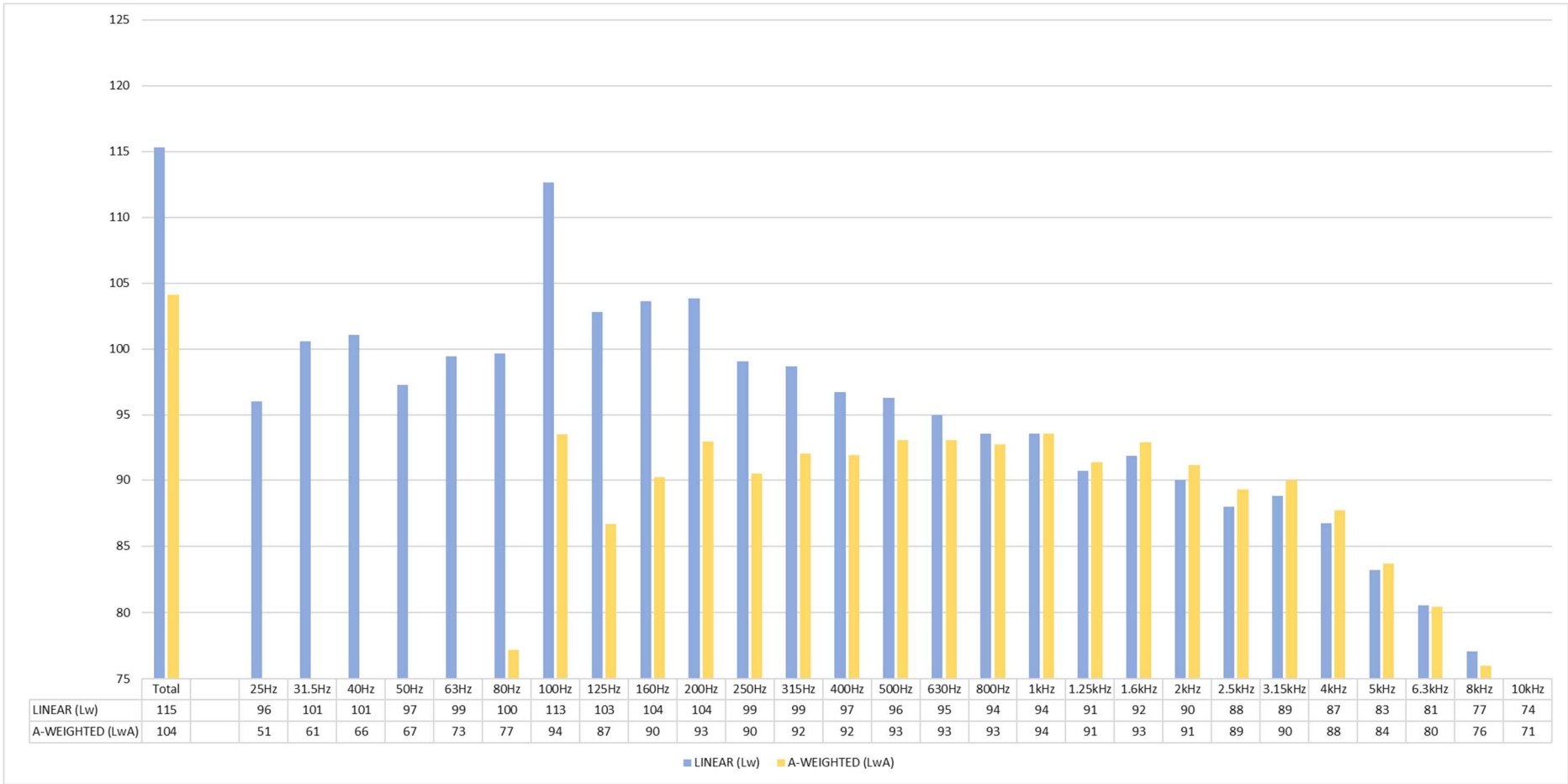


Figure 32: TD083 Stationary

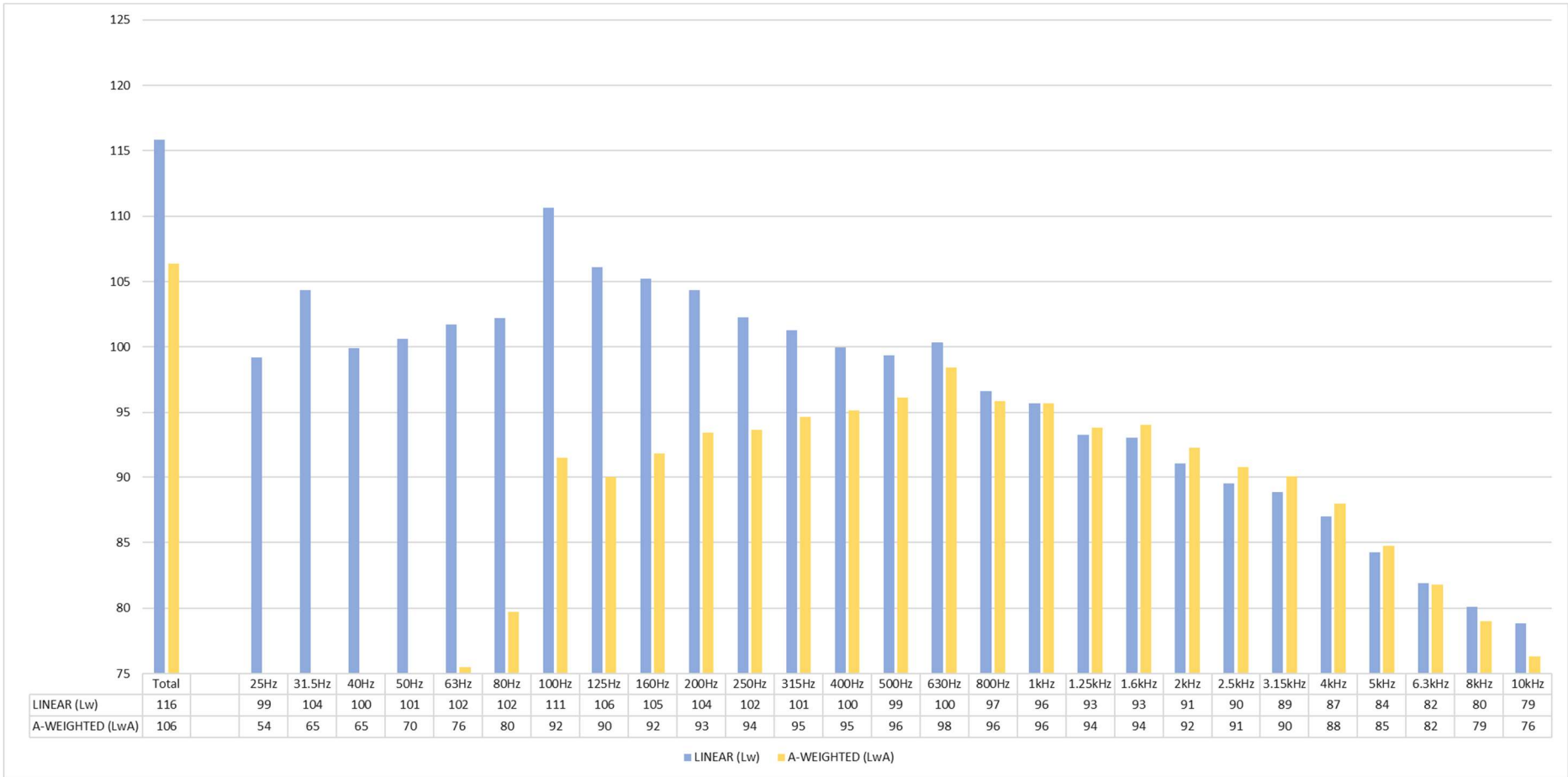


Figure 33: TD083 Dynamic Forwards

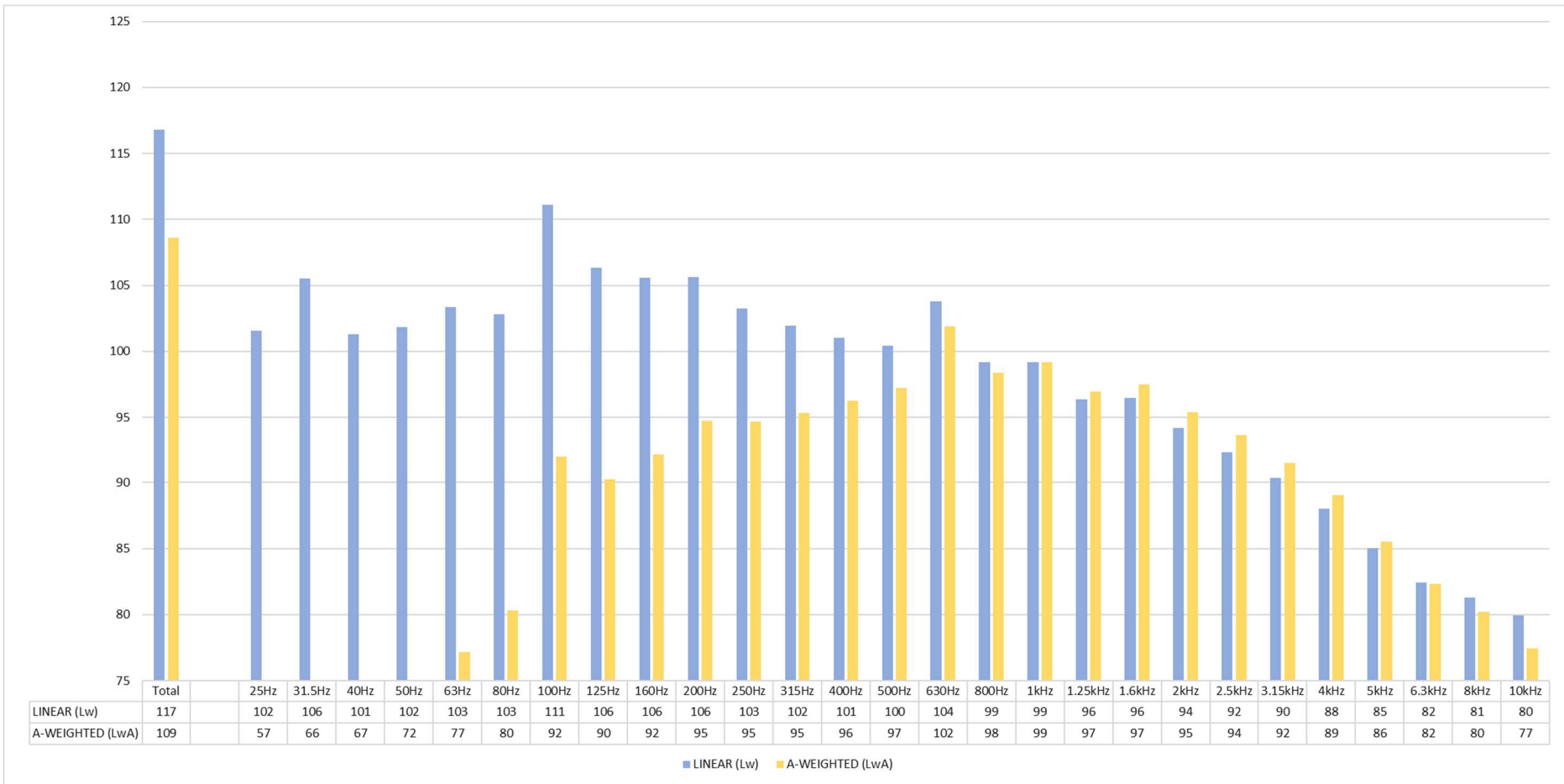


Figure 34: TD083 Dynamic Reverse

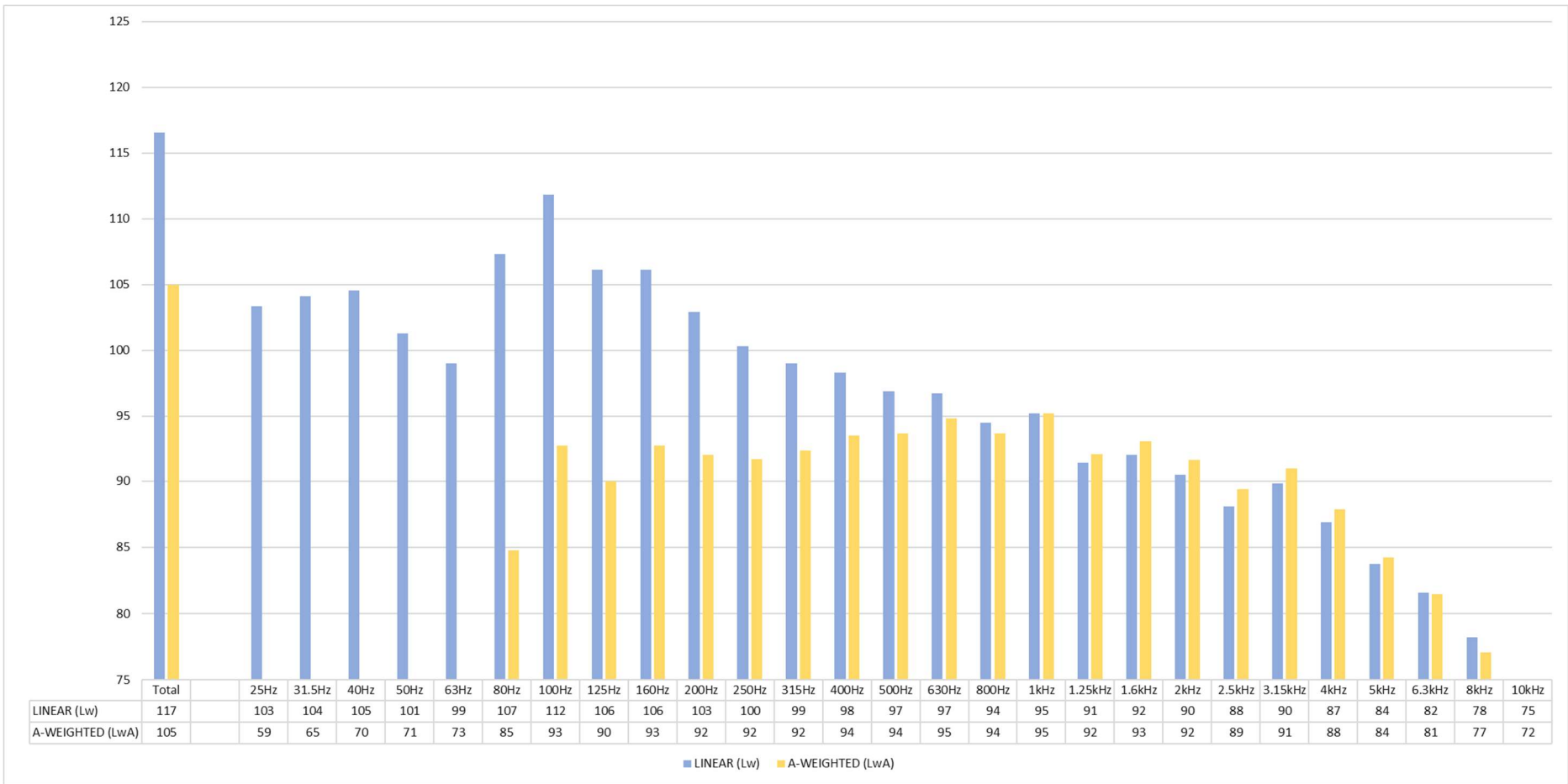


Figure 35: TD085 Stationary

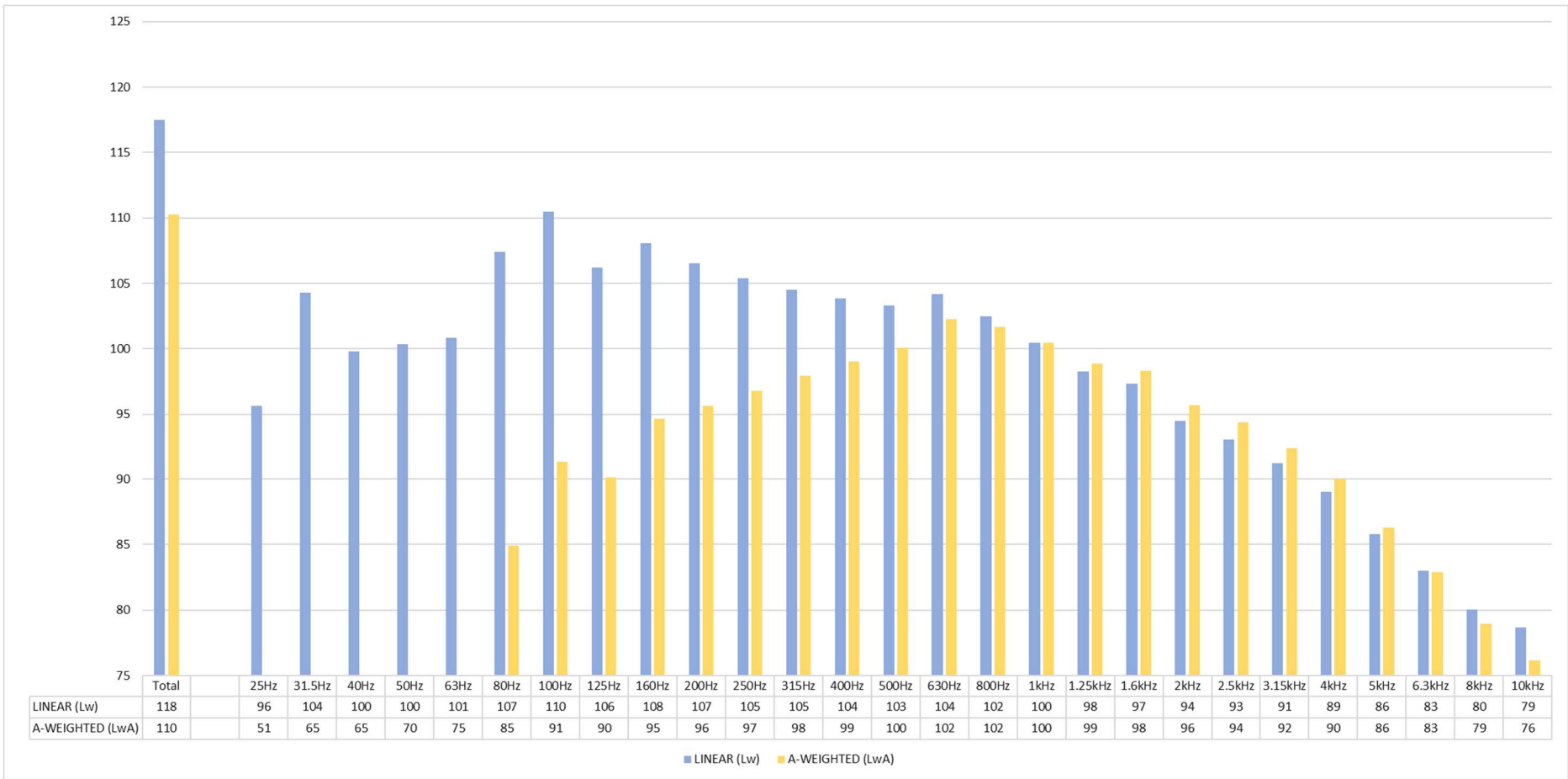


Figure 36: TD085 Dynamic Forwards

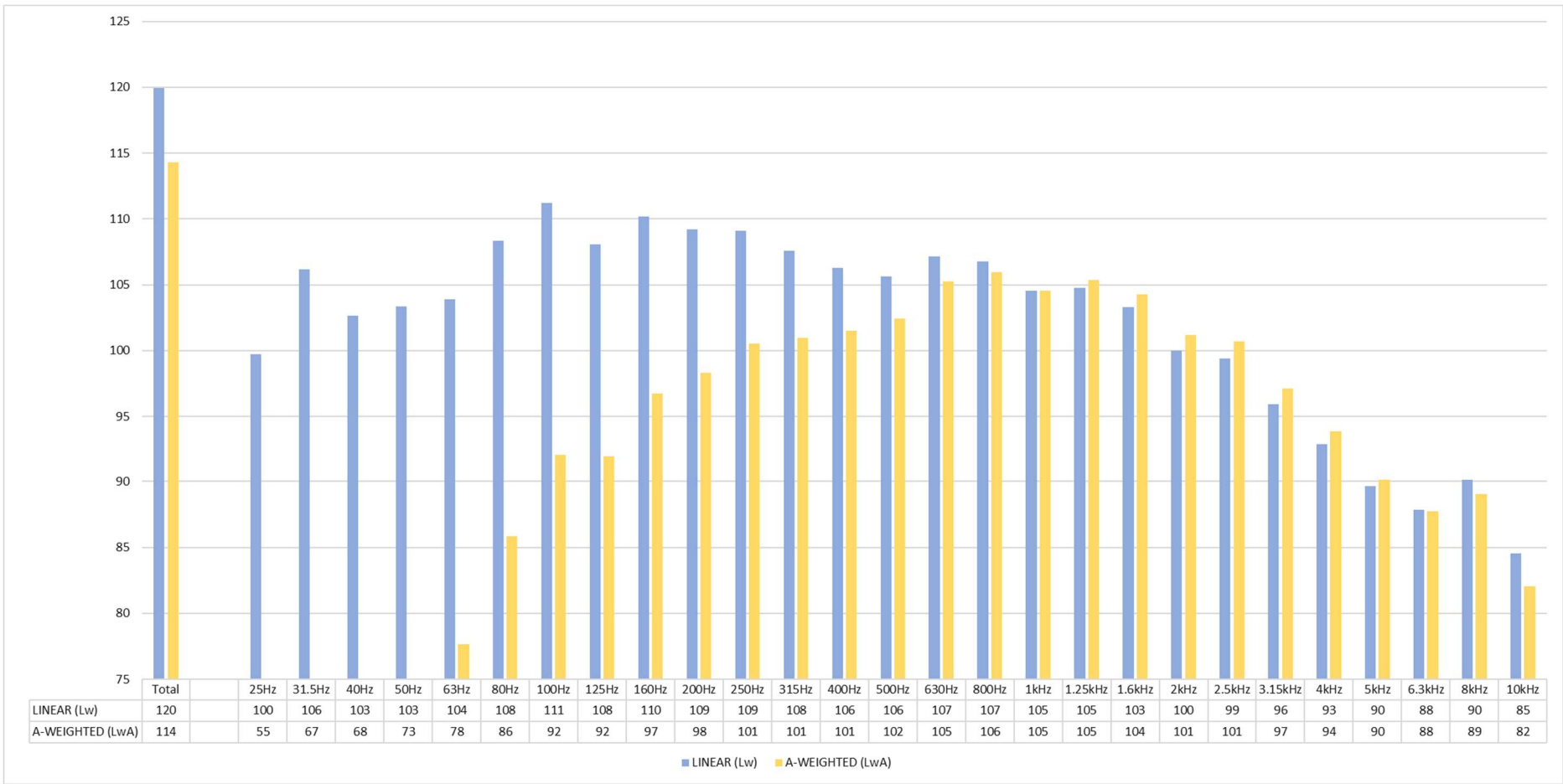


Figure 37: TD085 Dynamic Reverse

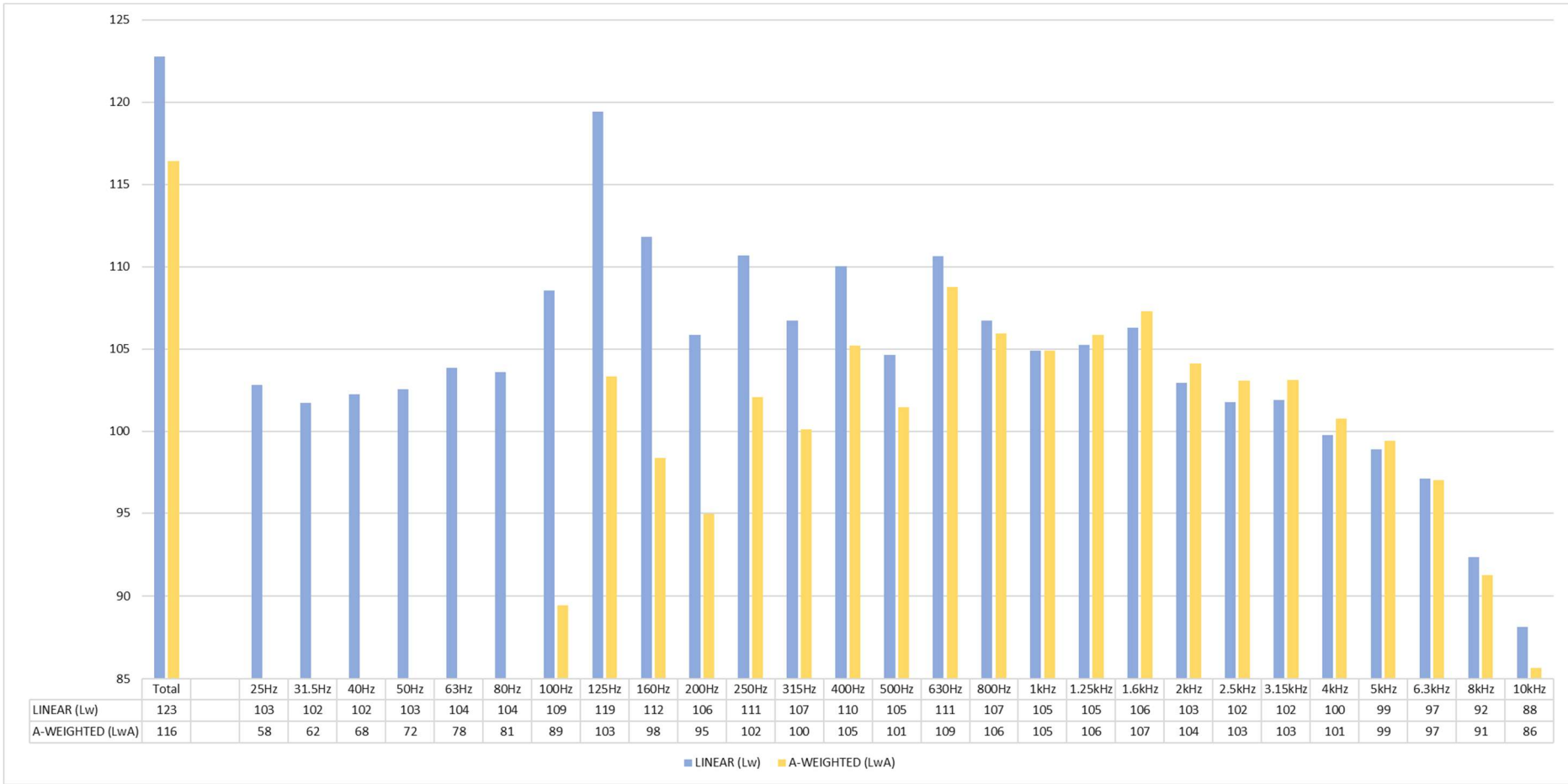


Figure 38: WC03I Stationary

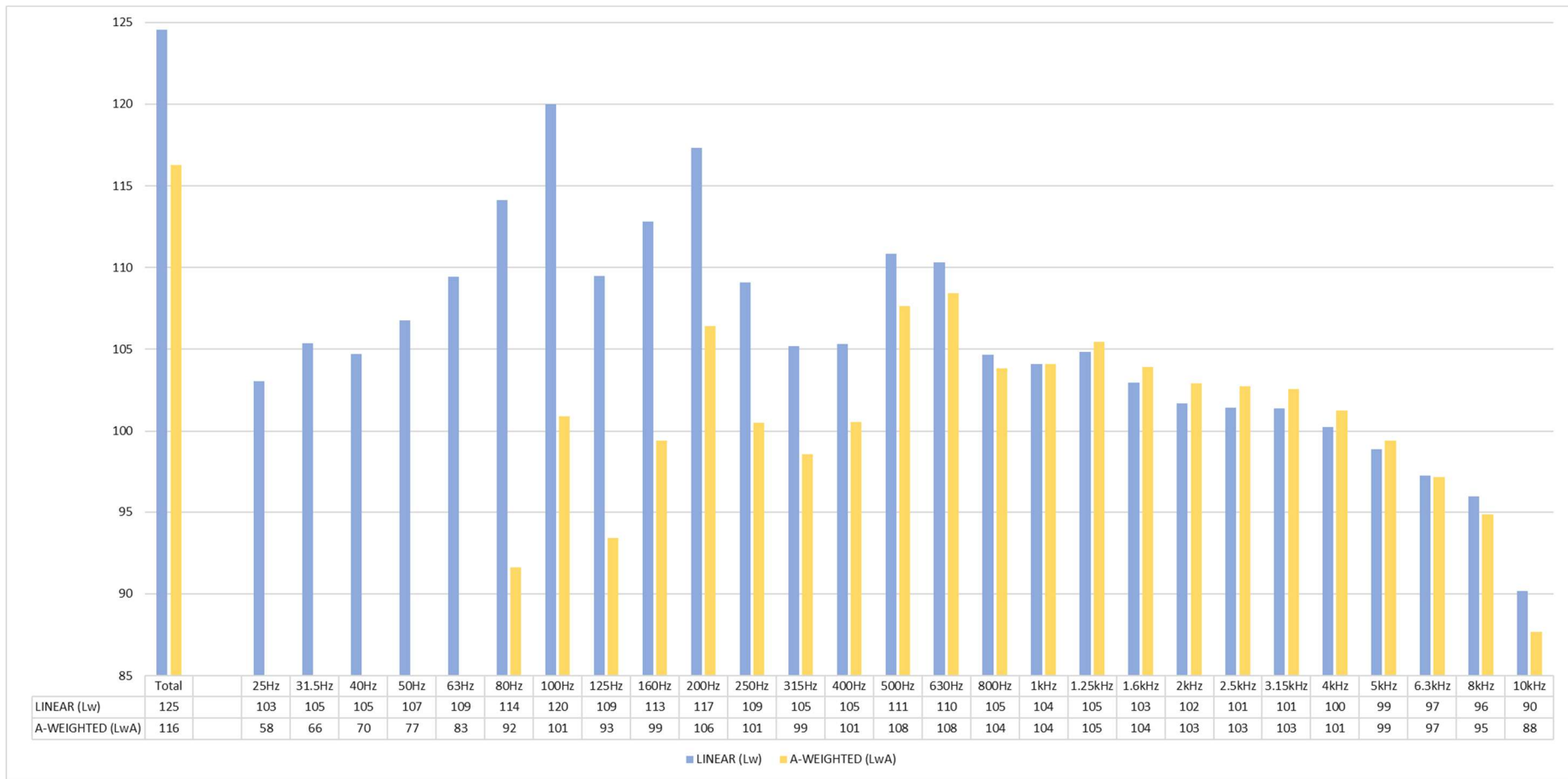


Figure 39: WC03I Dynamic Uphill

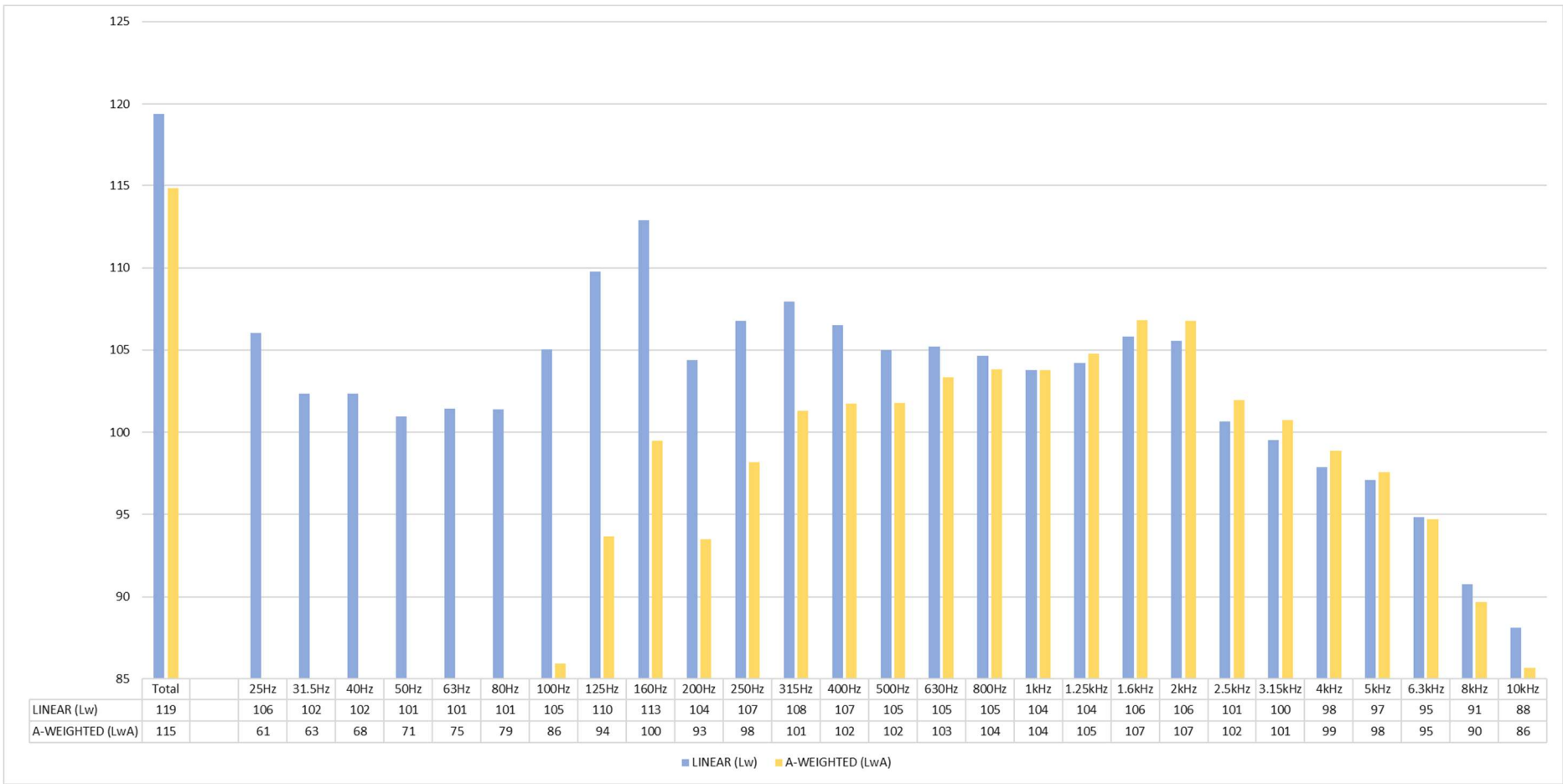


Figure 40: WC03I Dynamic Downhill

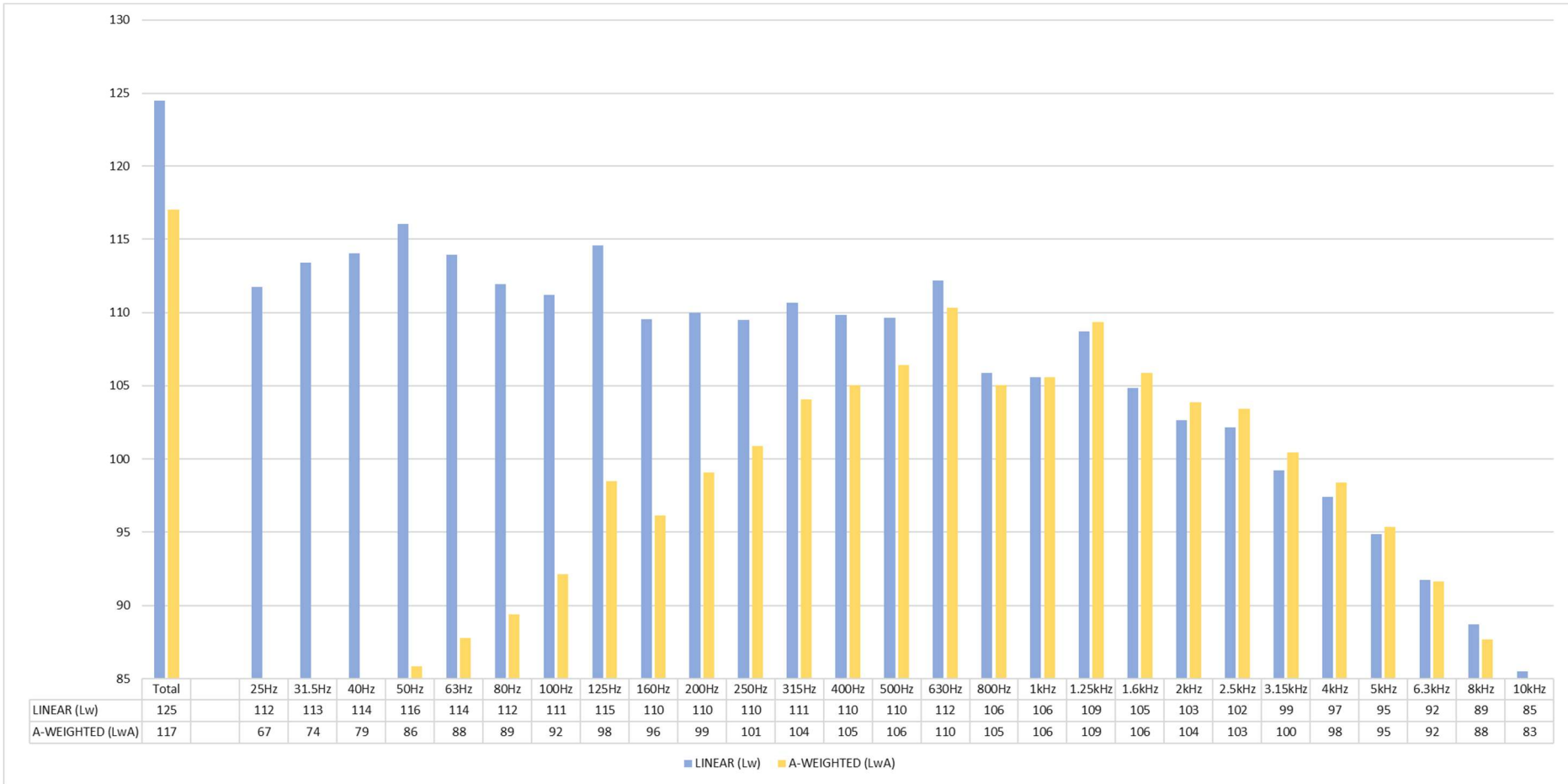


Figure 41: DT263 Stationary

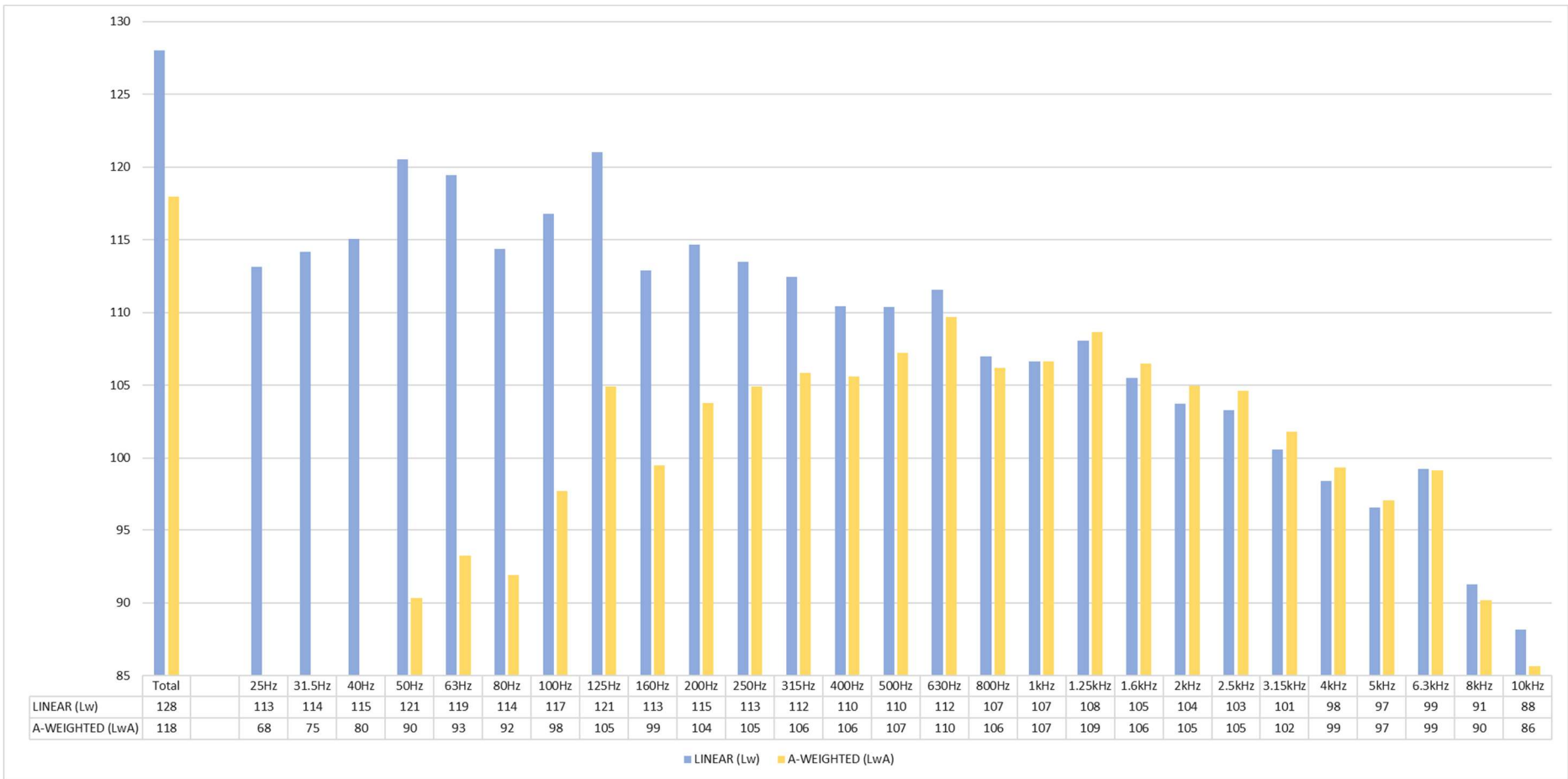


Figure 42: DT263 Dynamic Uphill

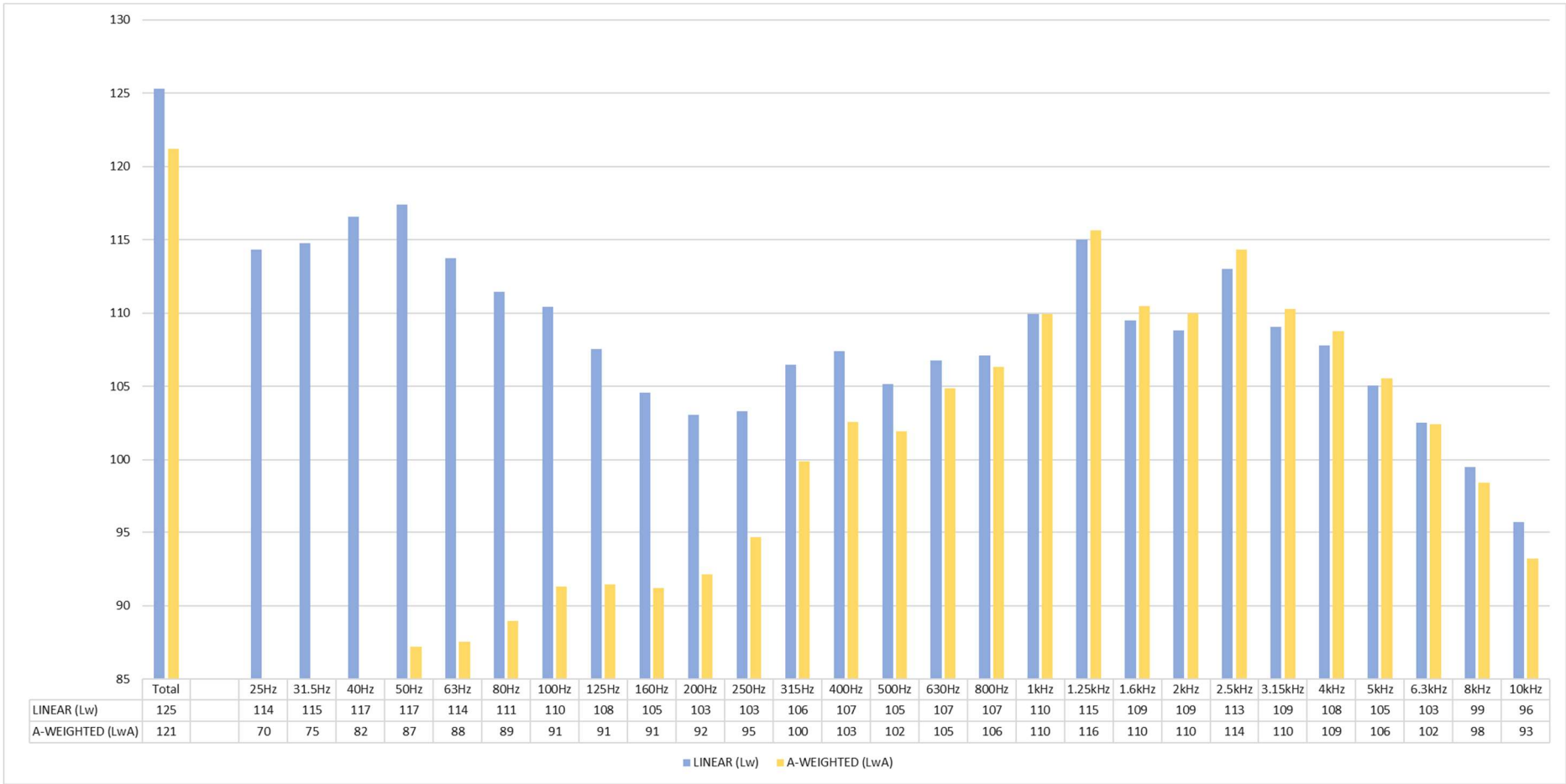


Figure 43: DT263 Dynamic Downhill

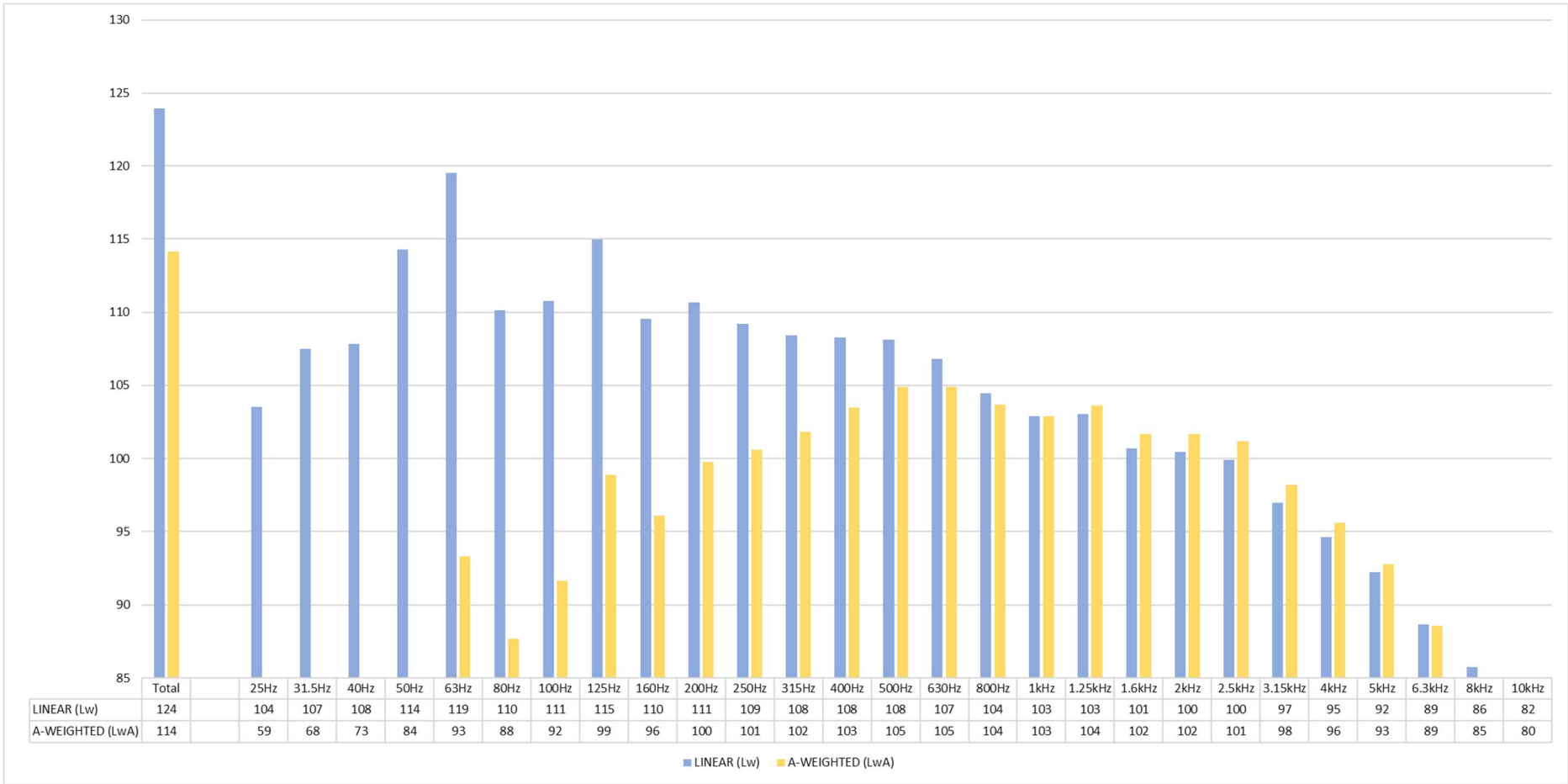


Figure 44: DT264 Stationary

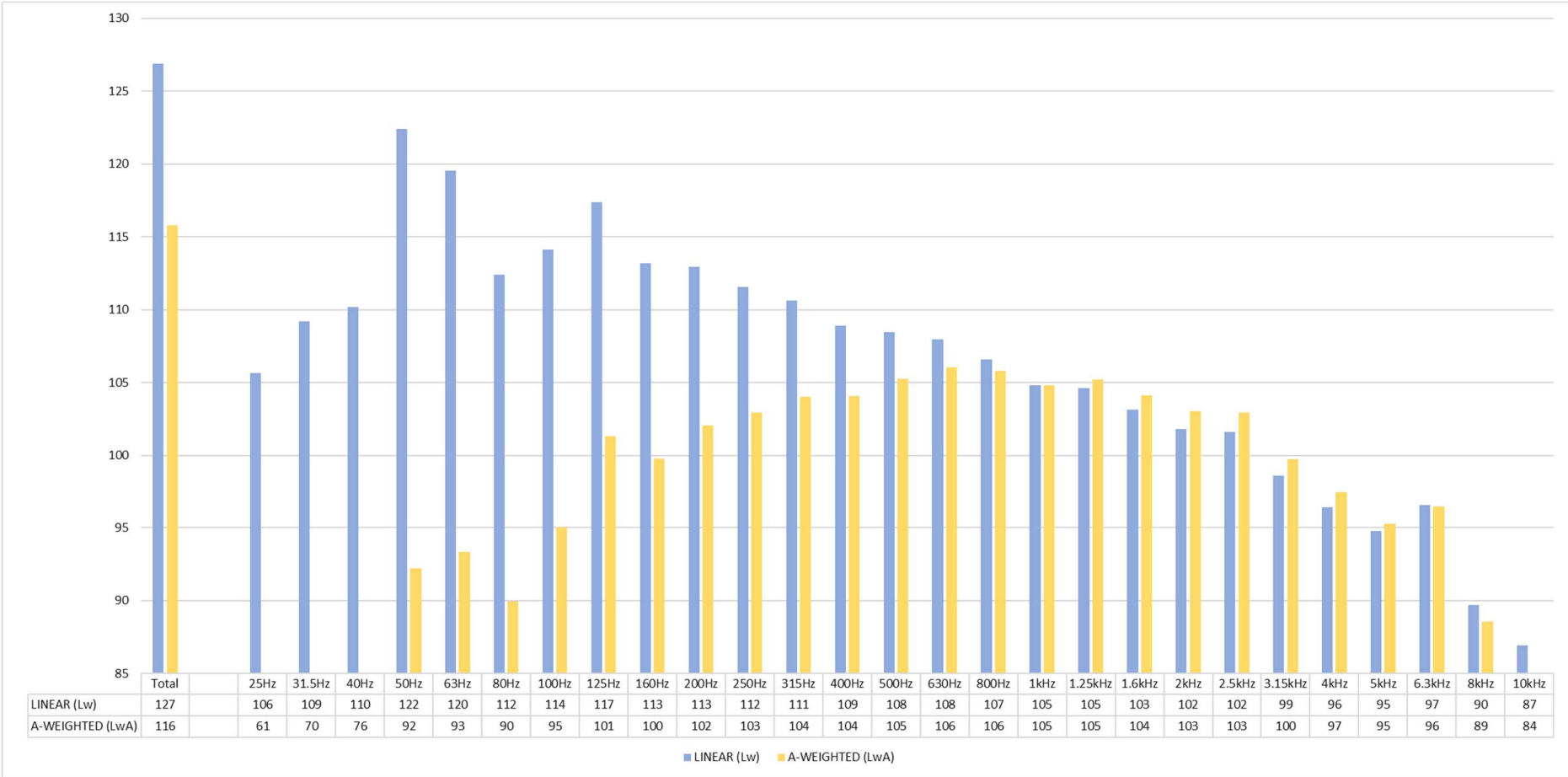


Figure 45: DT264 Dynamic Uphill

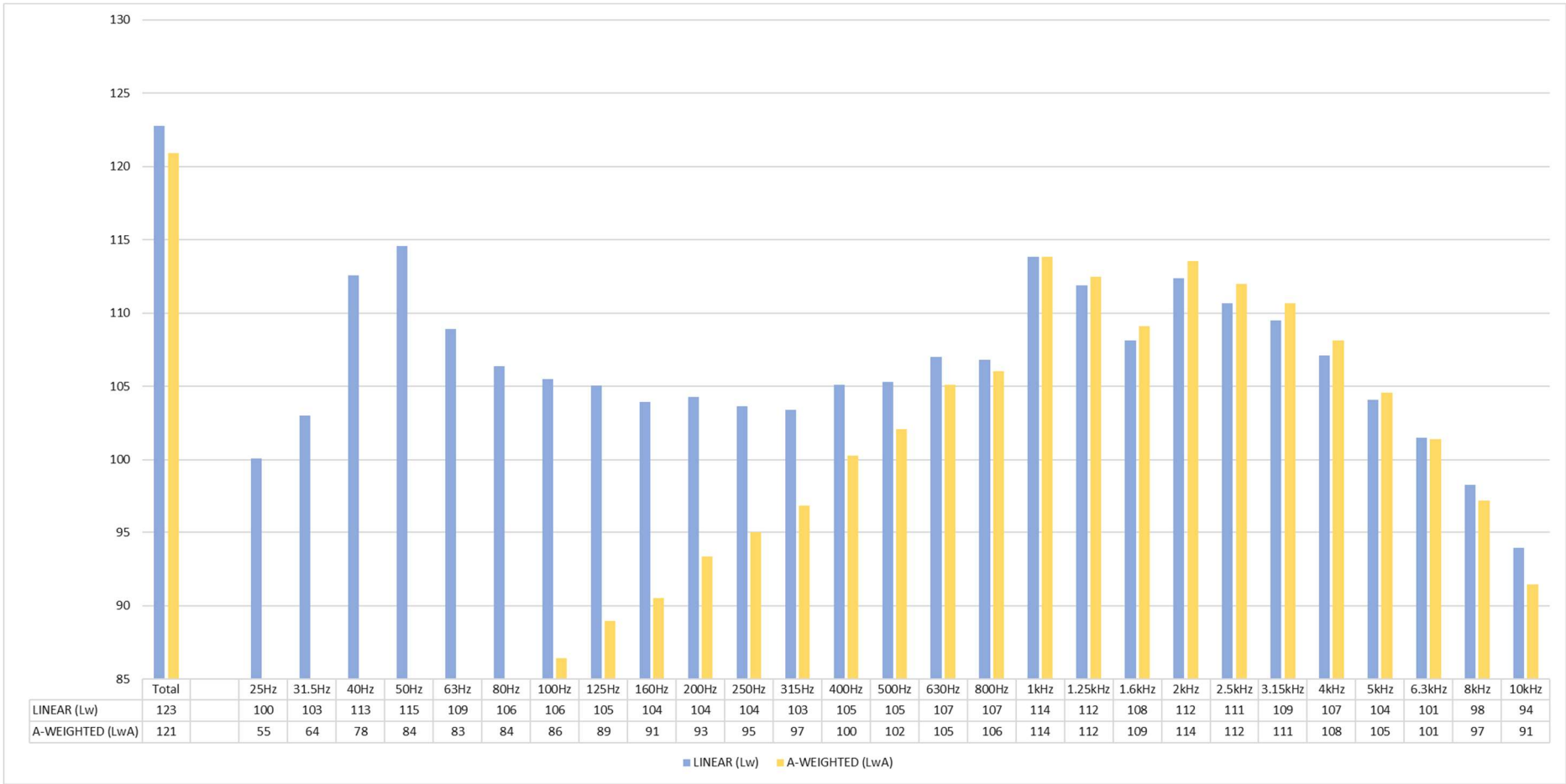


Figure 46: DT264 Dynamic Downhill

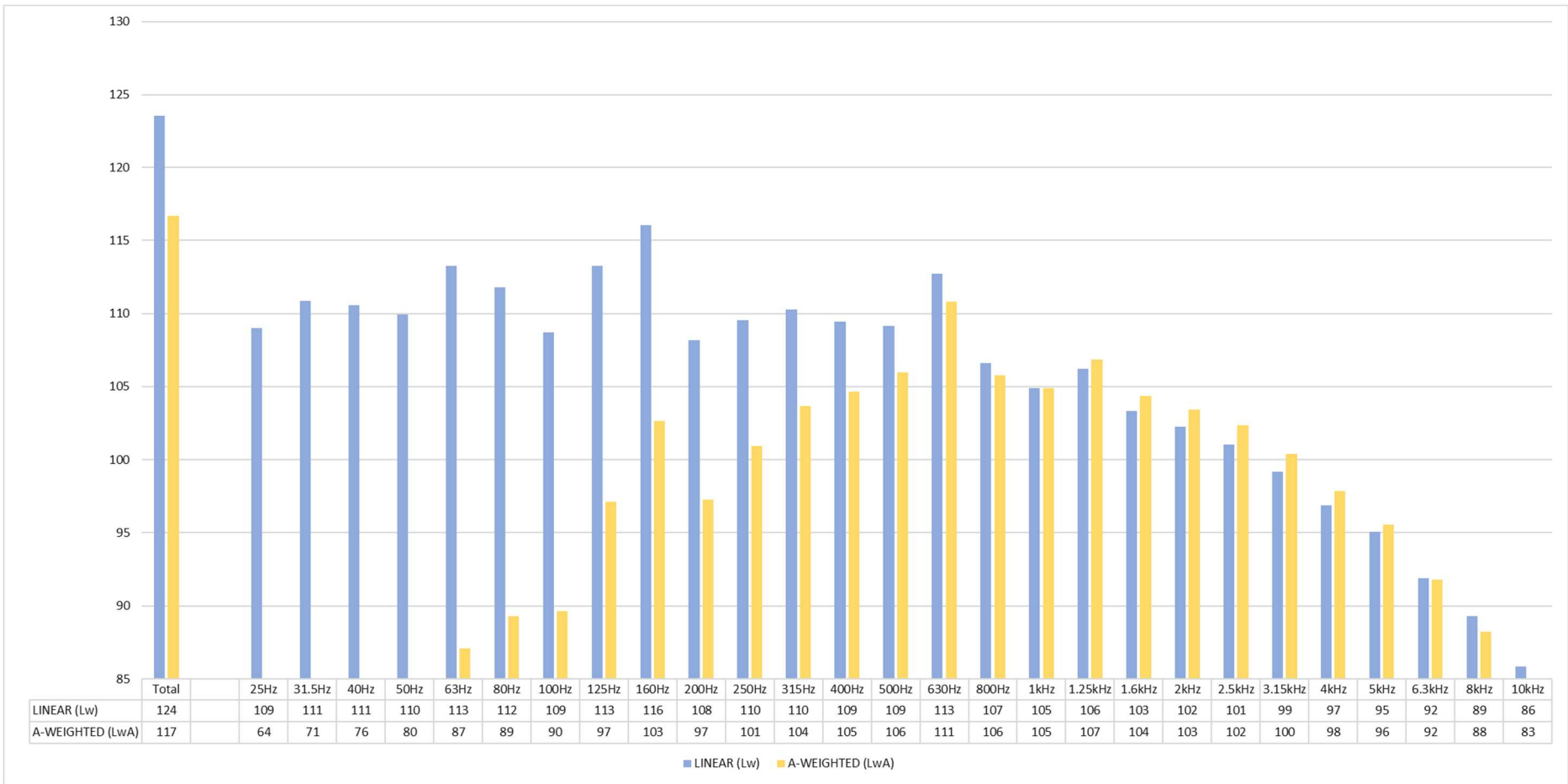


Figure 47: DT265 Stationary

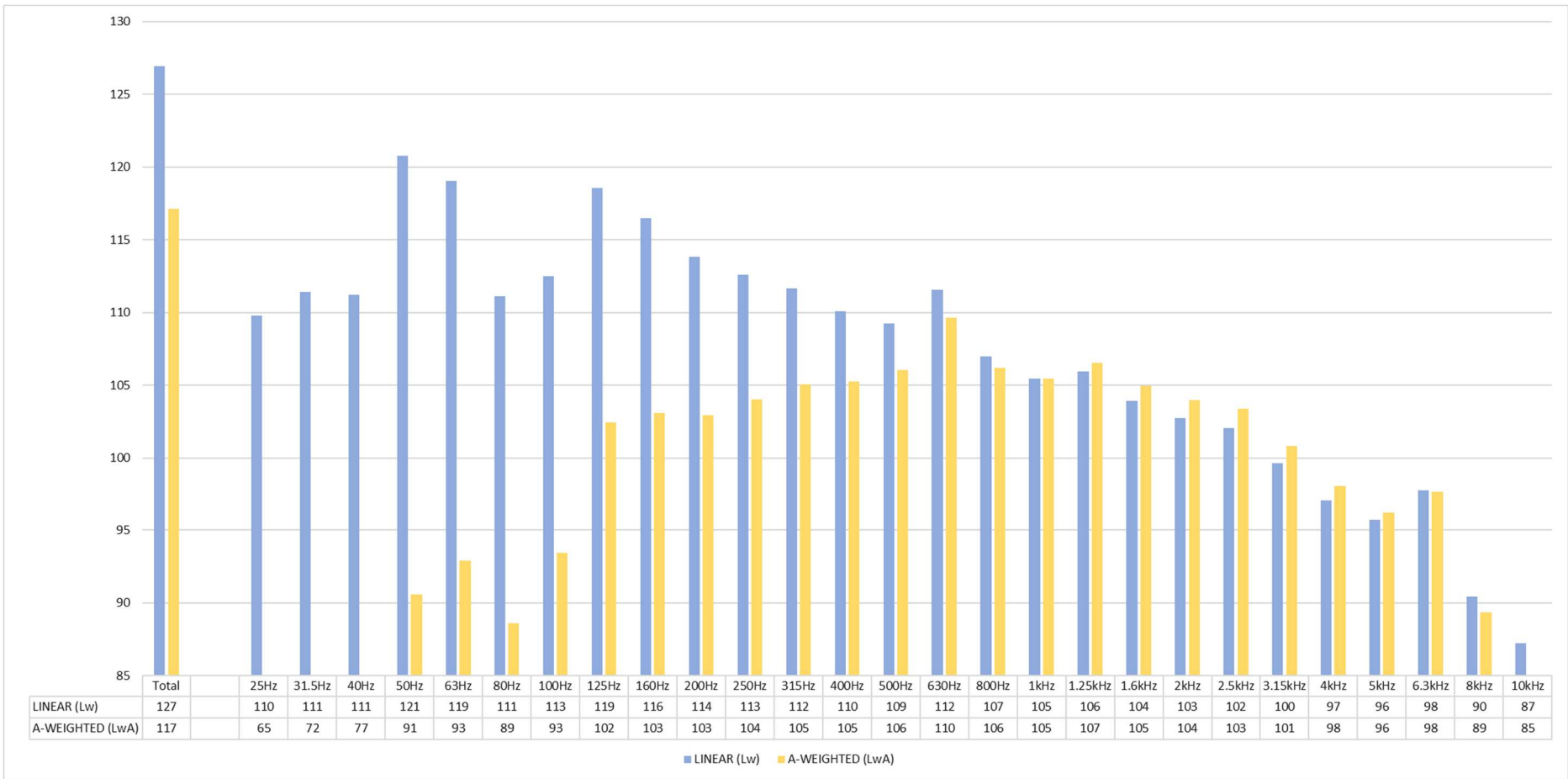


Figure 48: DT265 Dynamic Uphill

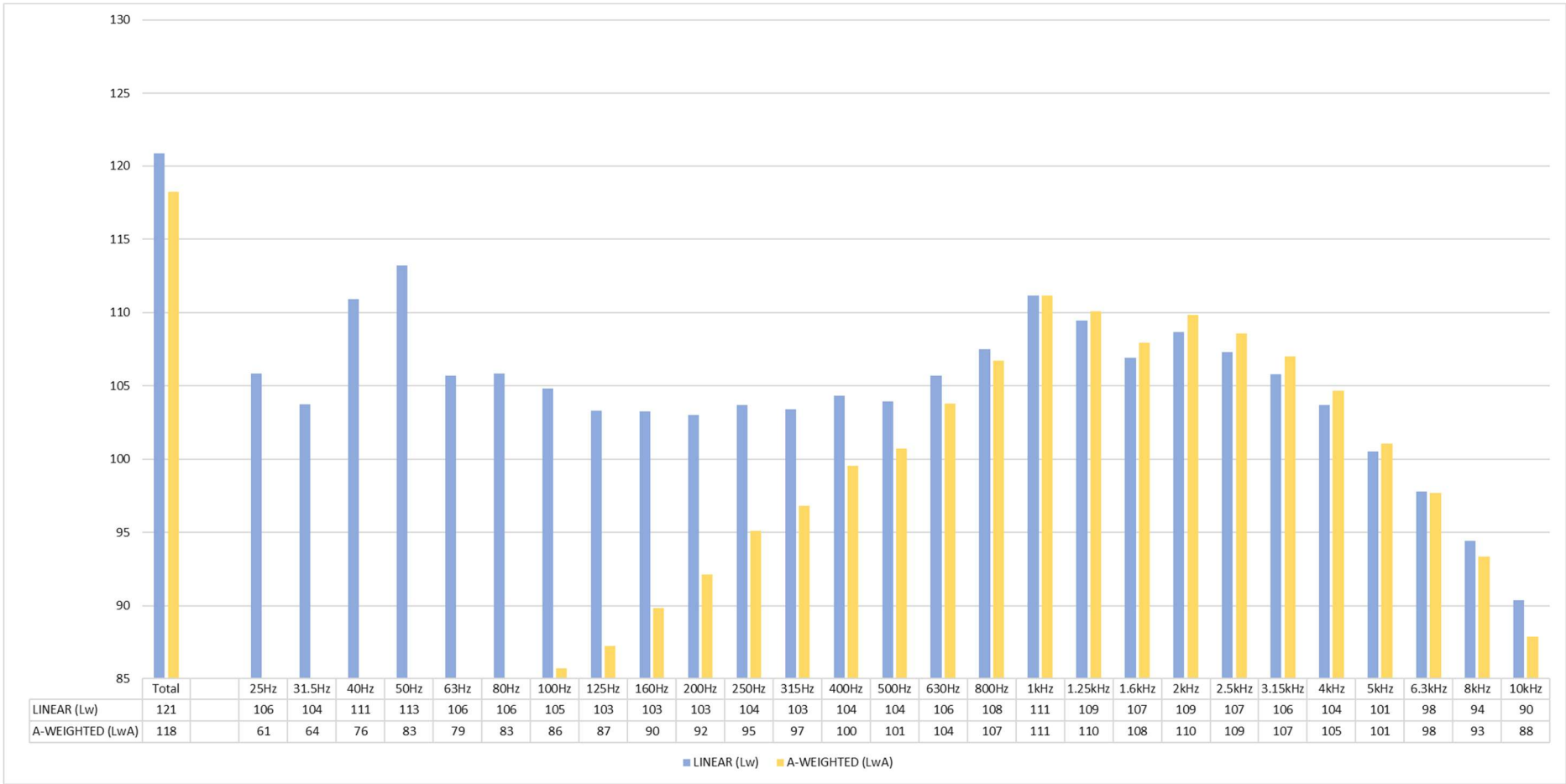


Figure 49: DT265 Dynamic Downhill

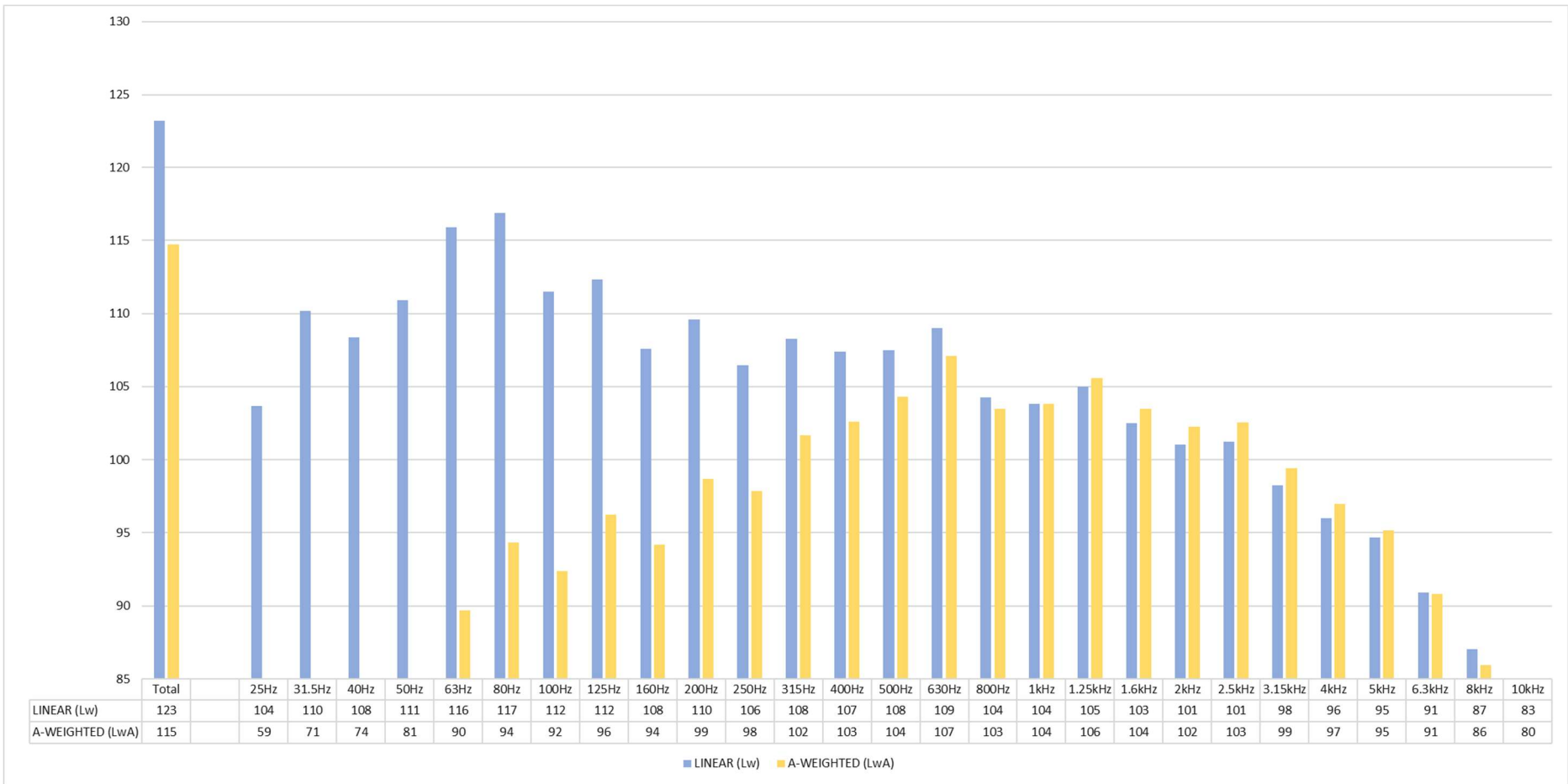


Figure 50: DT266 Stationary

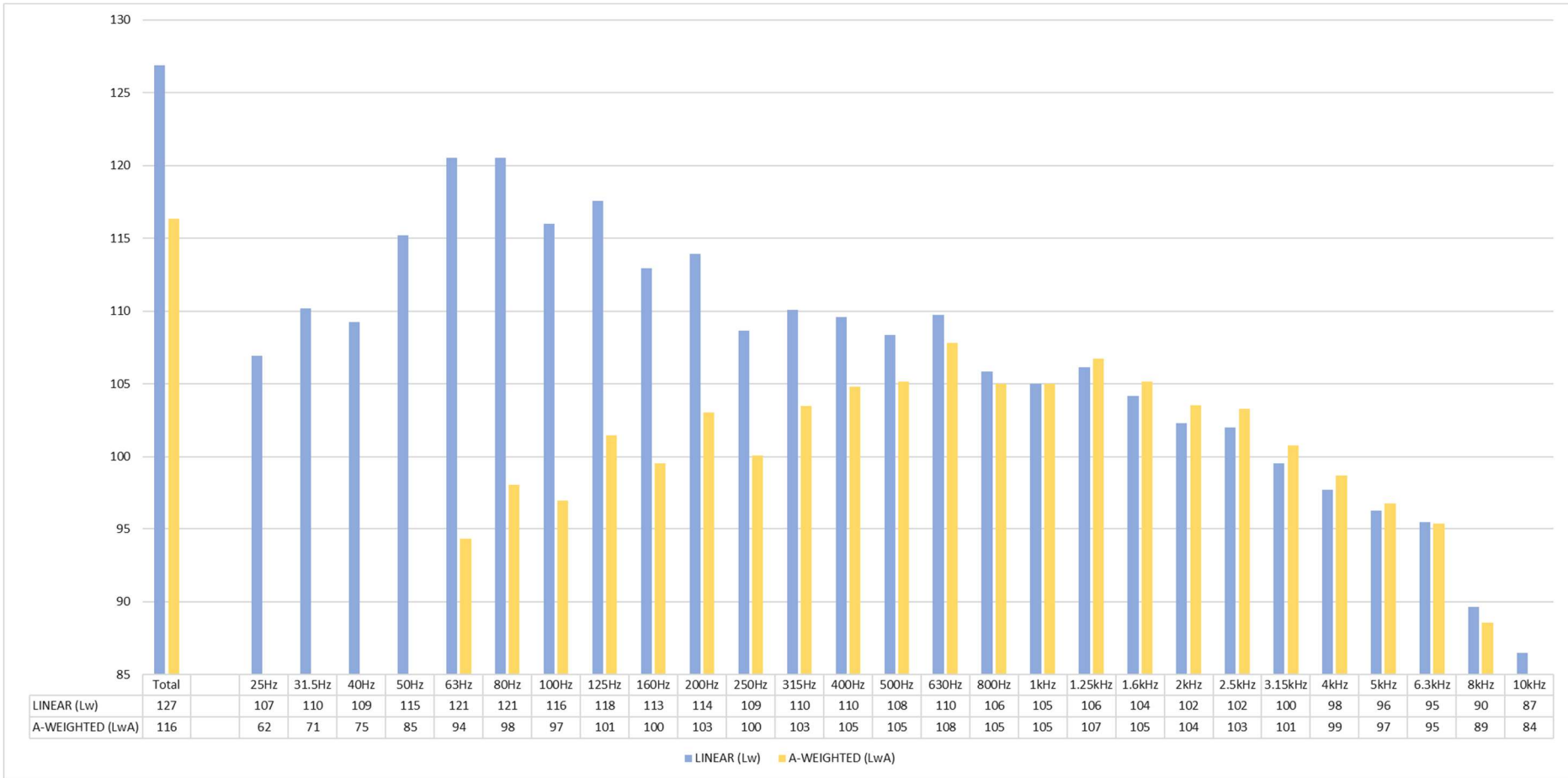


Figure 51: DT266 Dynamic Uphill

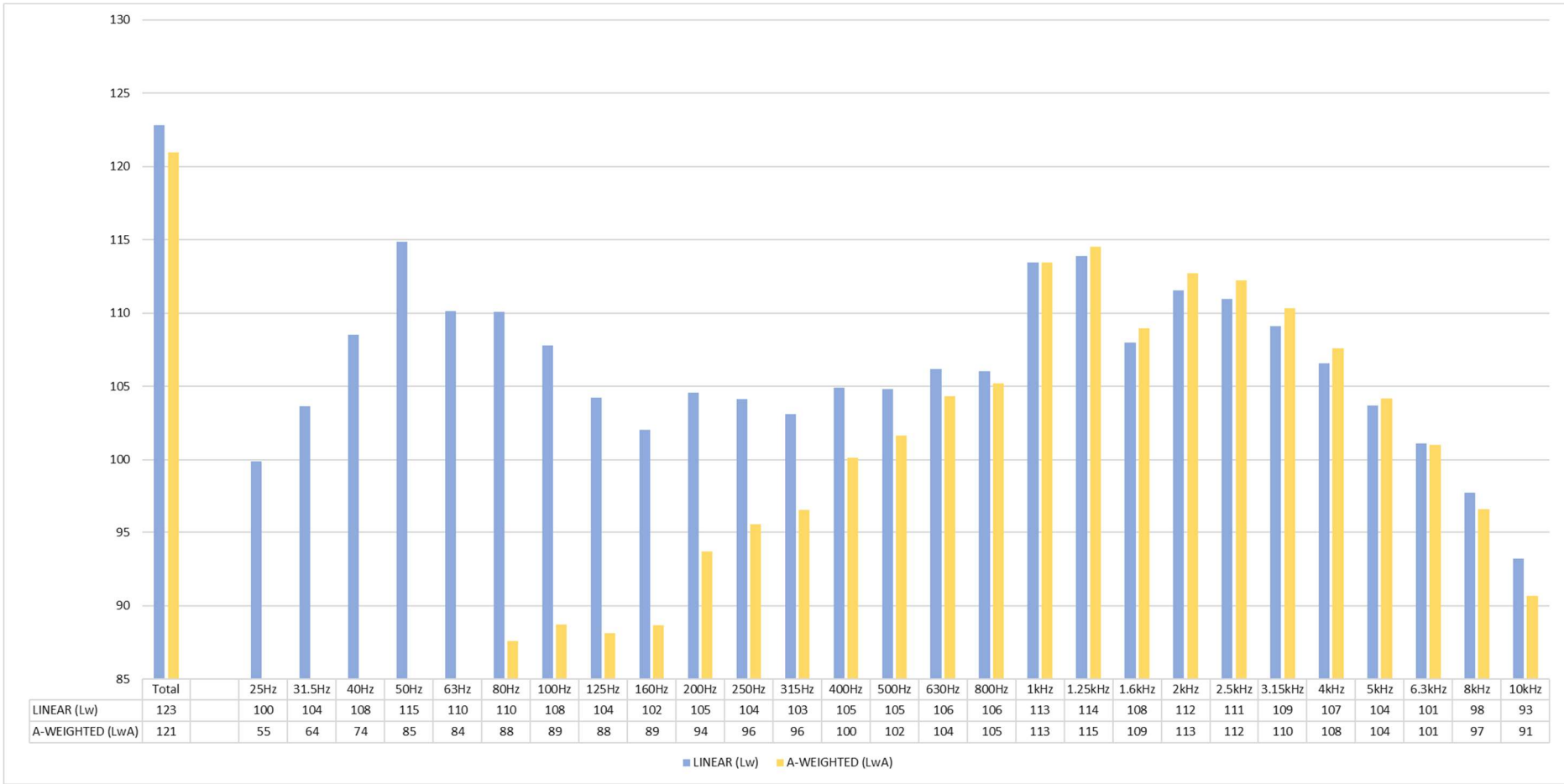


Figure 52: DT266 Dynamic Downhill

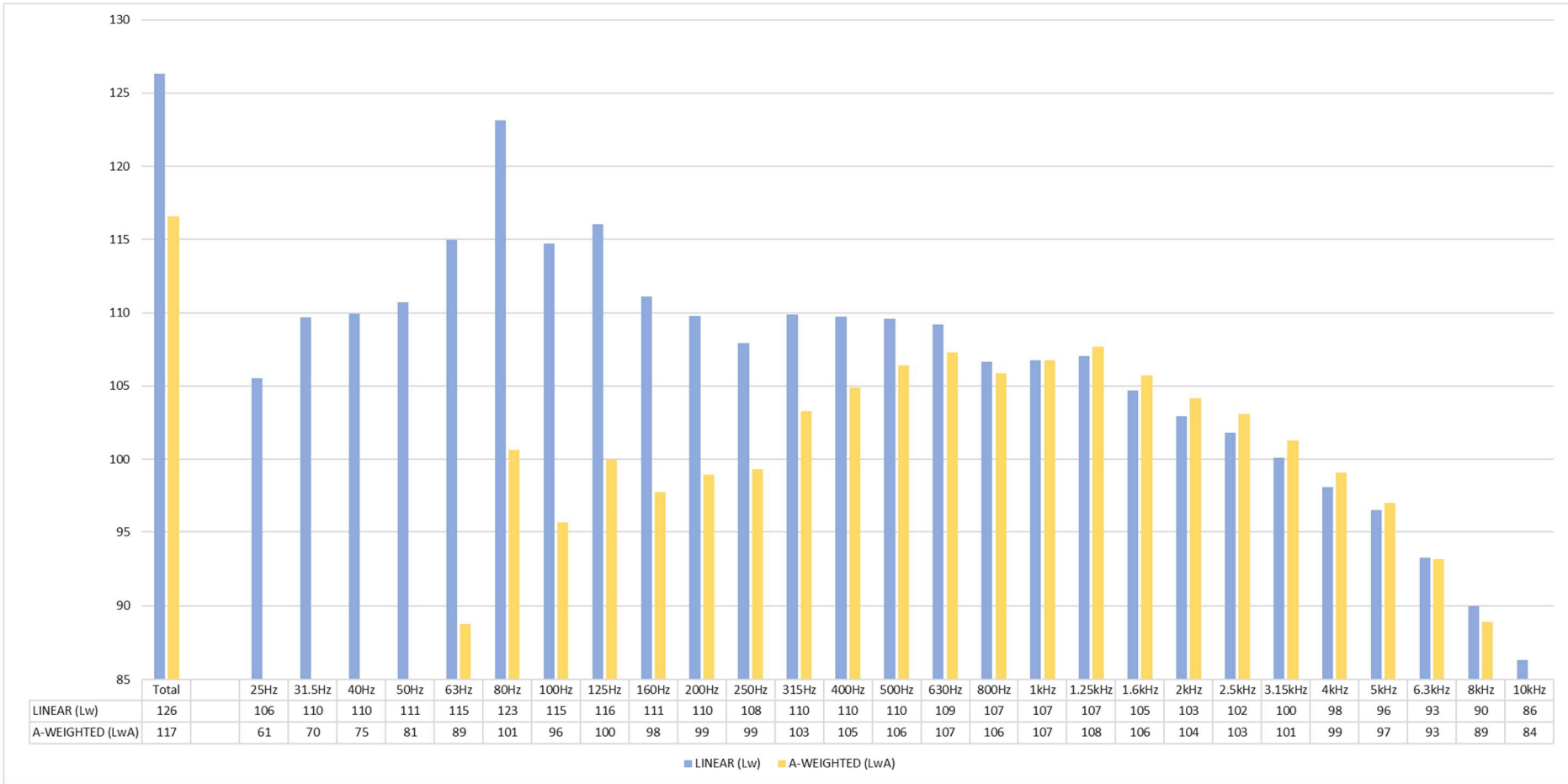


Figure 53: DT267 Stationary

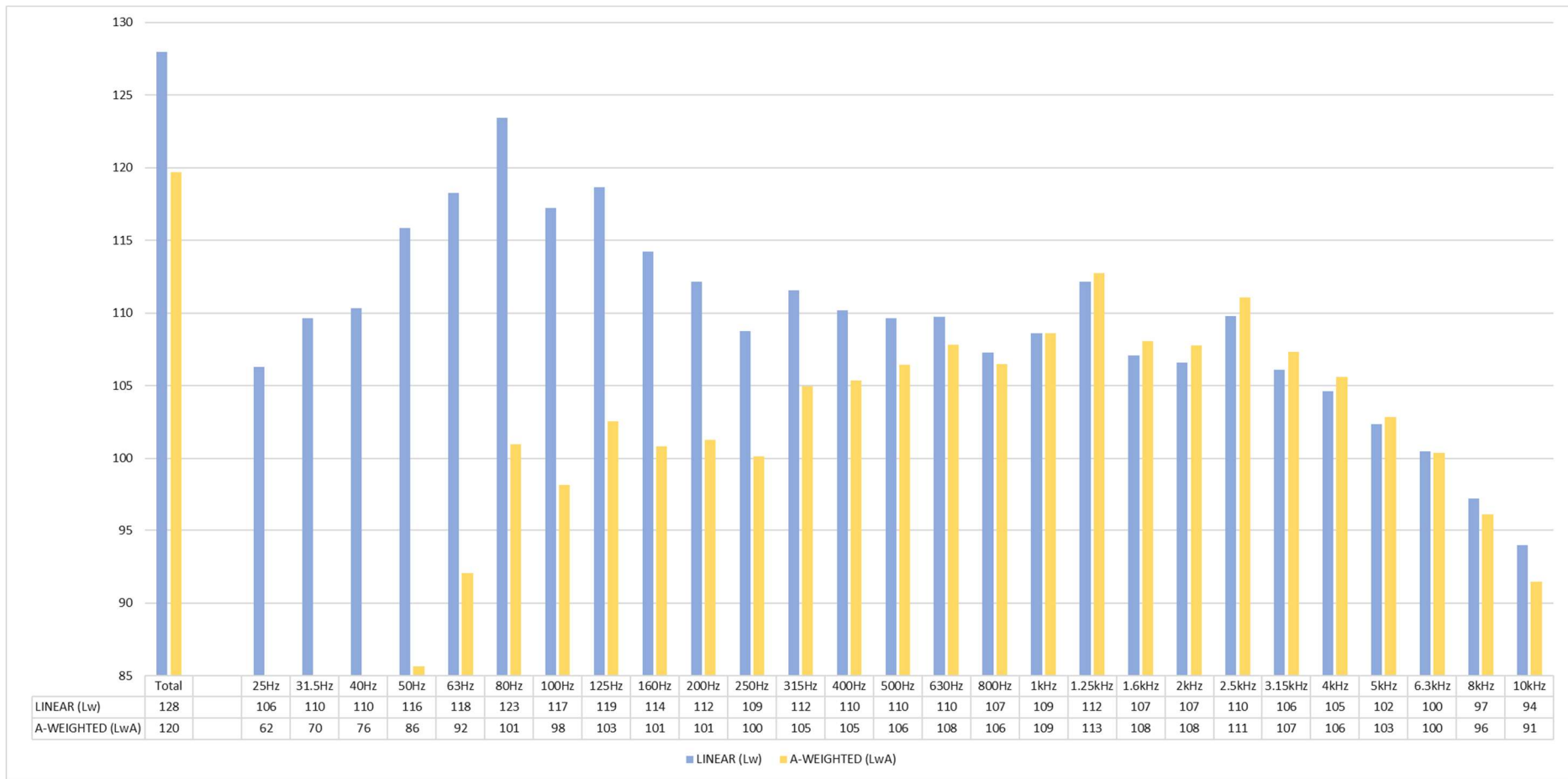


Figure 54: DT267 Dynamic Uphill

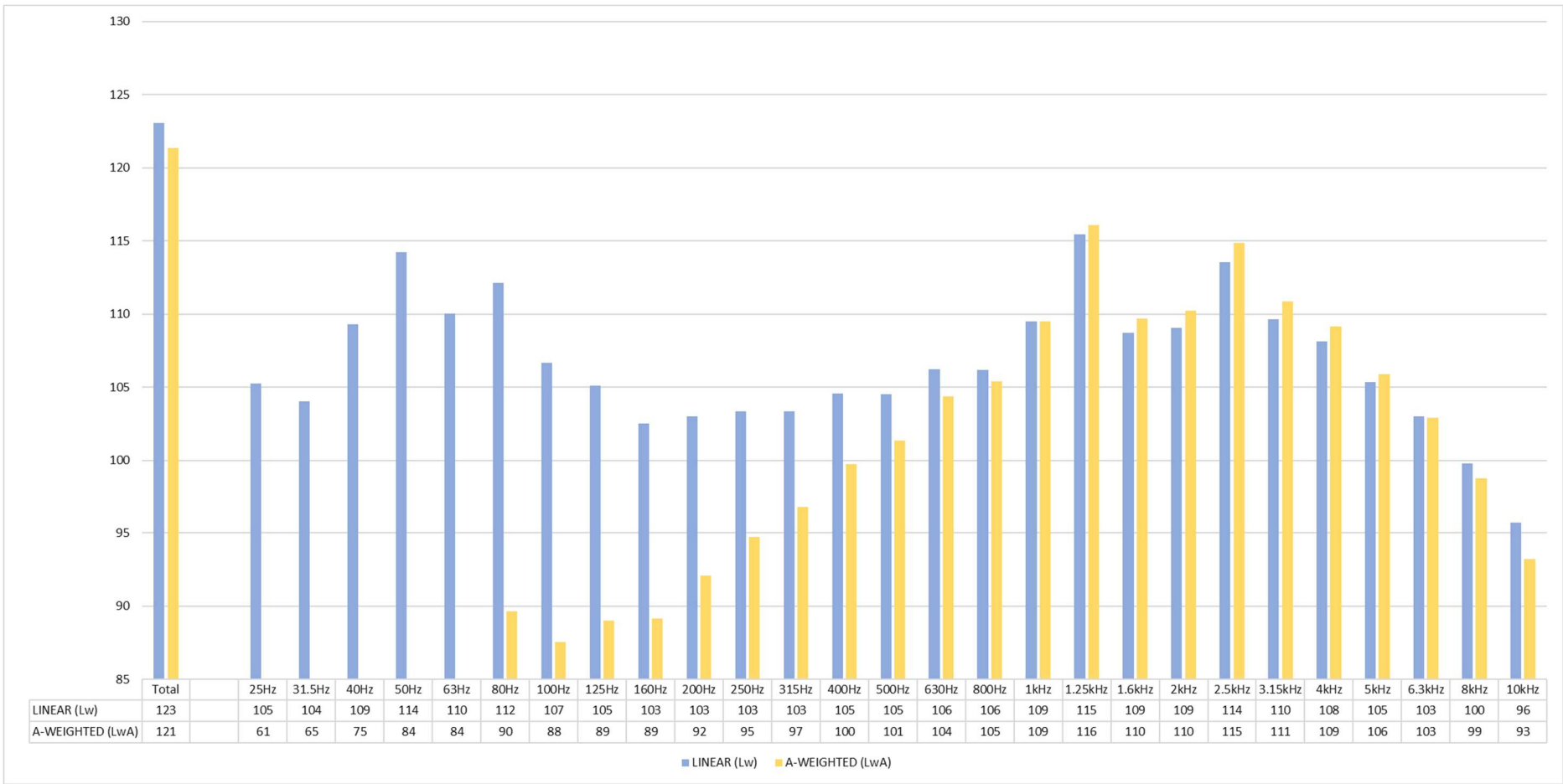


Figure 55: DT267 Dynamic Downhill

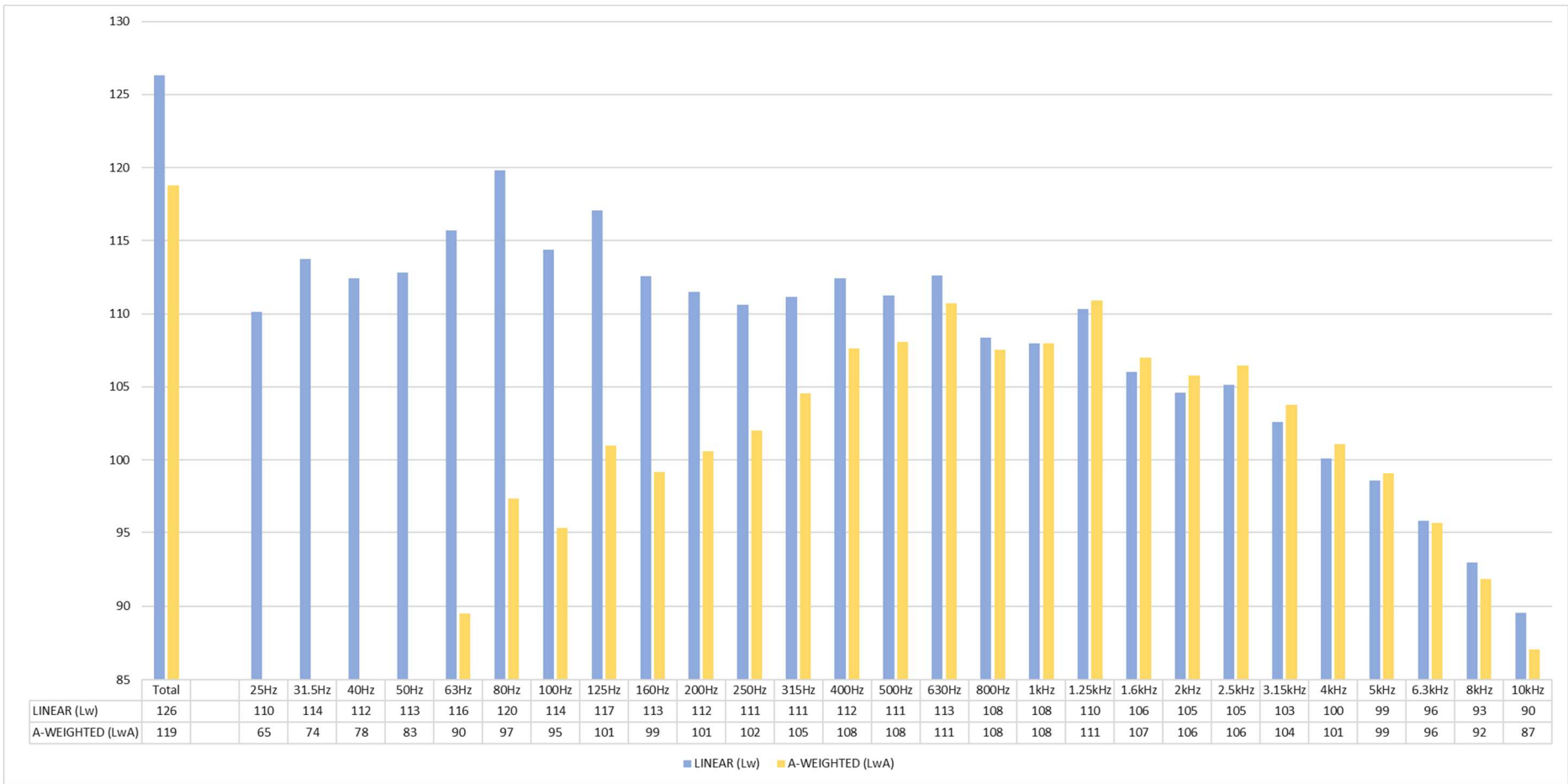


Figure 56: DT29I Stationary

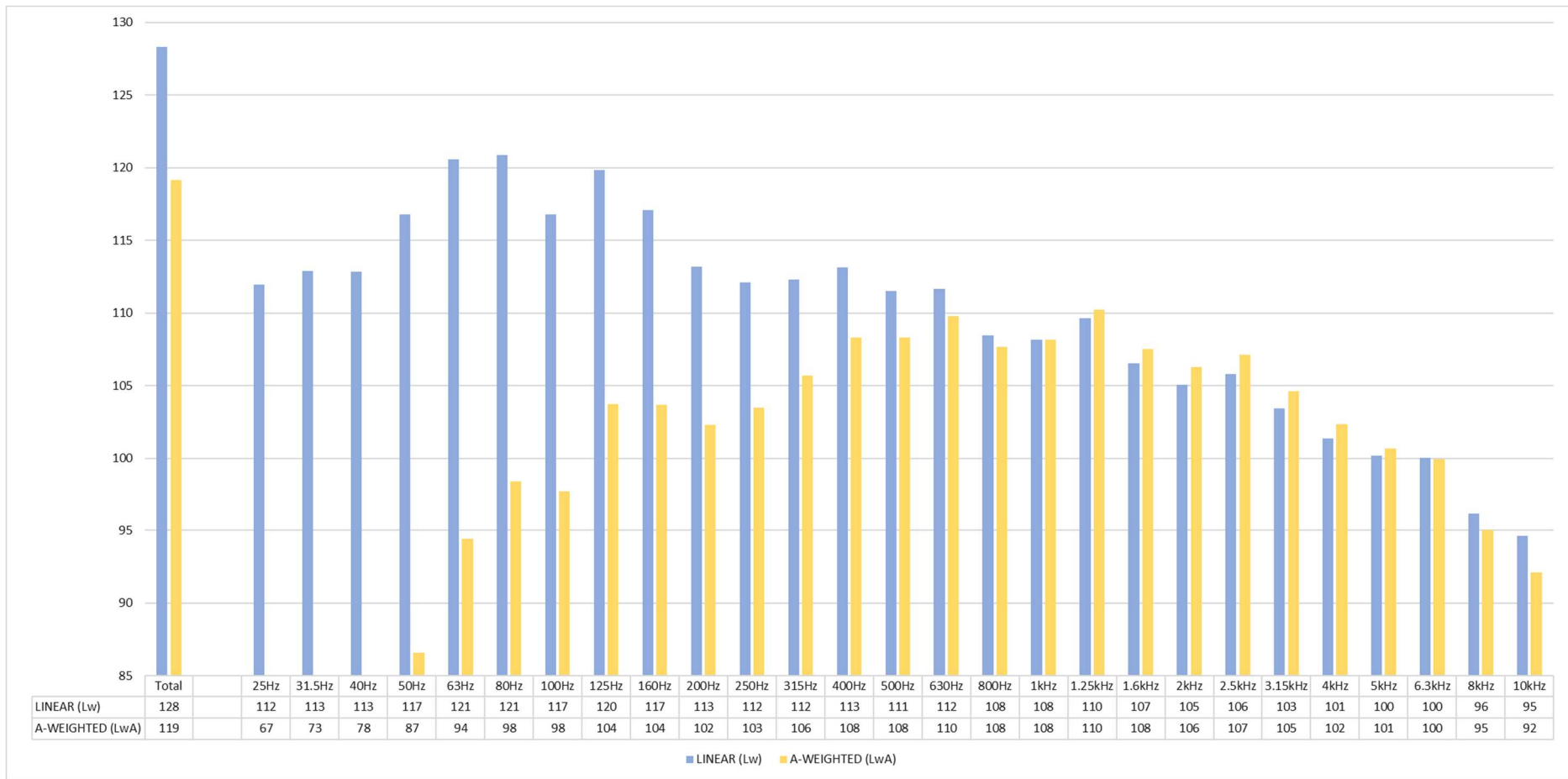


Figure 57: DT29I Dynamic Uphill

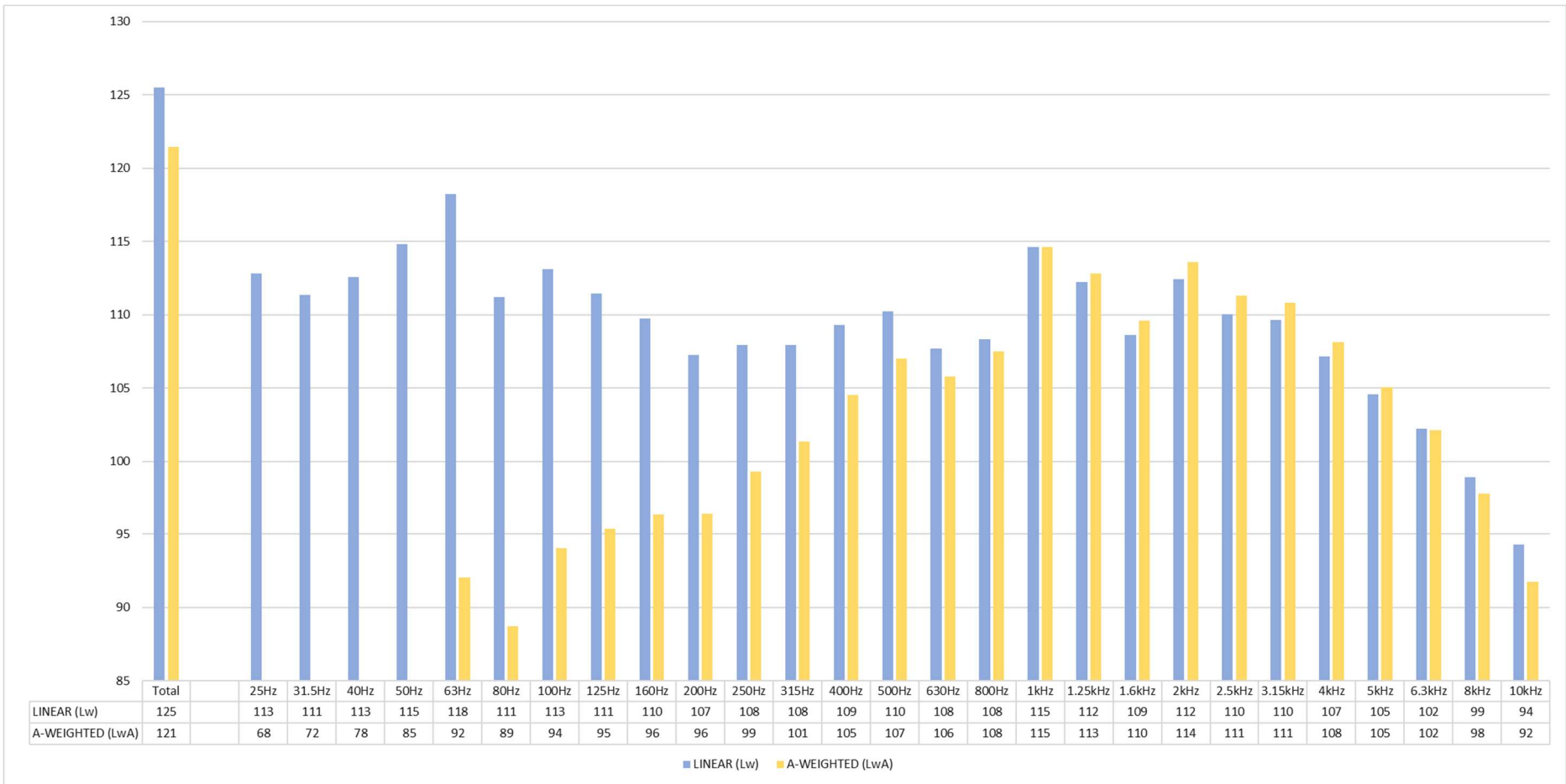


Figure 58: DT291 Dynamic Downhill

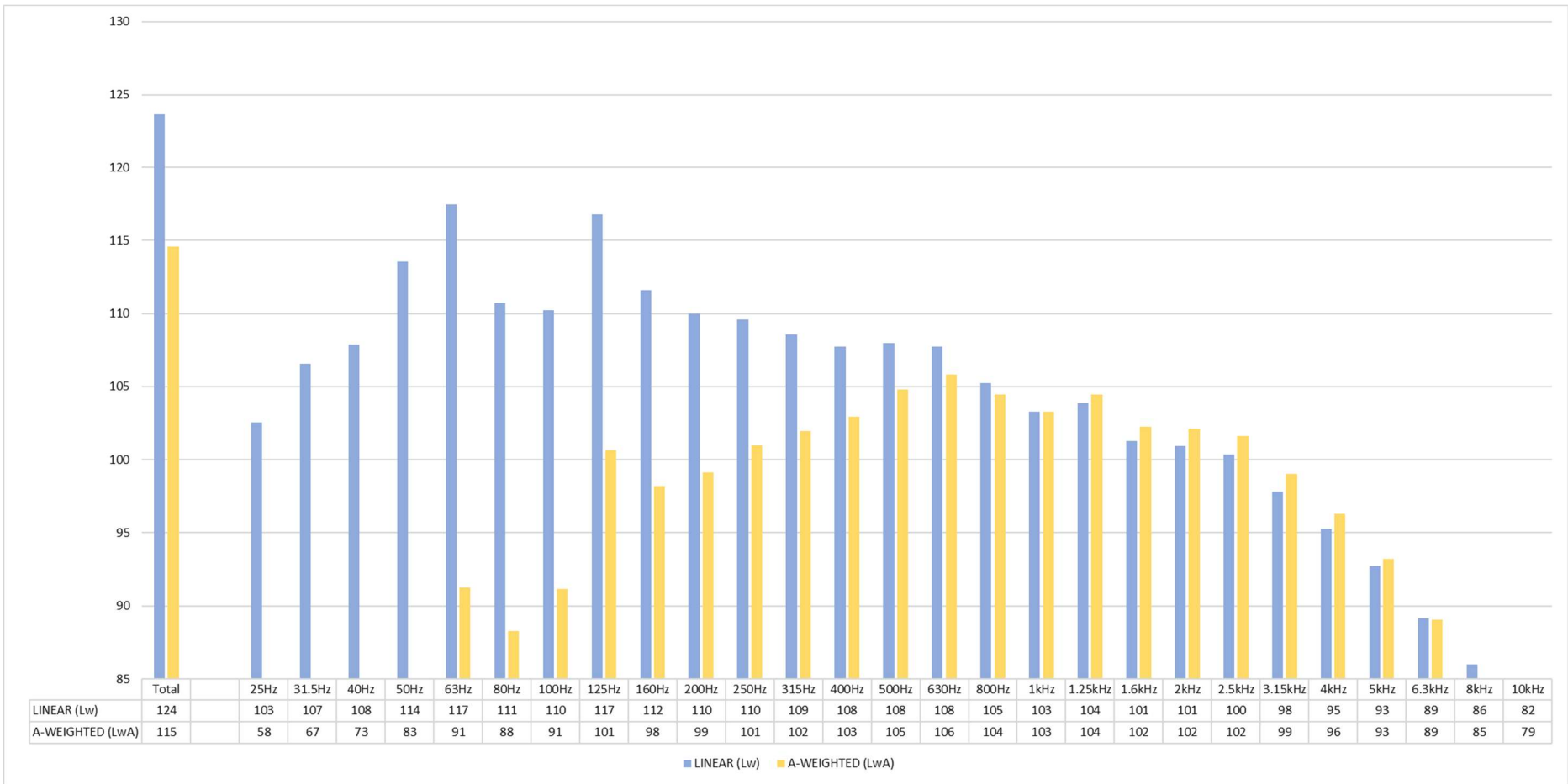


Figure 59: DT292 Stationary

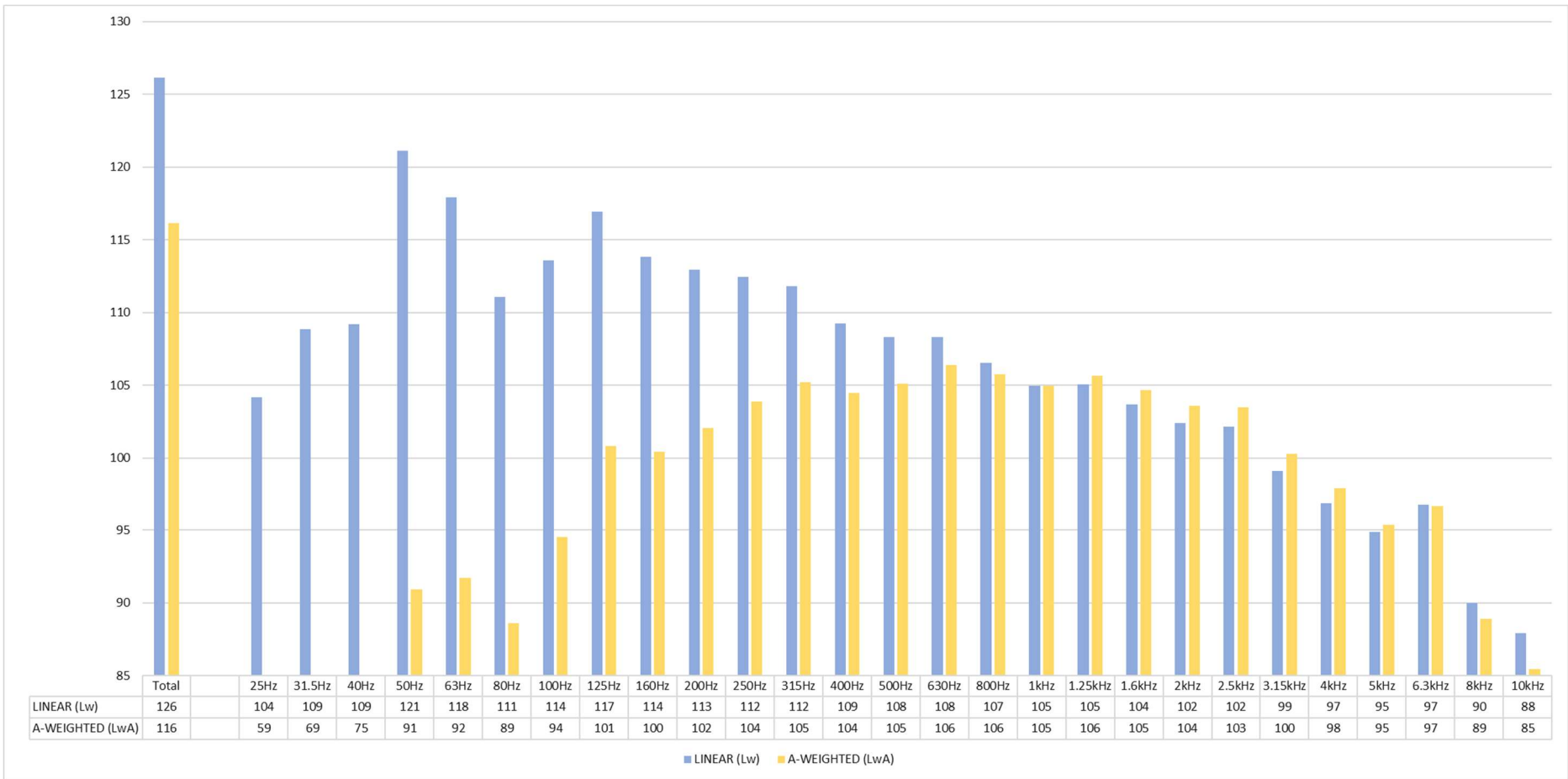


Figure 60: DT292 Dynamic Uphill

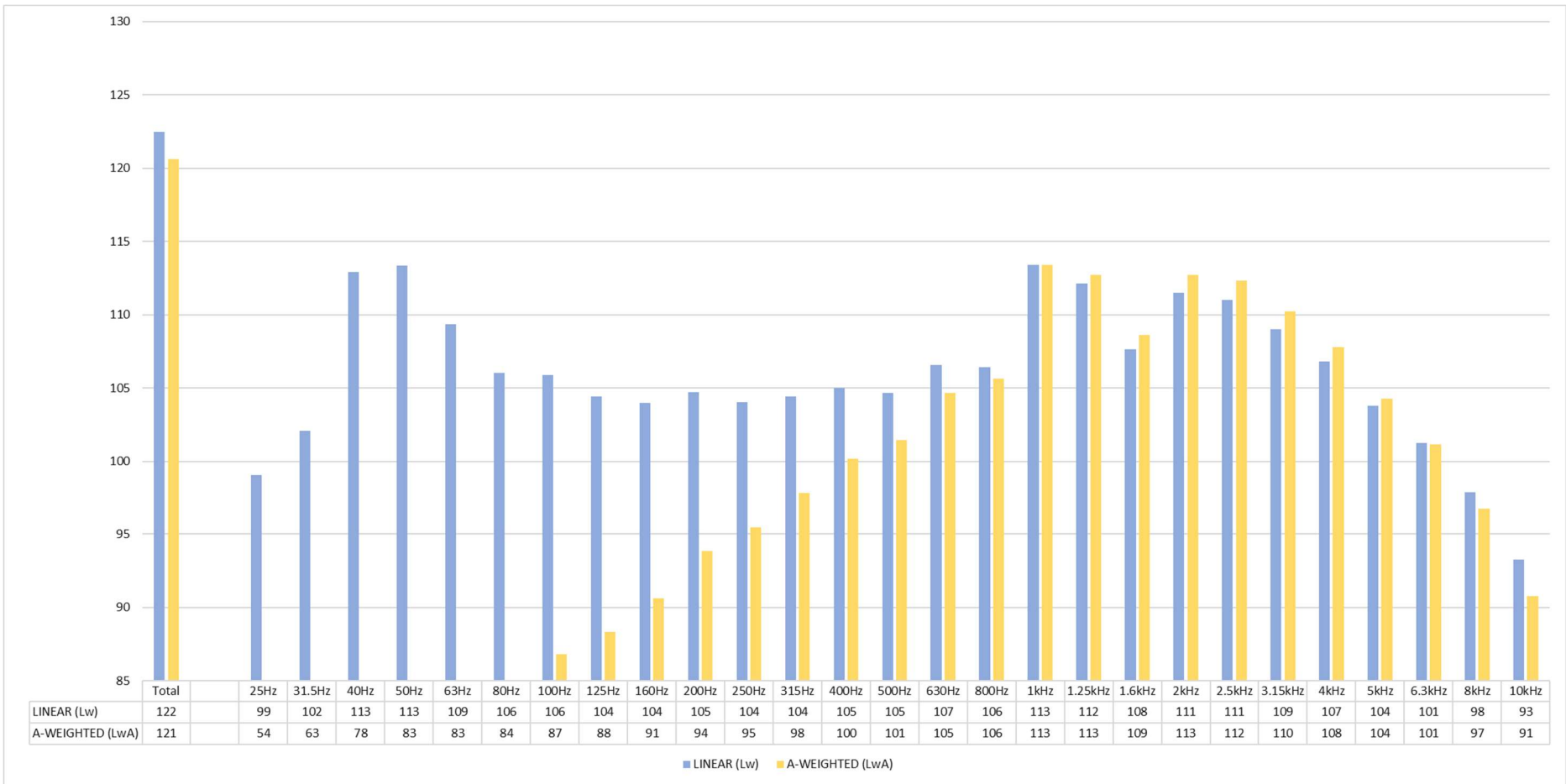


Figure 6I: DT292 Dynamic Downhill

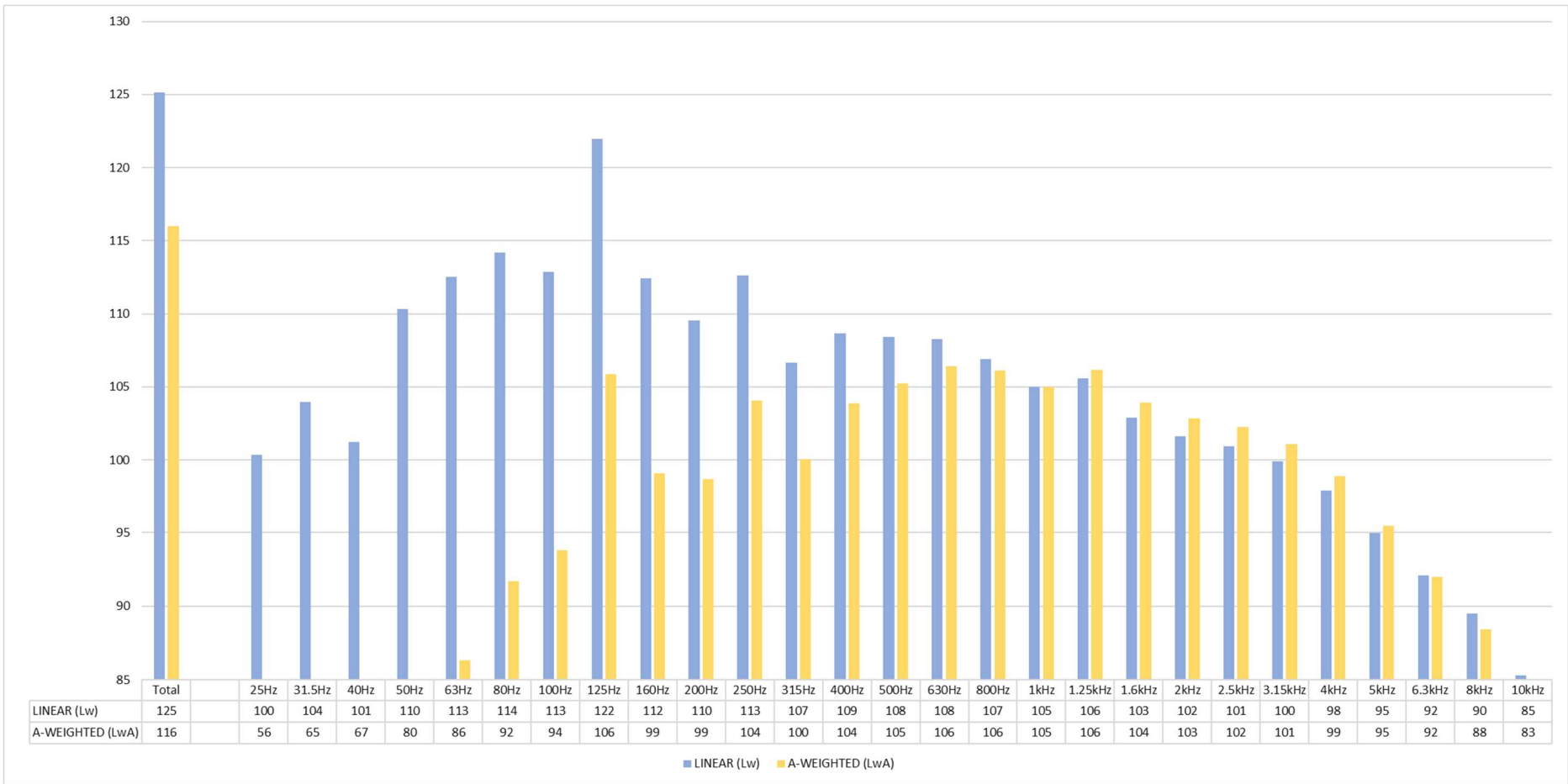


Figure 62: DT304 Stationary

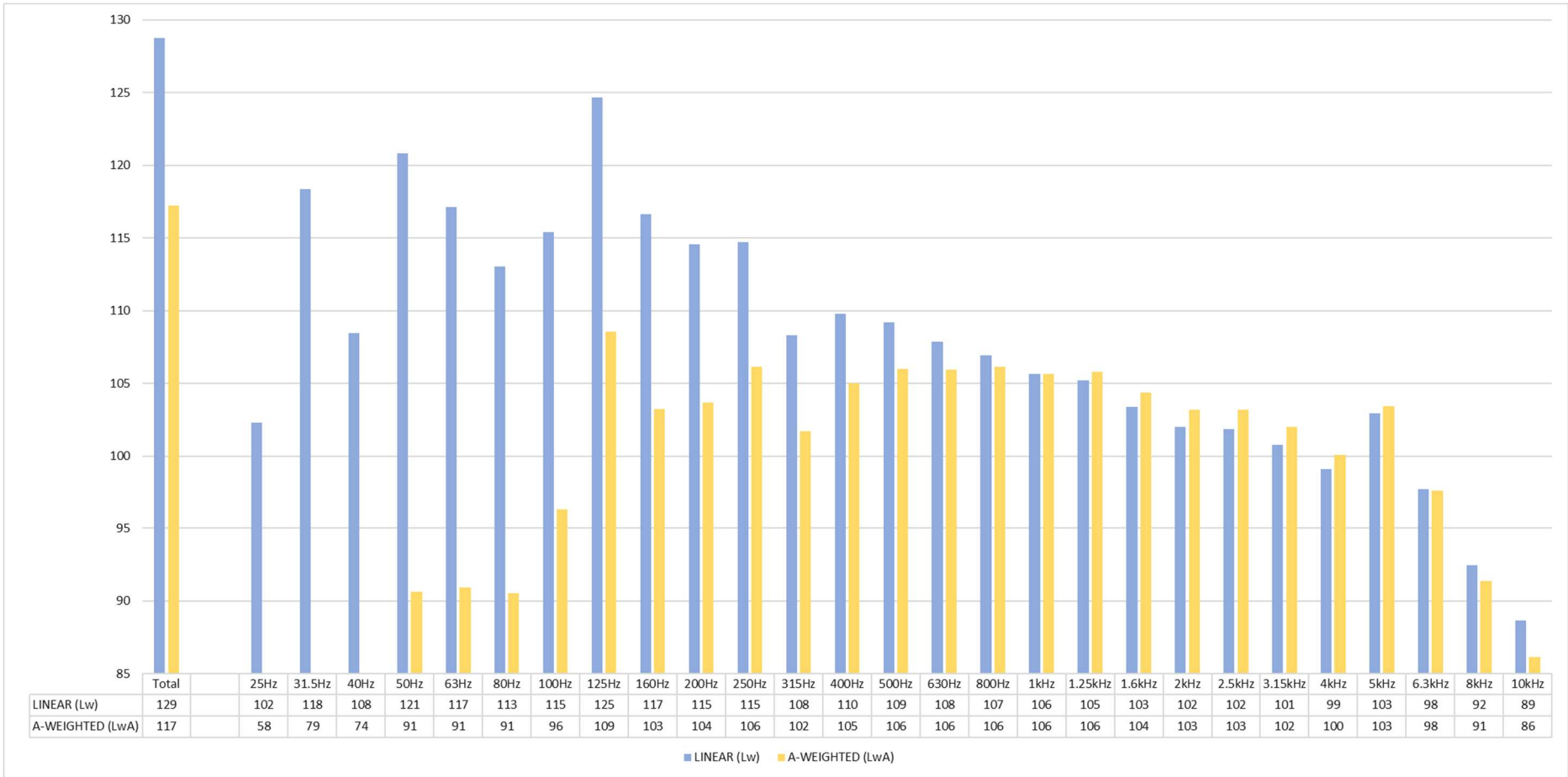


Figure 63: DT304 Dynamic Uphill

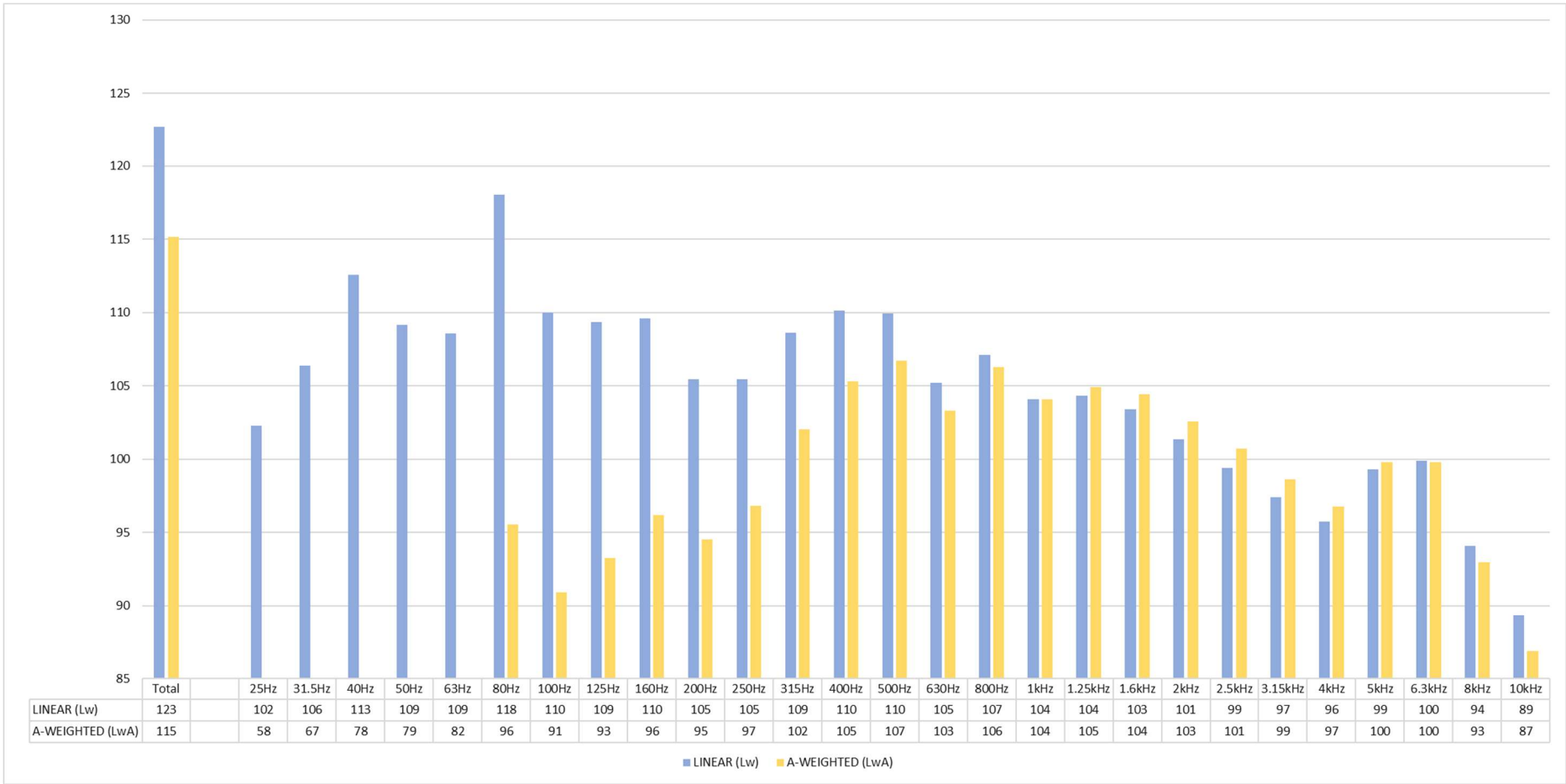


Figure 64: DT304 Dynamic Downhill

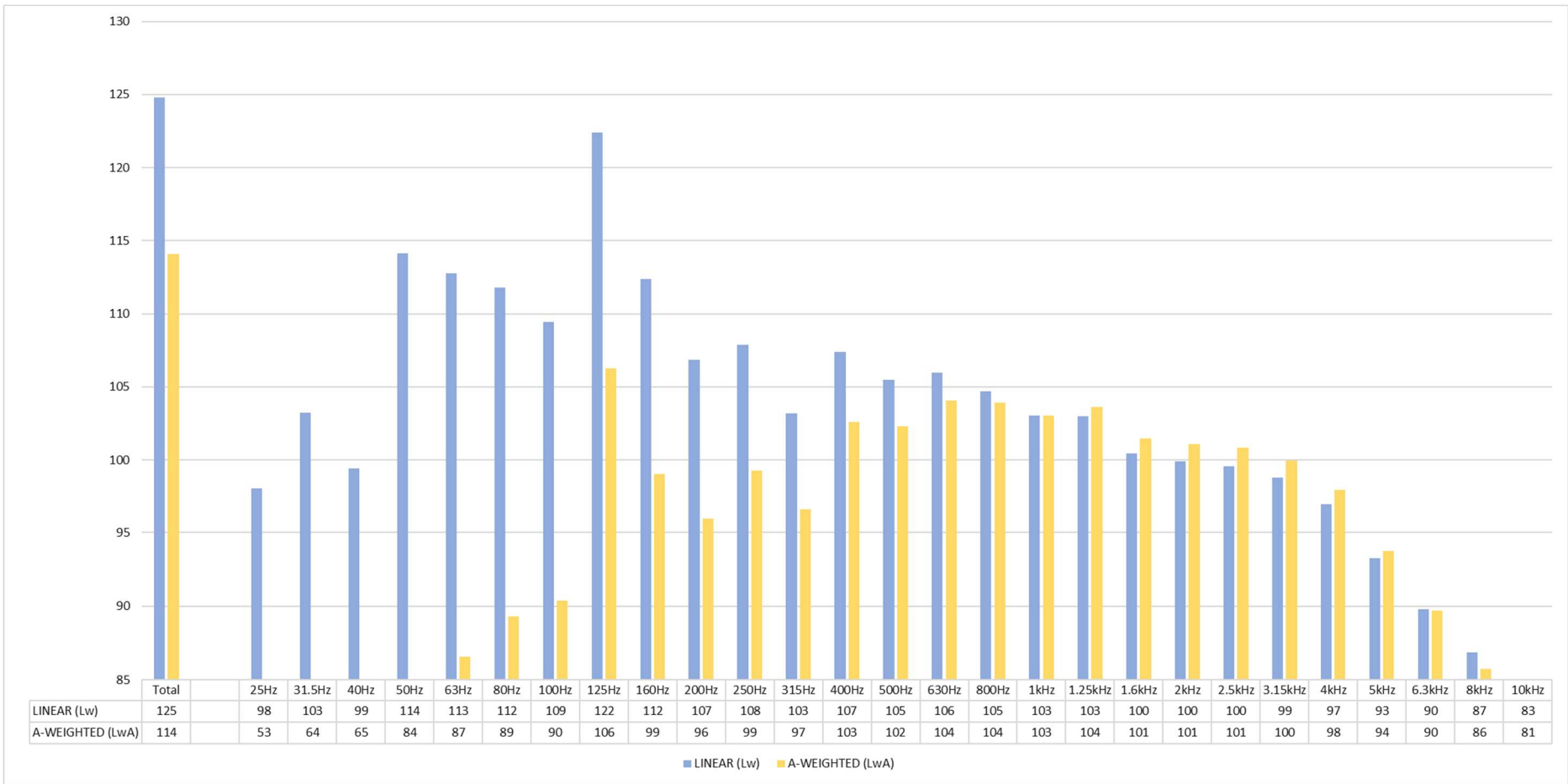


Figure 65: DT306 Stationary

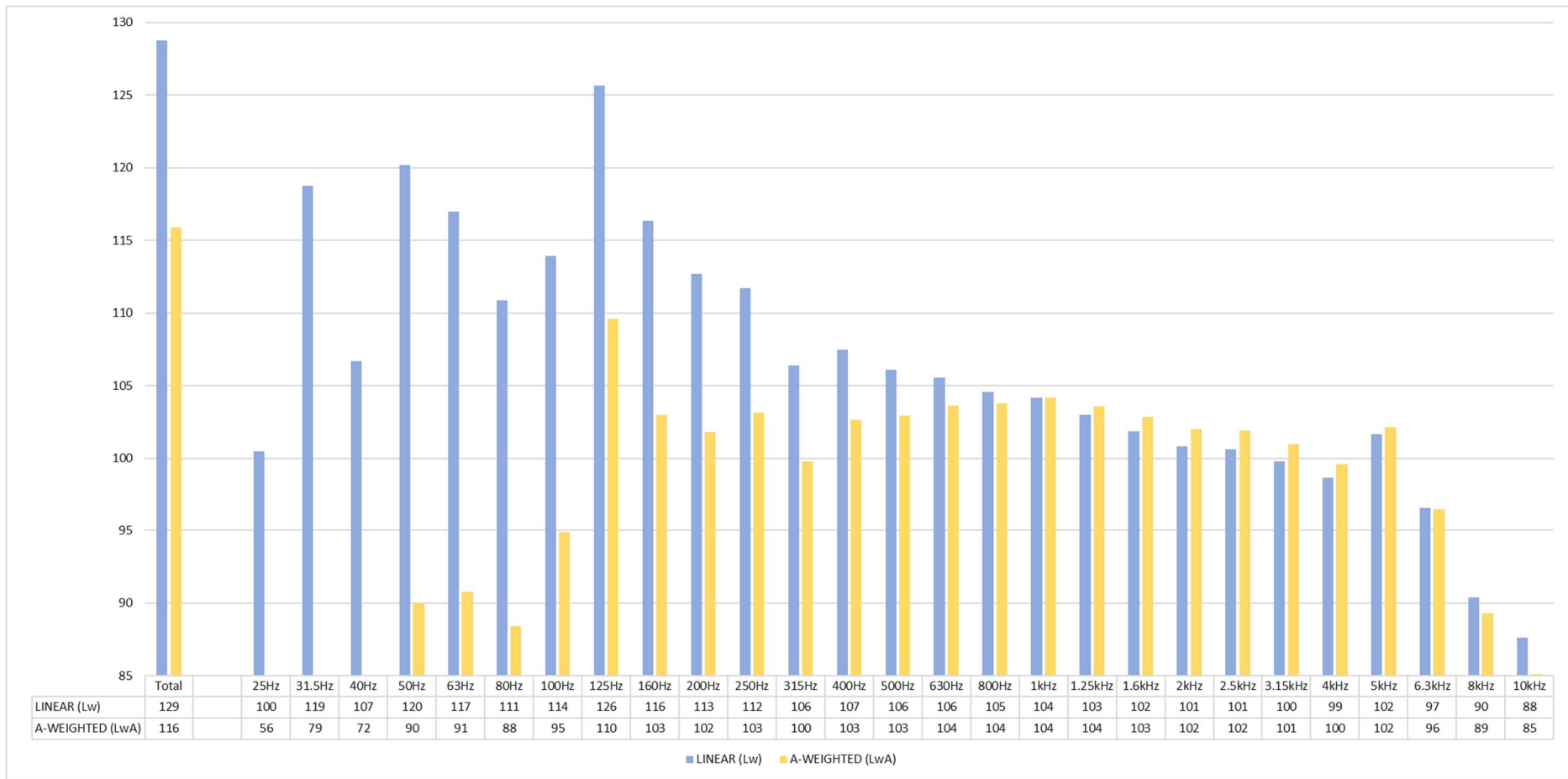


Figure 66: DT306 Dynamic Uphill

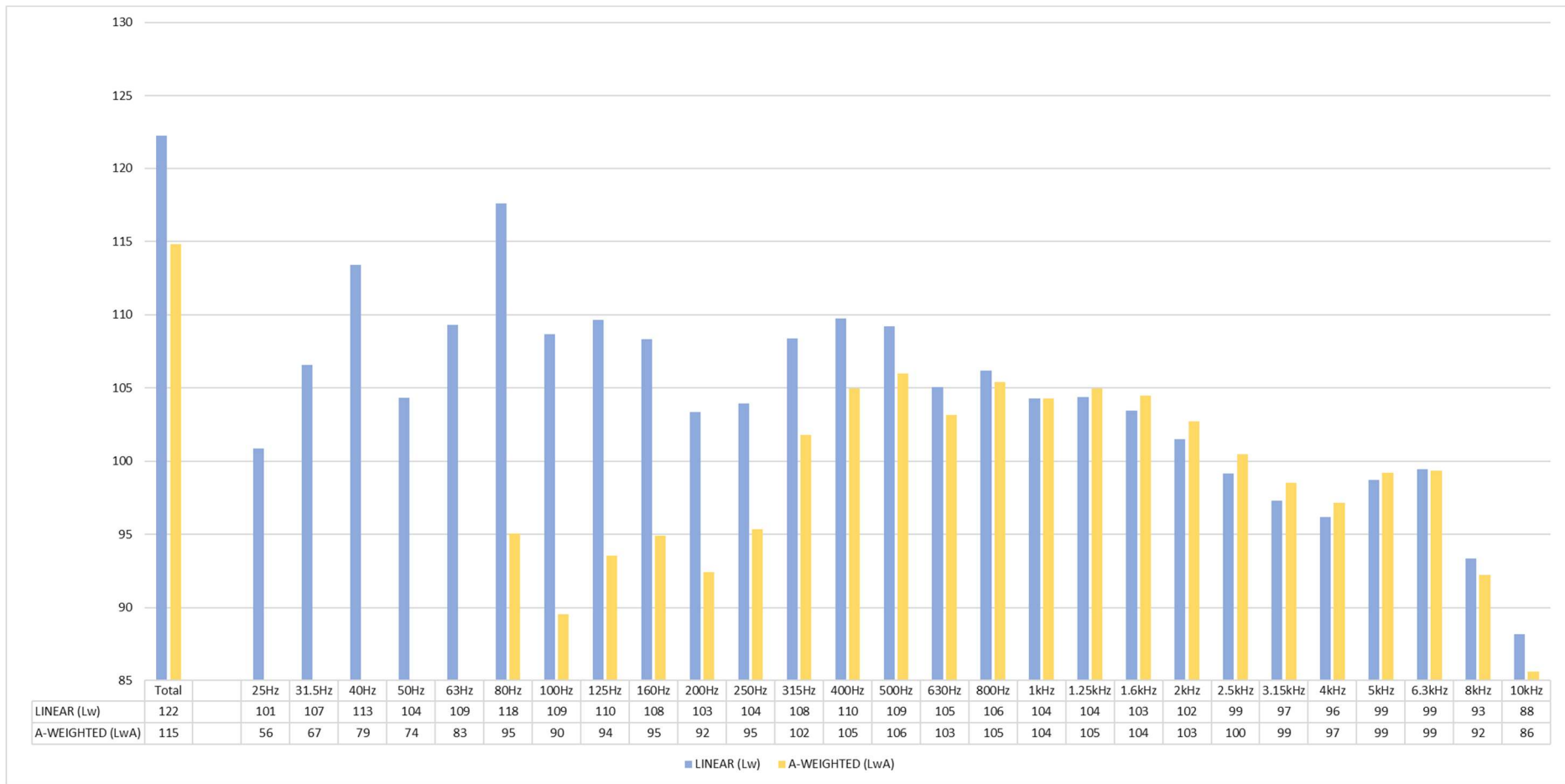


Figure 67: DT306 Dynamic Downhill

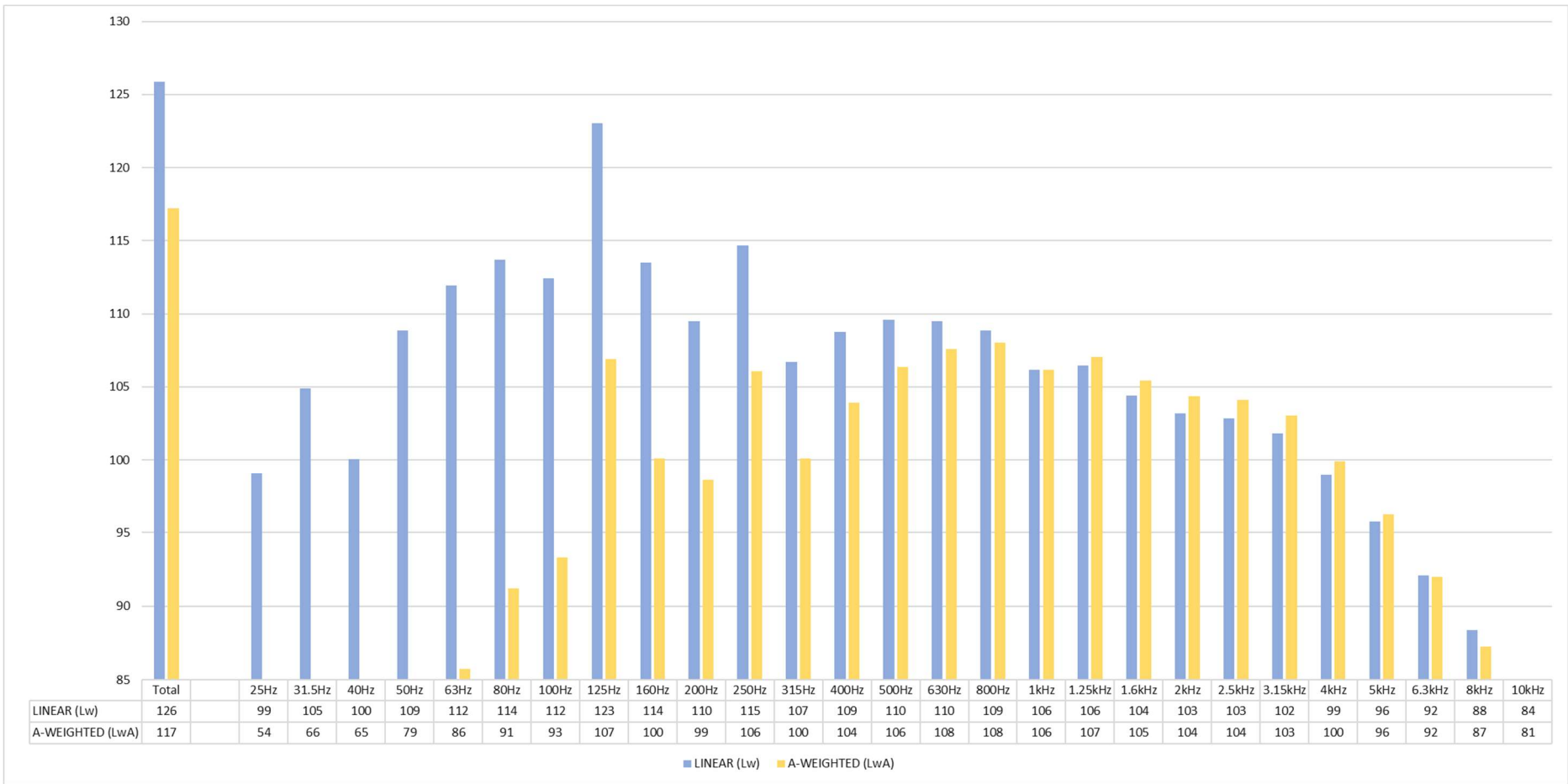


Figure 68: DT309 Stationary

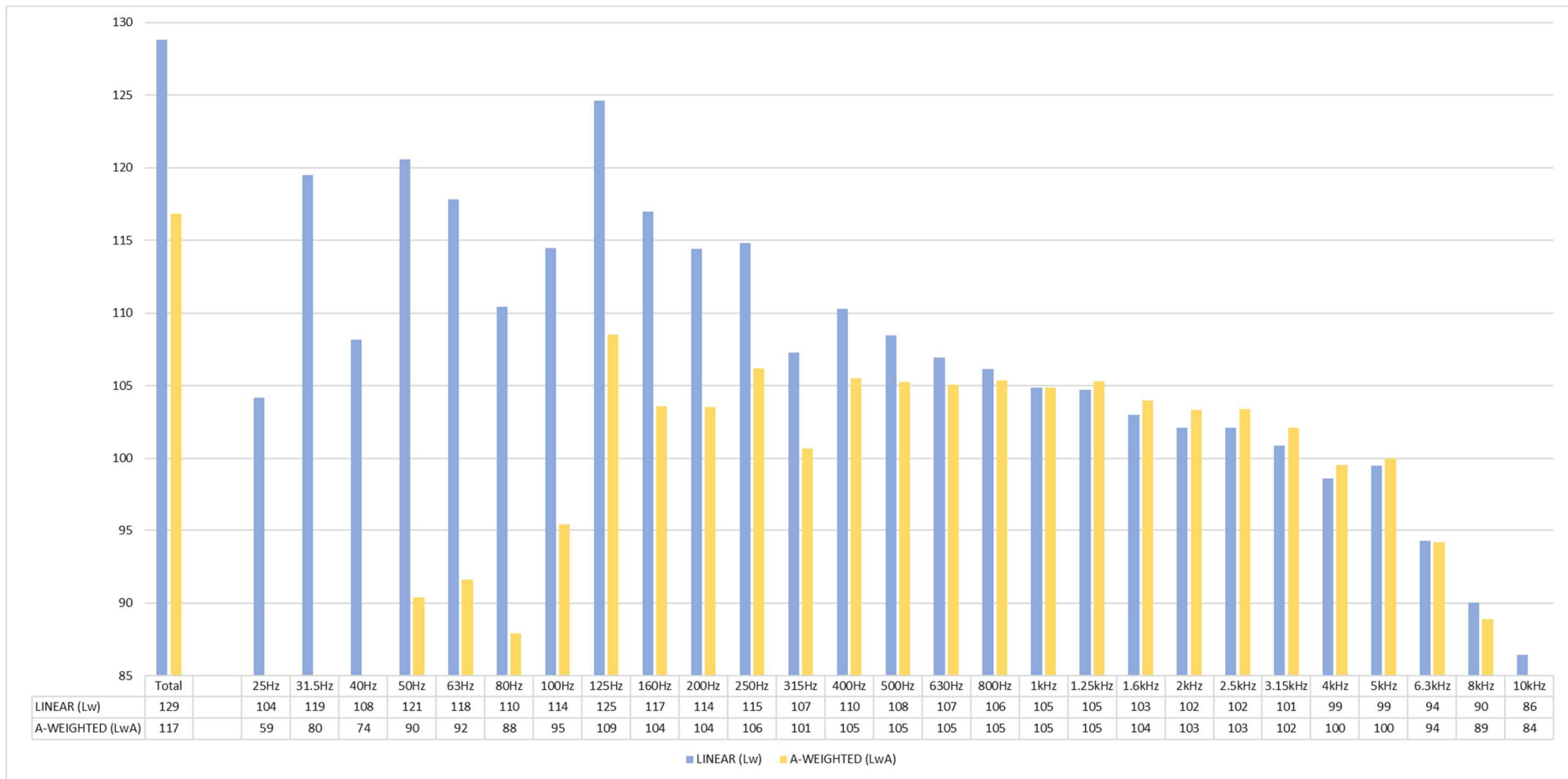


Figure 69: DT309 Dynamic Uphill

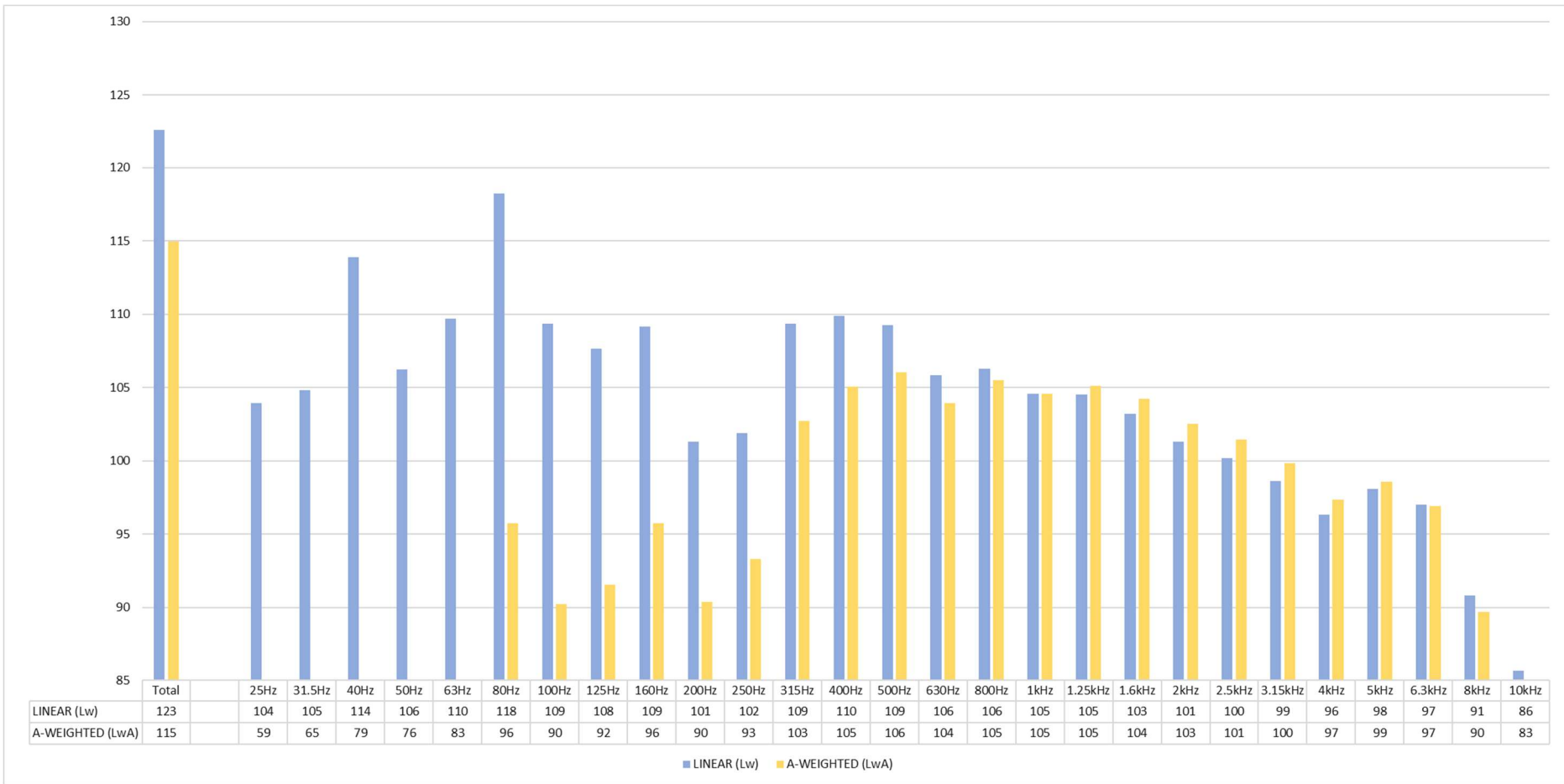


Figure 70: DT309 Dynamic Downhill

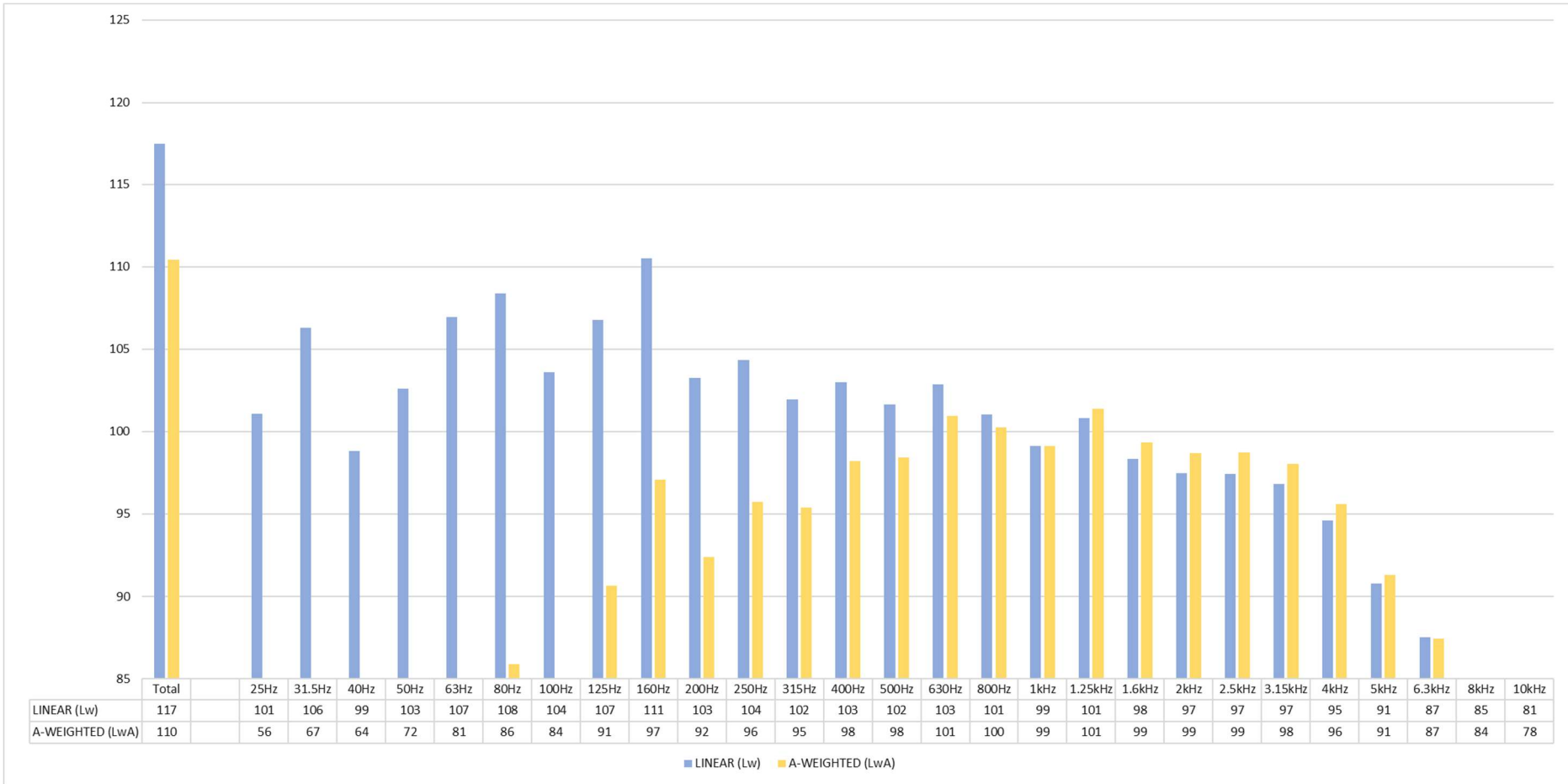


Figure 71: DT328 Stationary

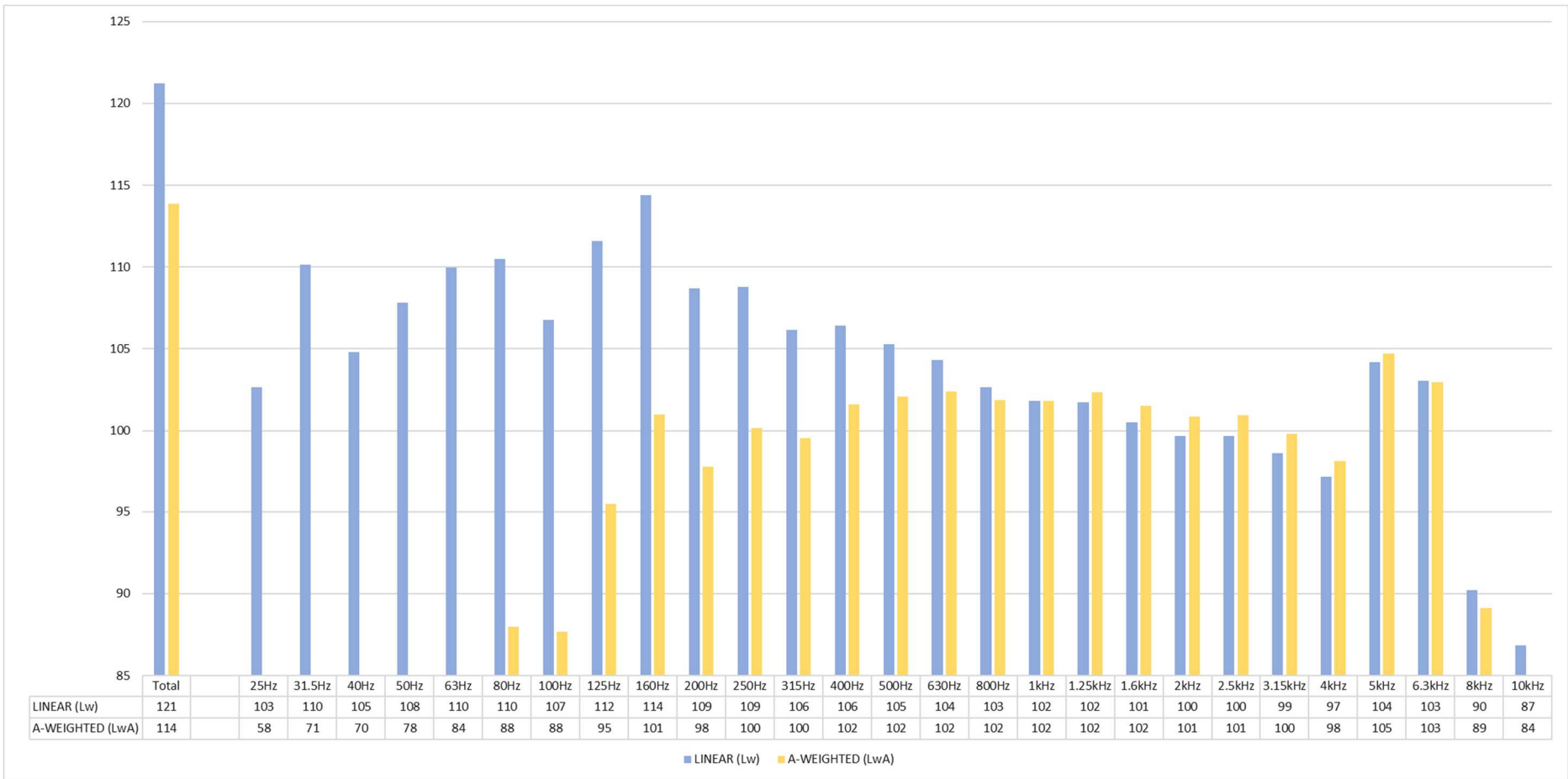


Figure 72: DT328 Dynamic Uphill

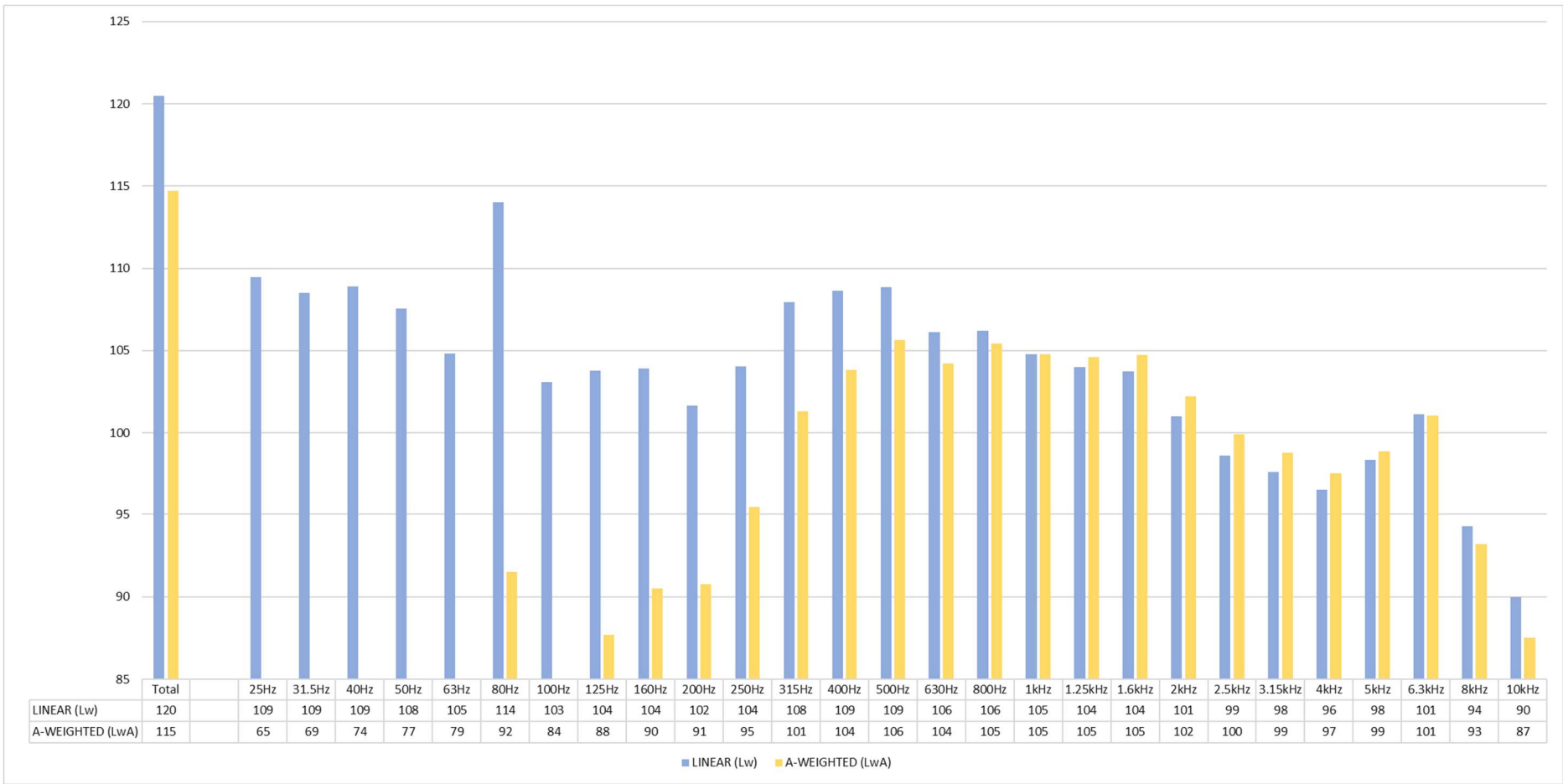


Figure 73: DT328 Dynamic Downhill

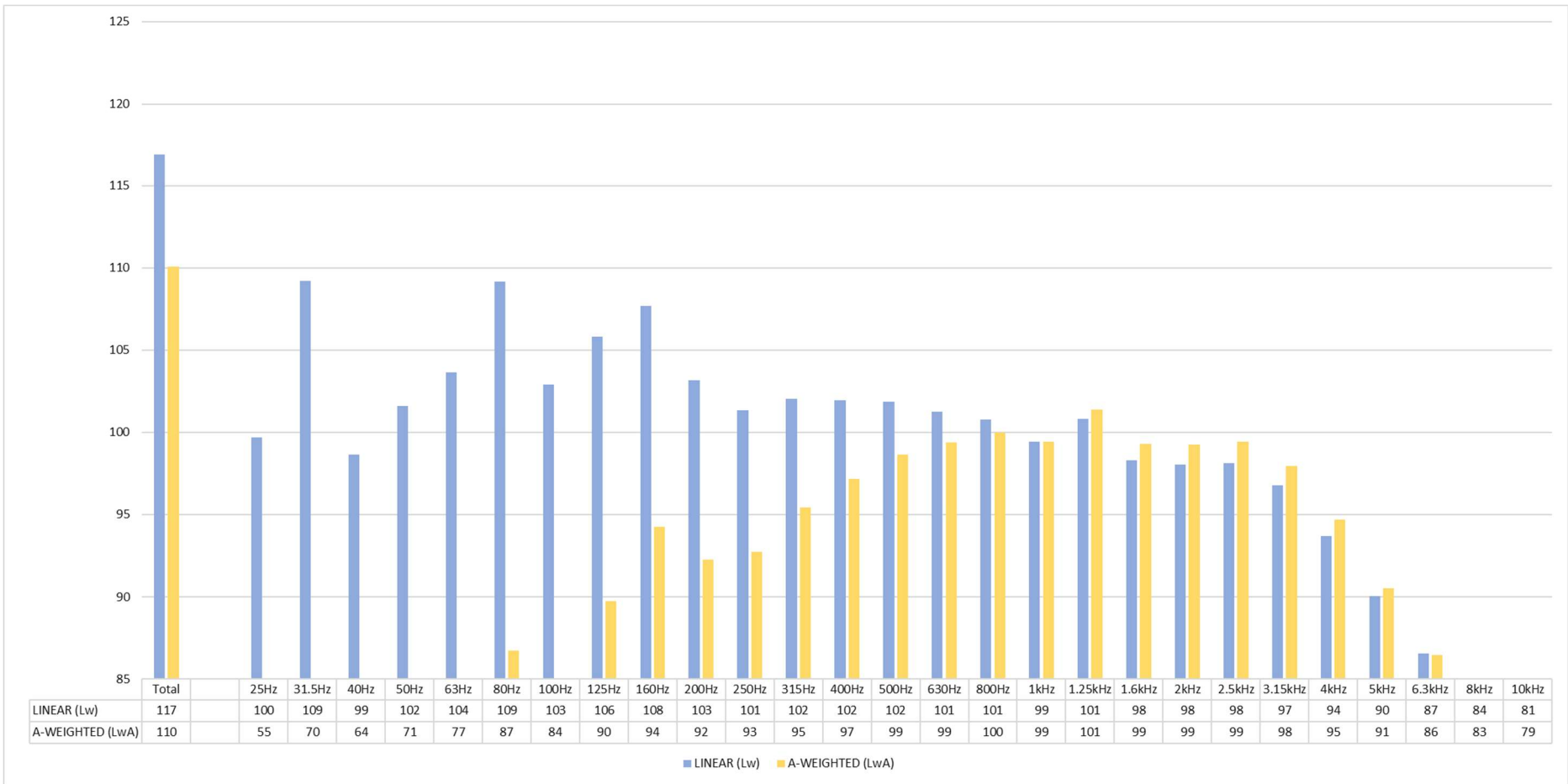


Figure 74: DT329 Stationary

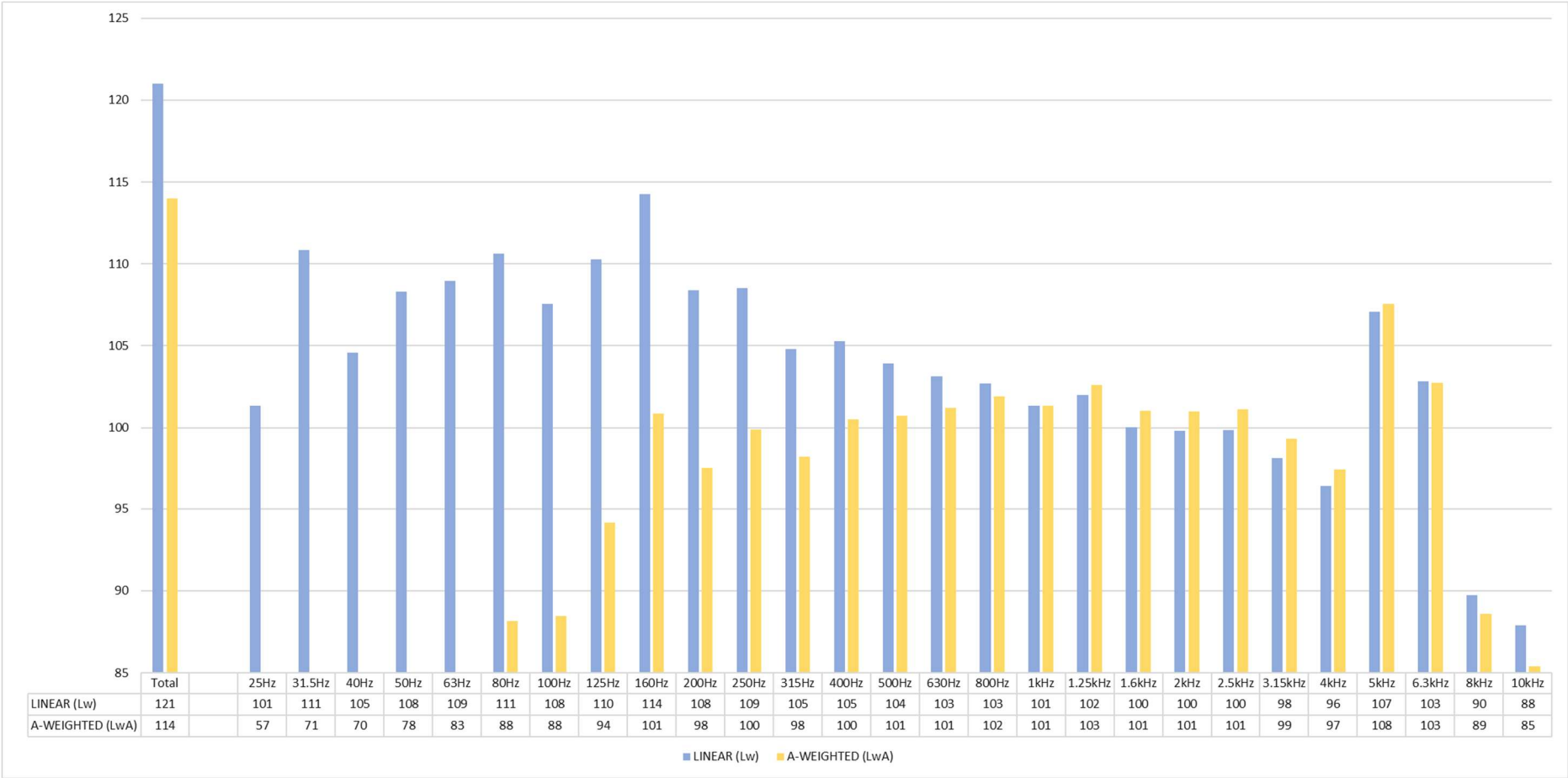


Figure 75: DT329 Dynamic Uphill

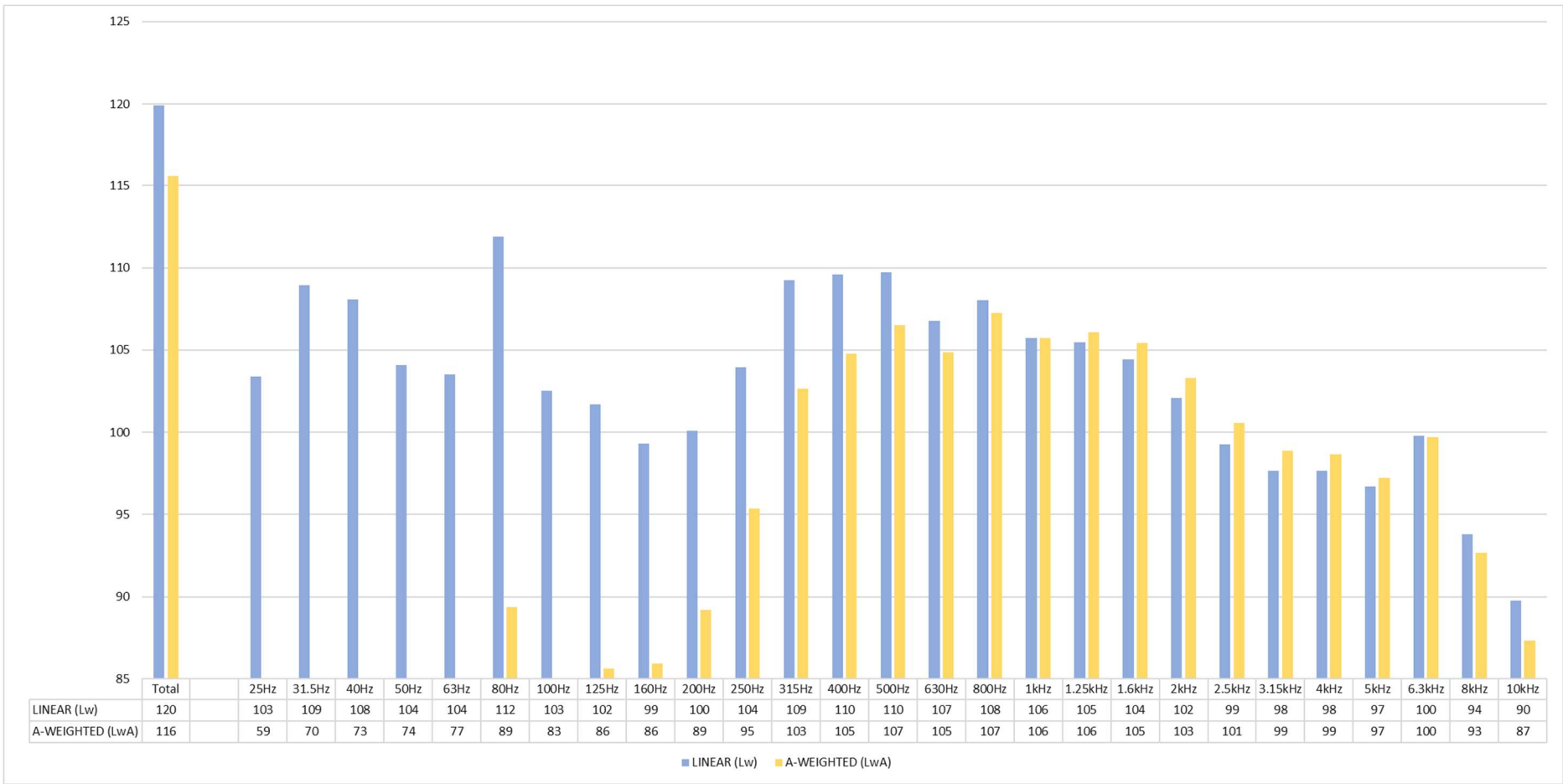


Figure 76: DT329 Dynamic Downhill

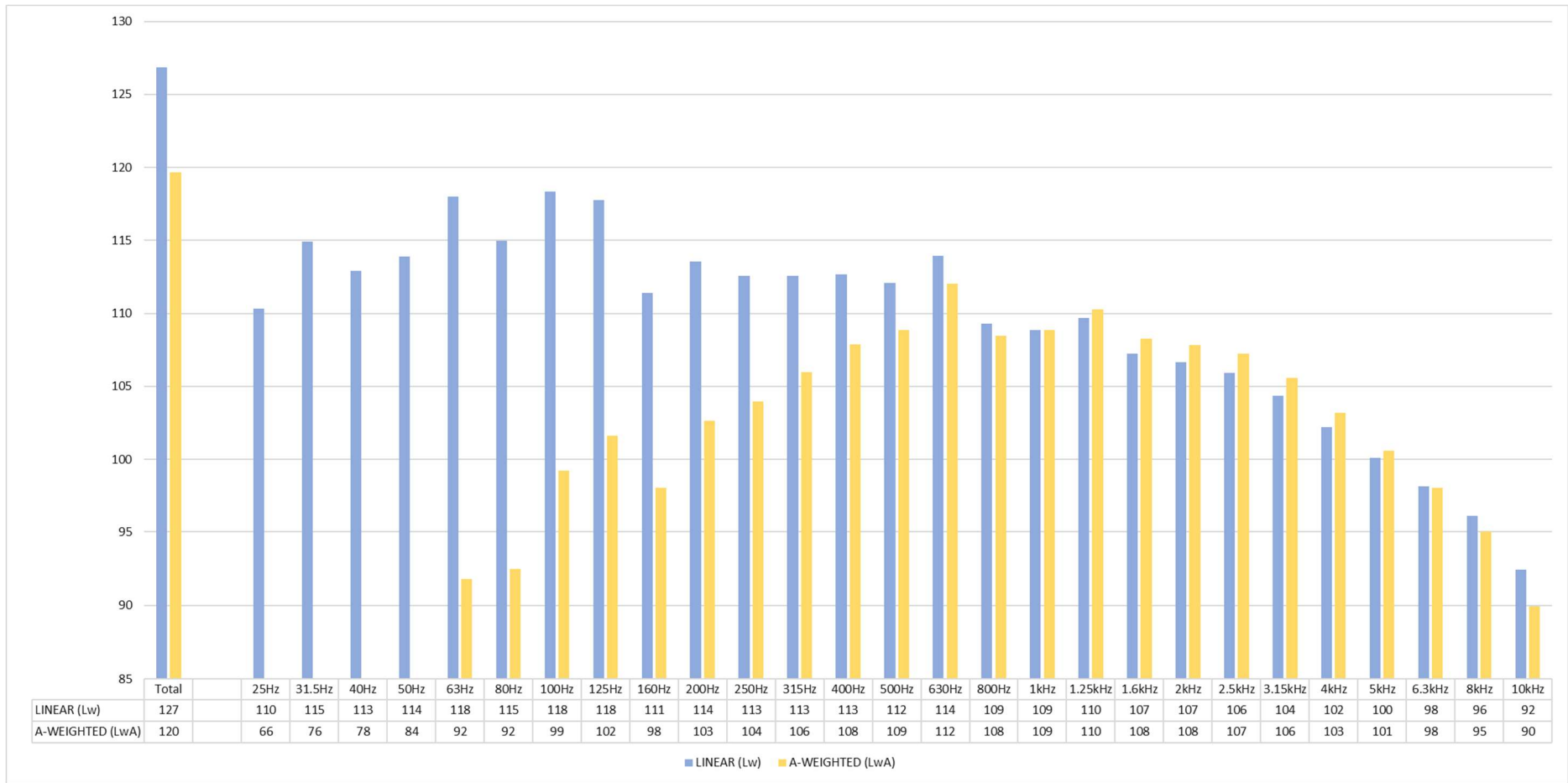


Figure 77: DT747 Stationary

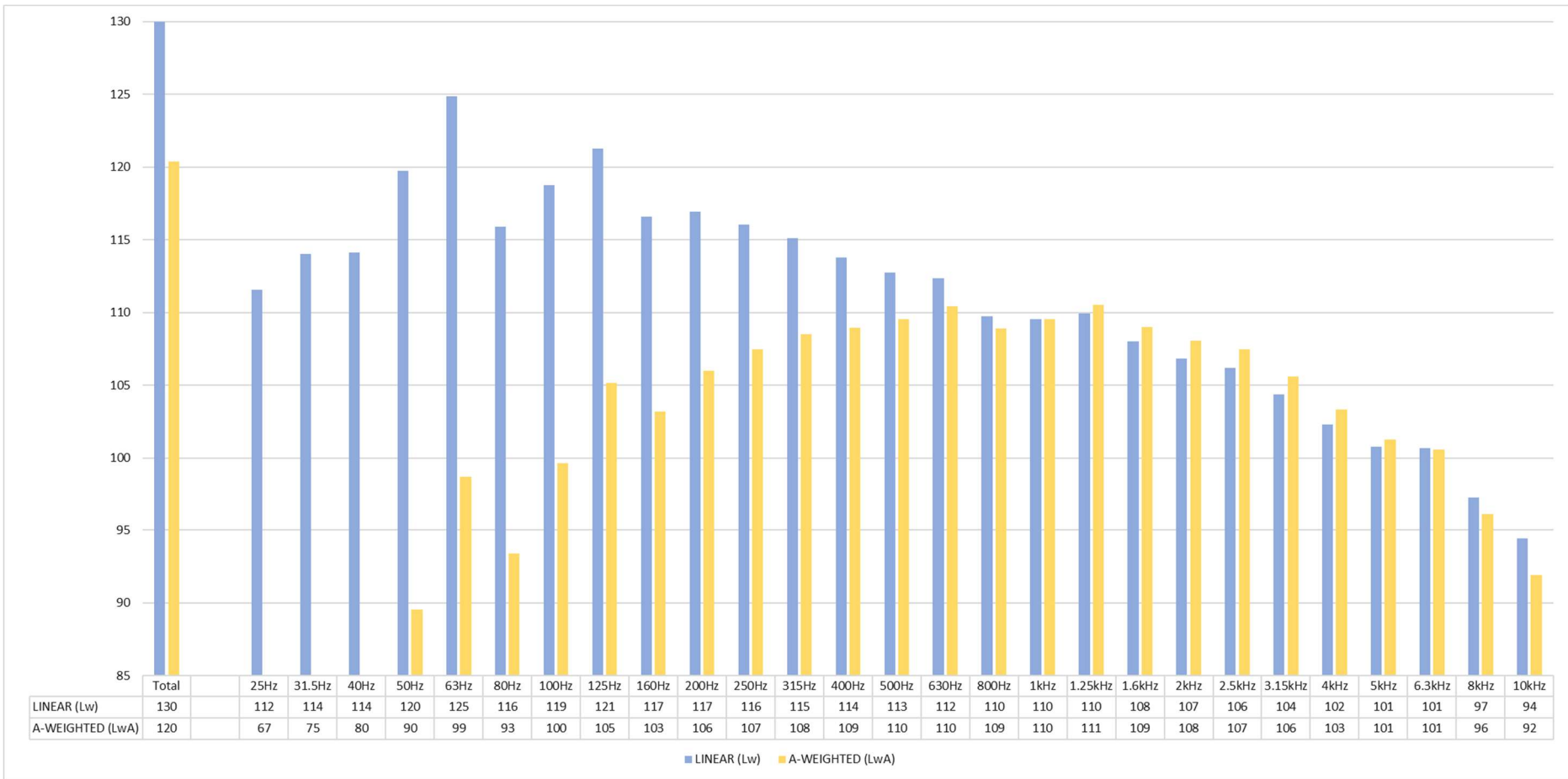


Figure 78: DT747 Dynamic Uphill

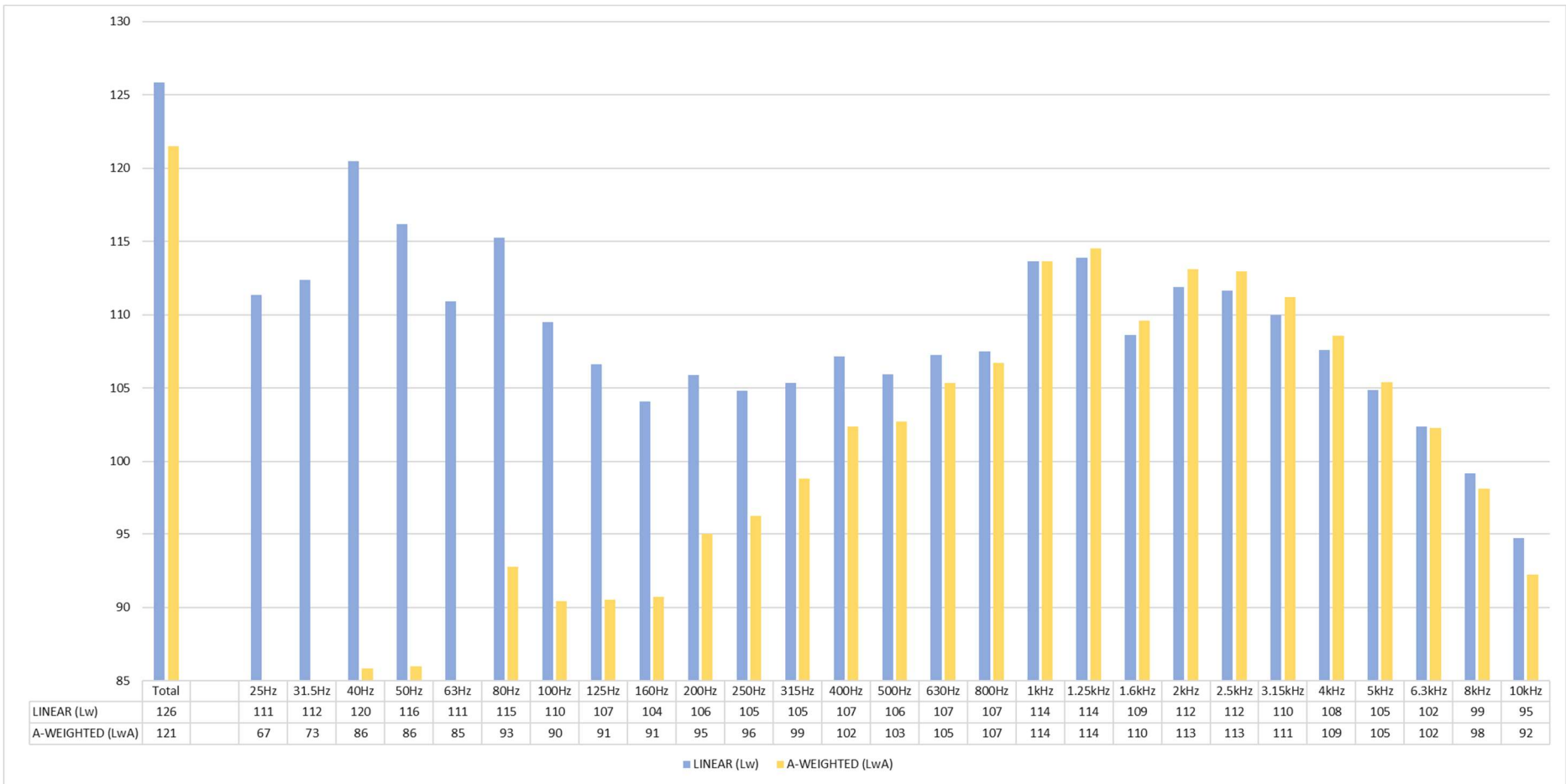


Figure 79: DT747 Dynamic Downhill

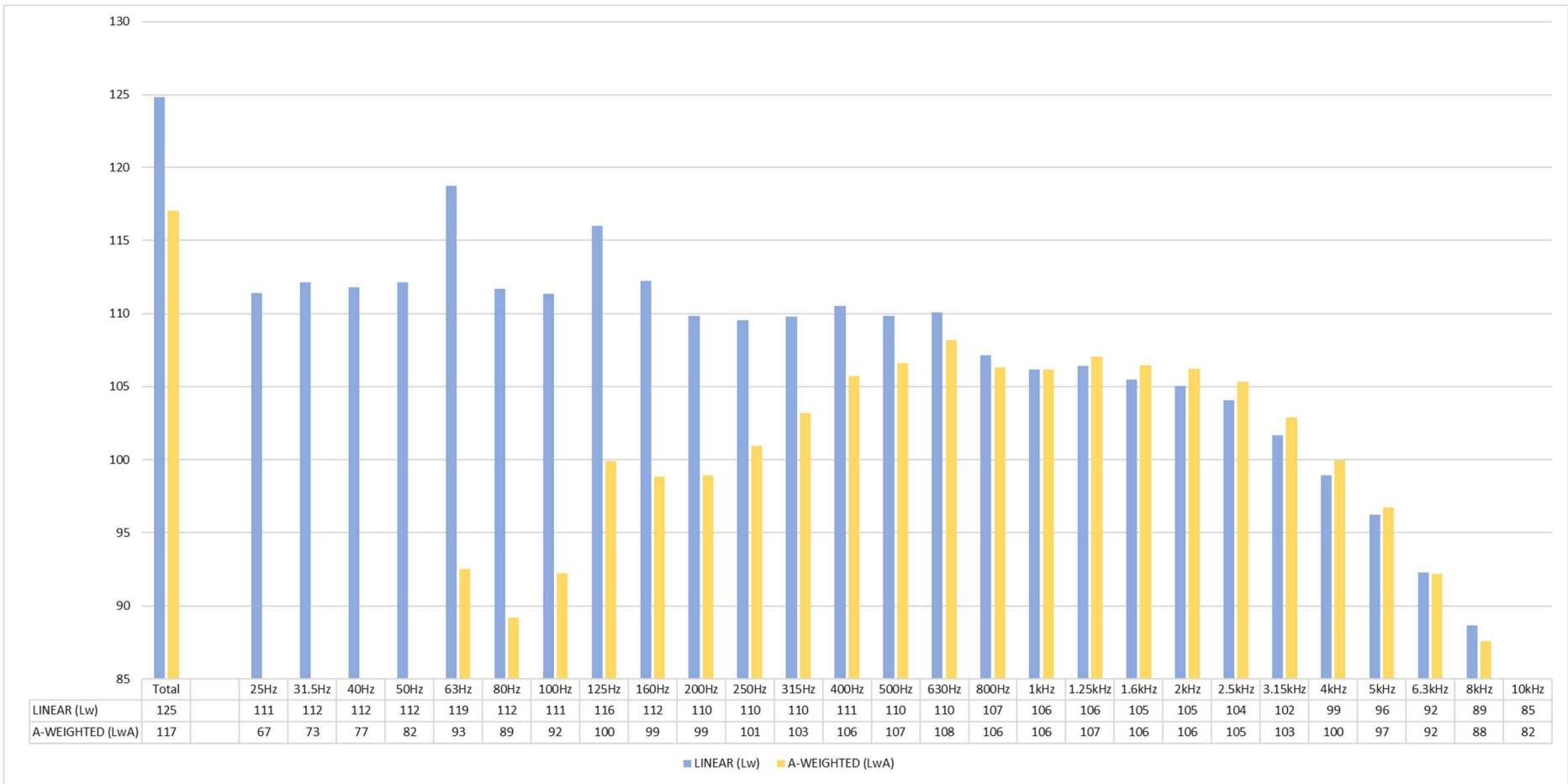


Figure 80: DT754 Stationary

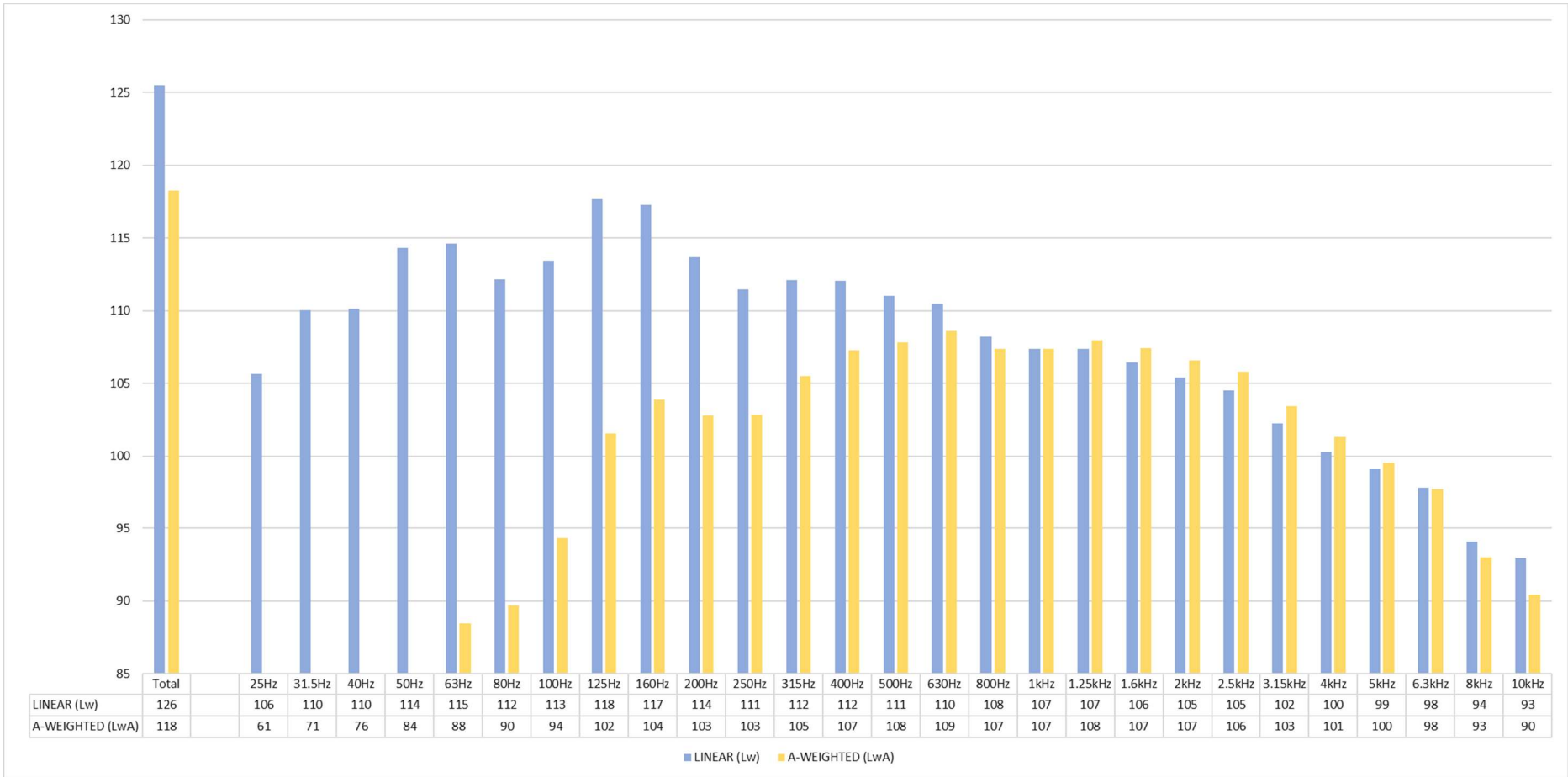


Figure 81: DT754 Dynamic Uphill

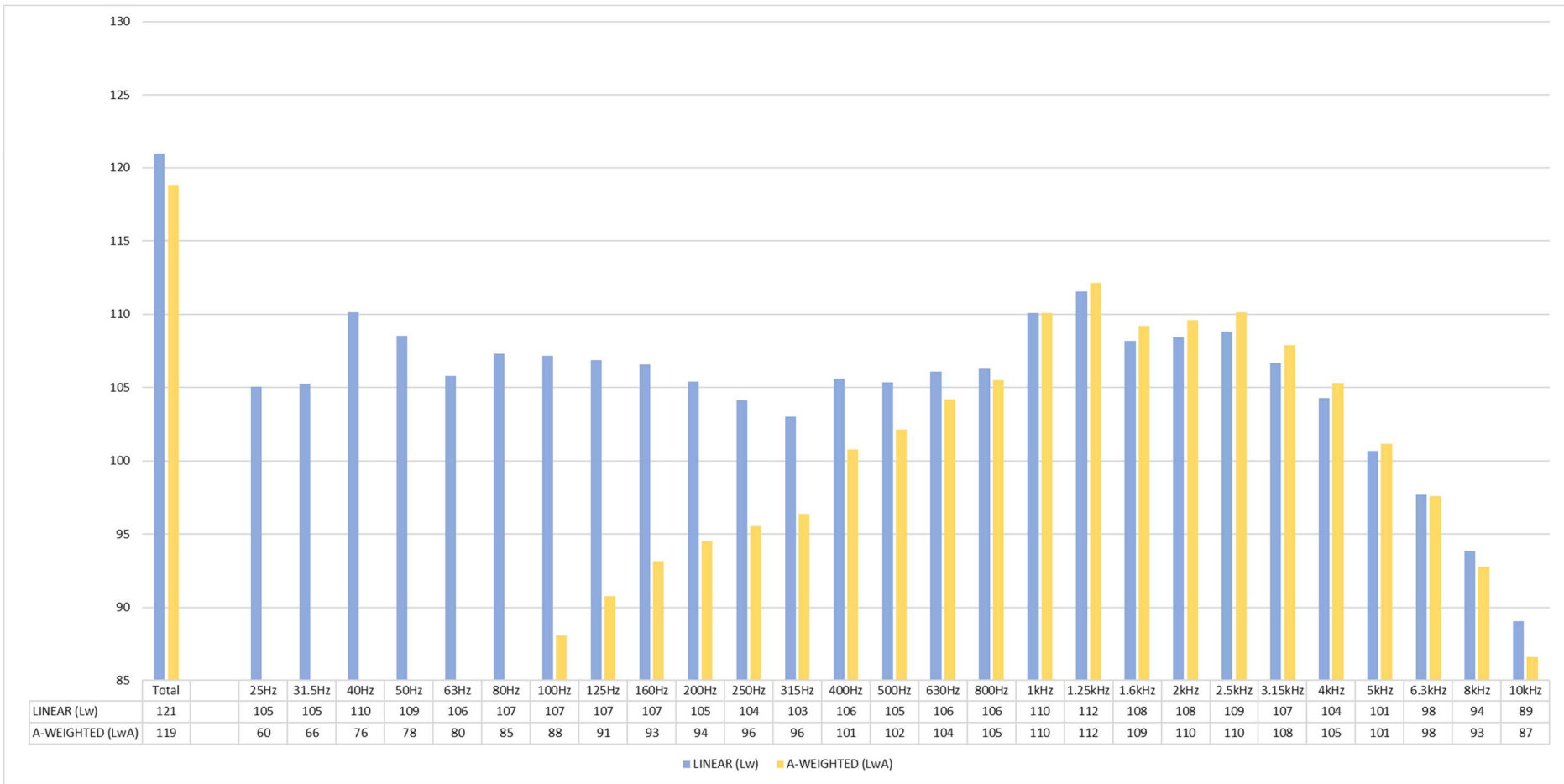


Figure 82: DT754 Dynamic Downhill

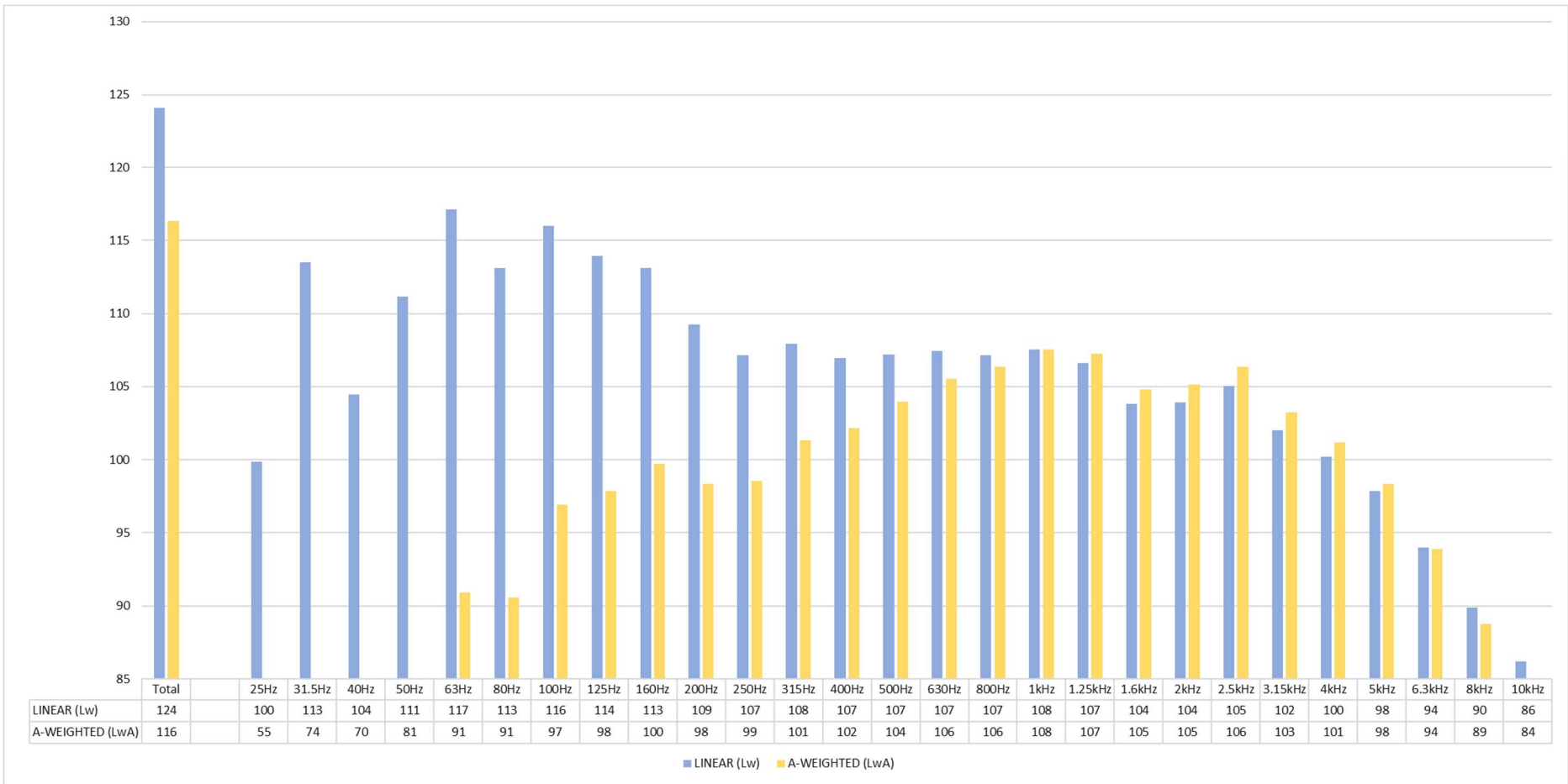


Figure 83: DT801 Stationary

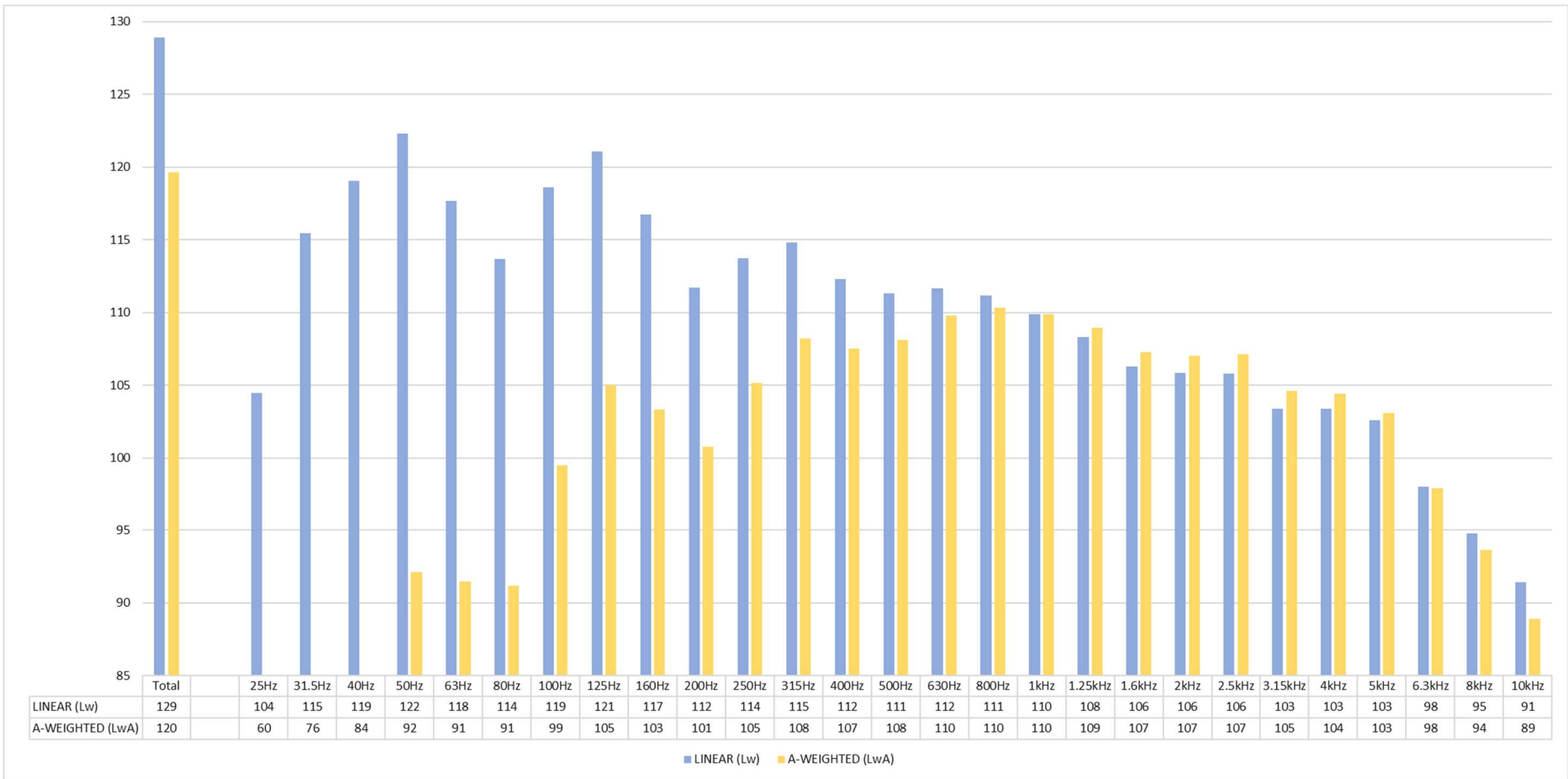


Figure 84: DT80I Dynamic Uphill

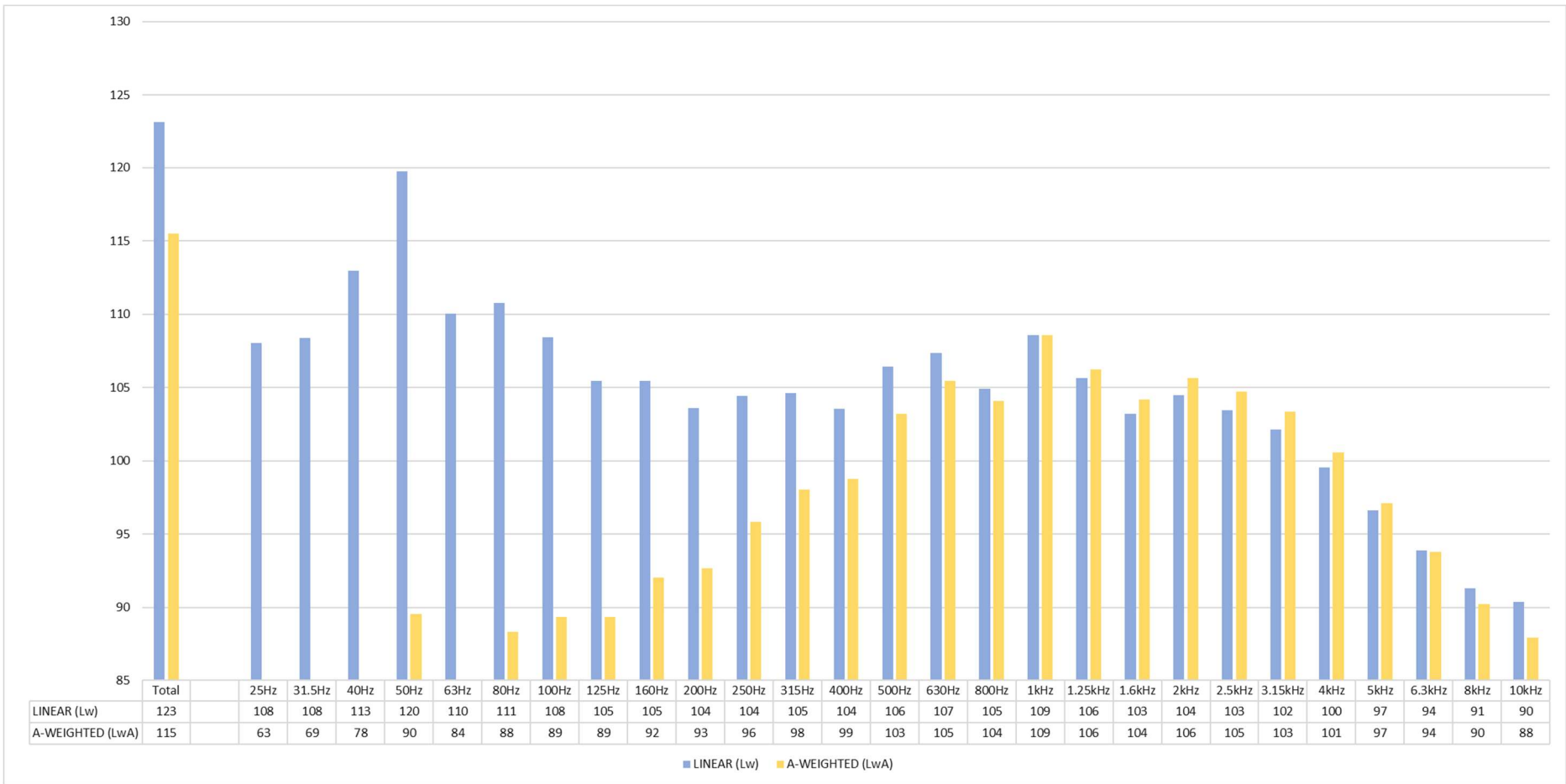


Figure 85: DT801 Dynamic Downhill

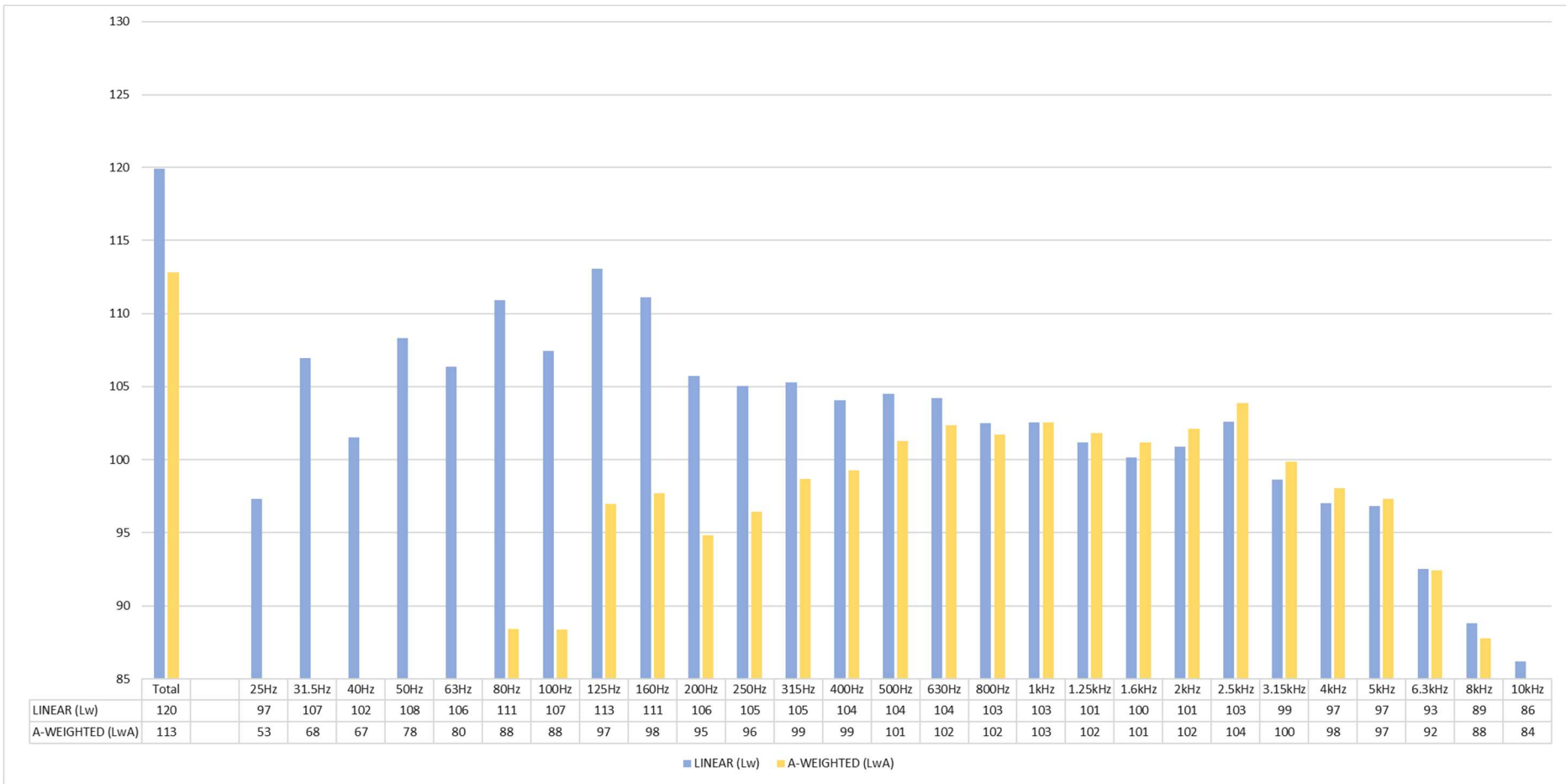


Figure 86: DT802 Stationary

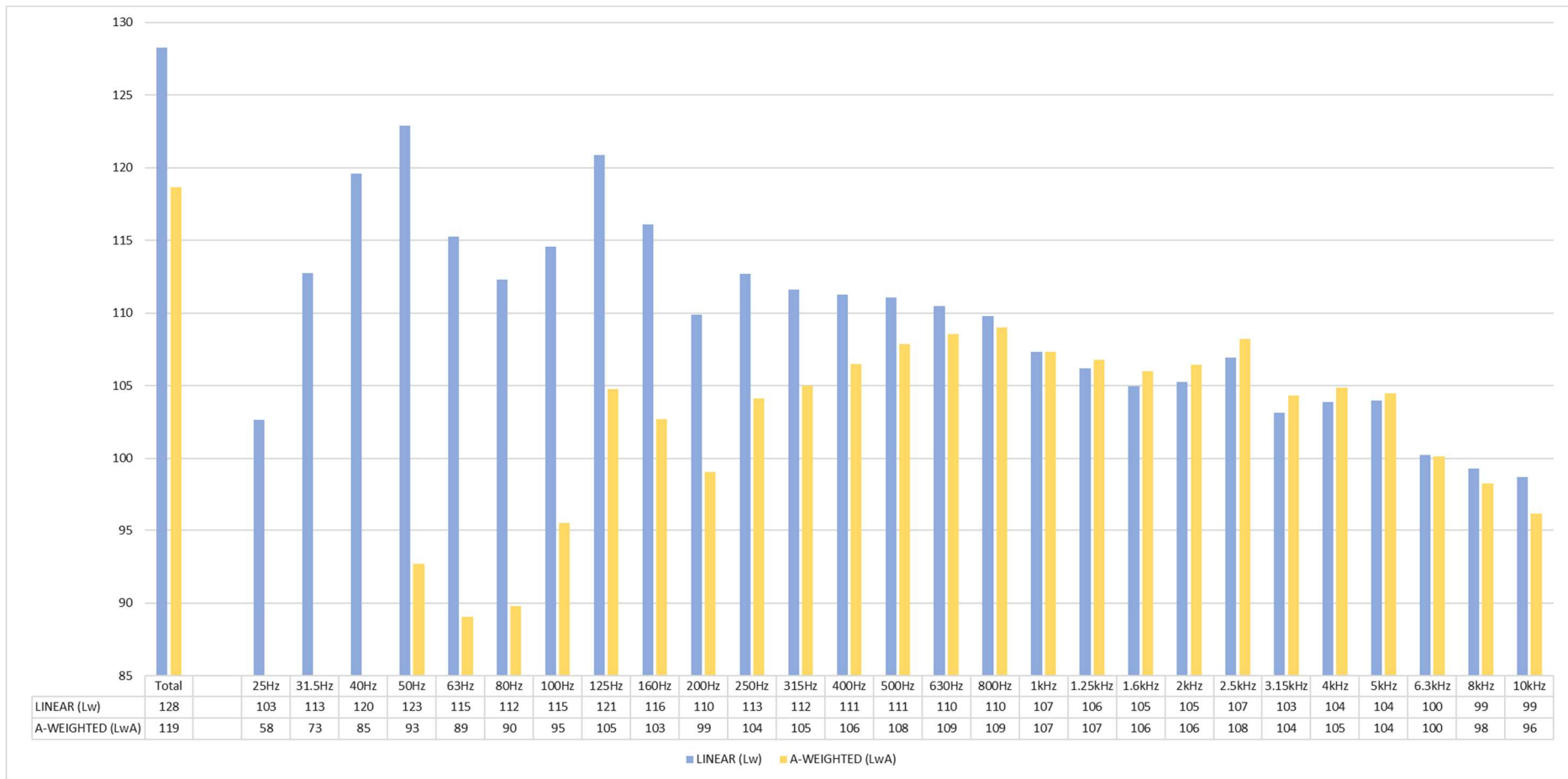


Figure 87: DT802 Dynamic Uphill

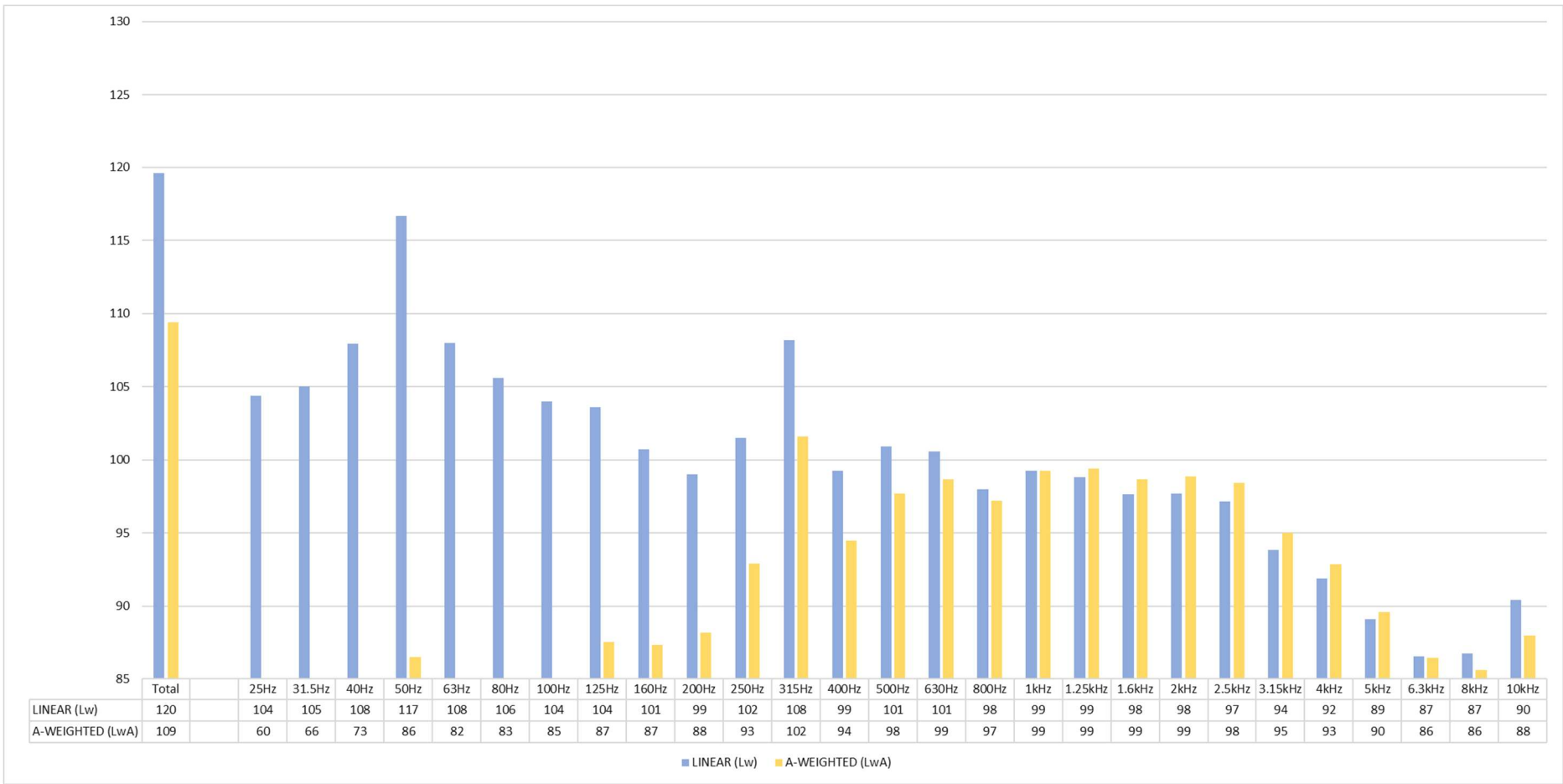


Figure 88: DT802 Dynamic Downhill

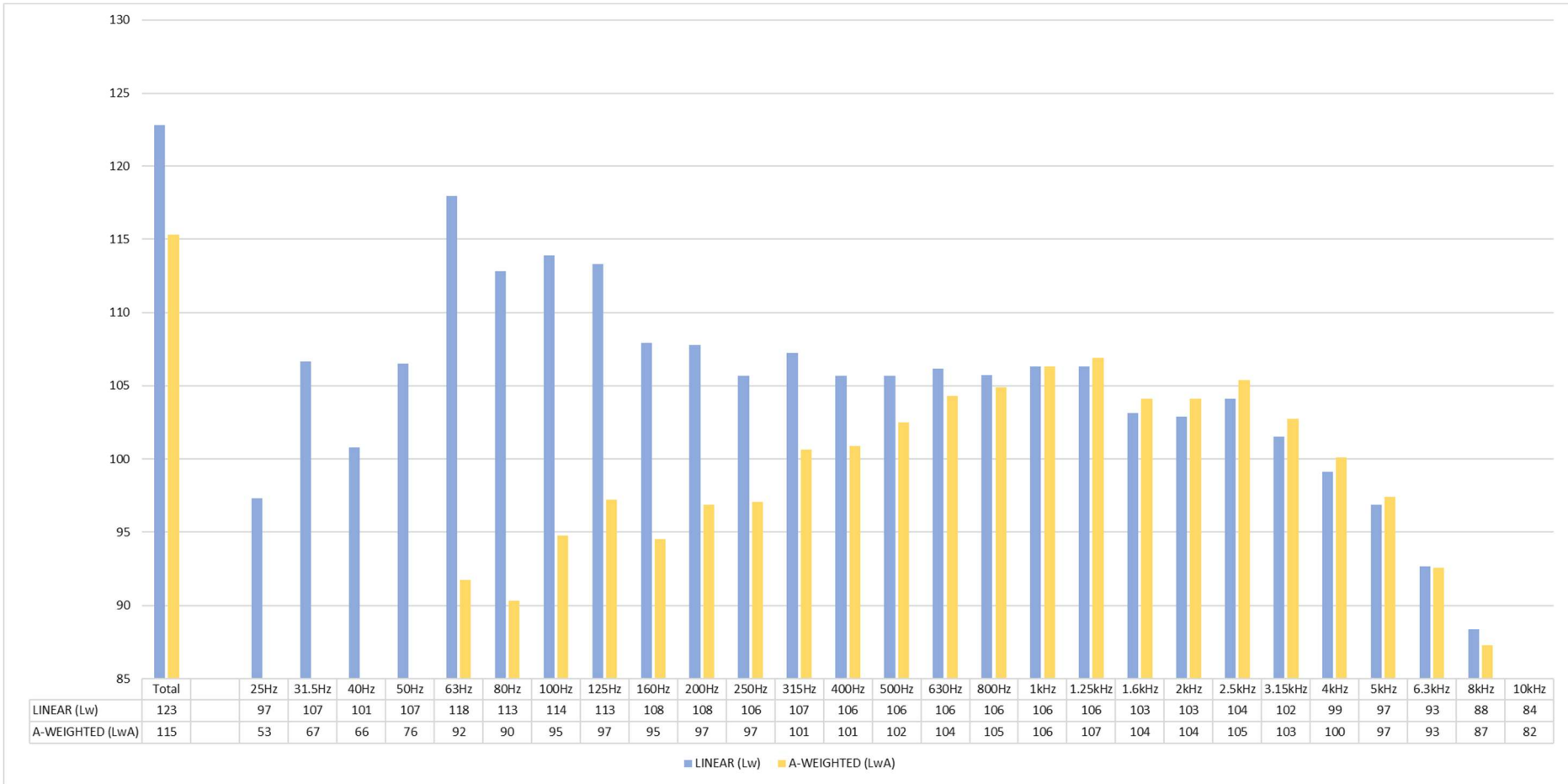


Figure 89: DT803 Stationary

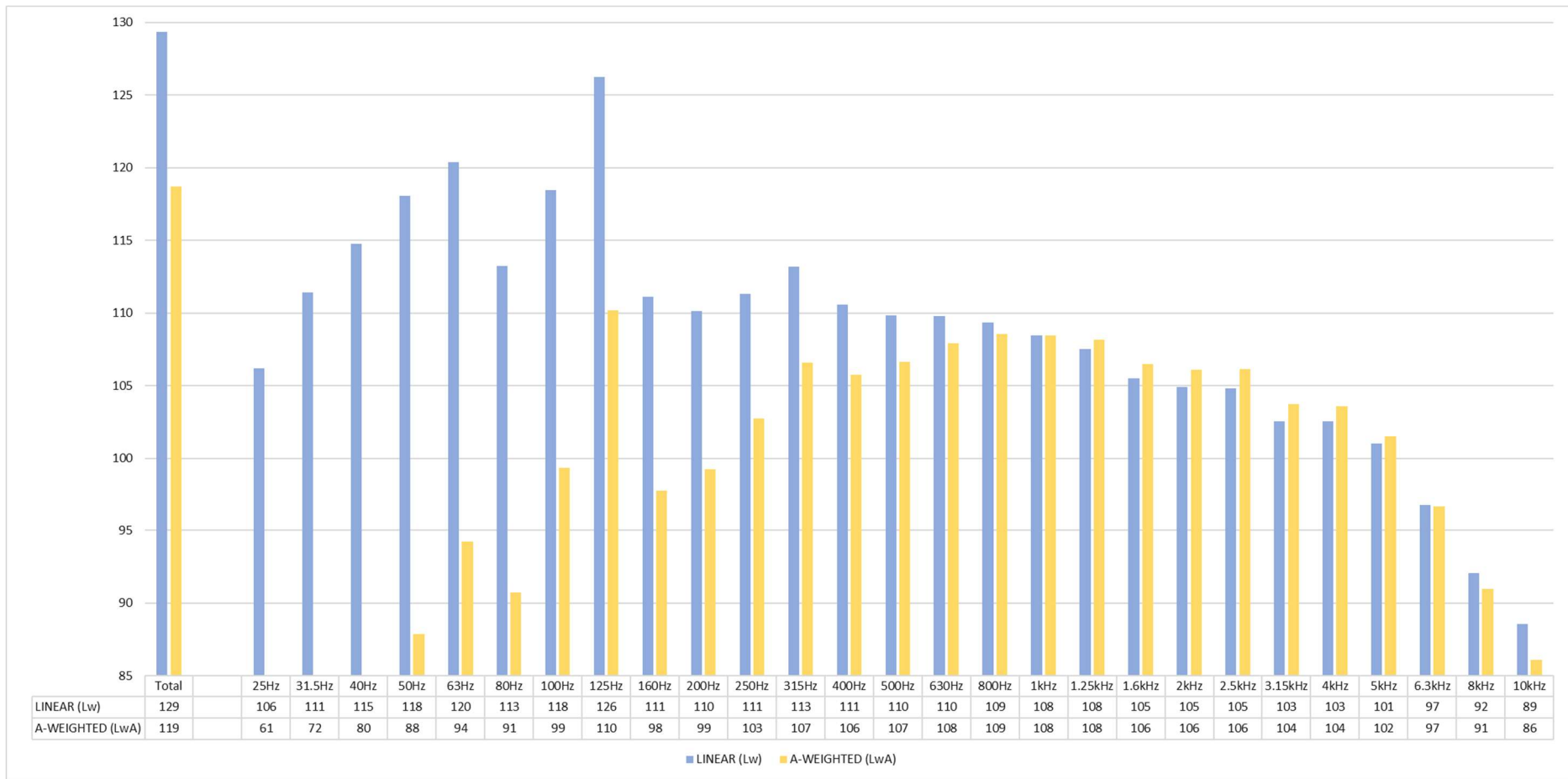


Figure 90: DT803 Dynamic Uphill

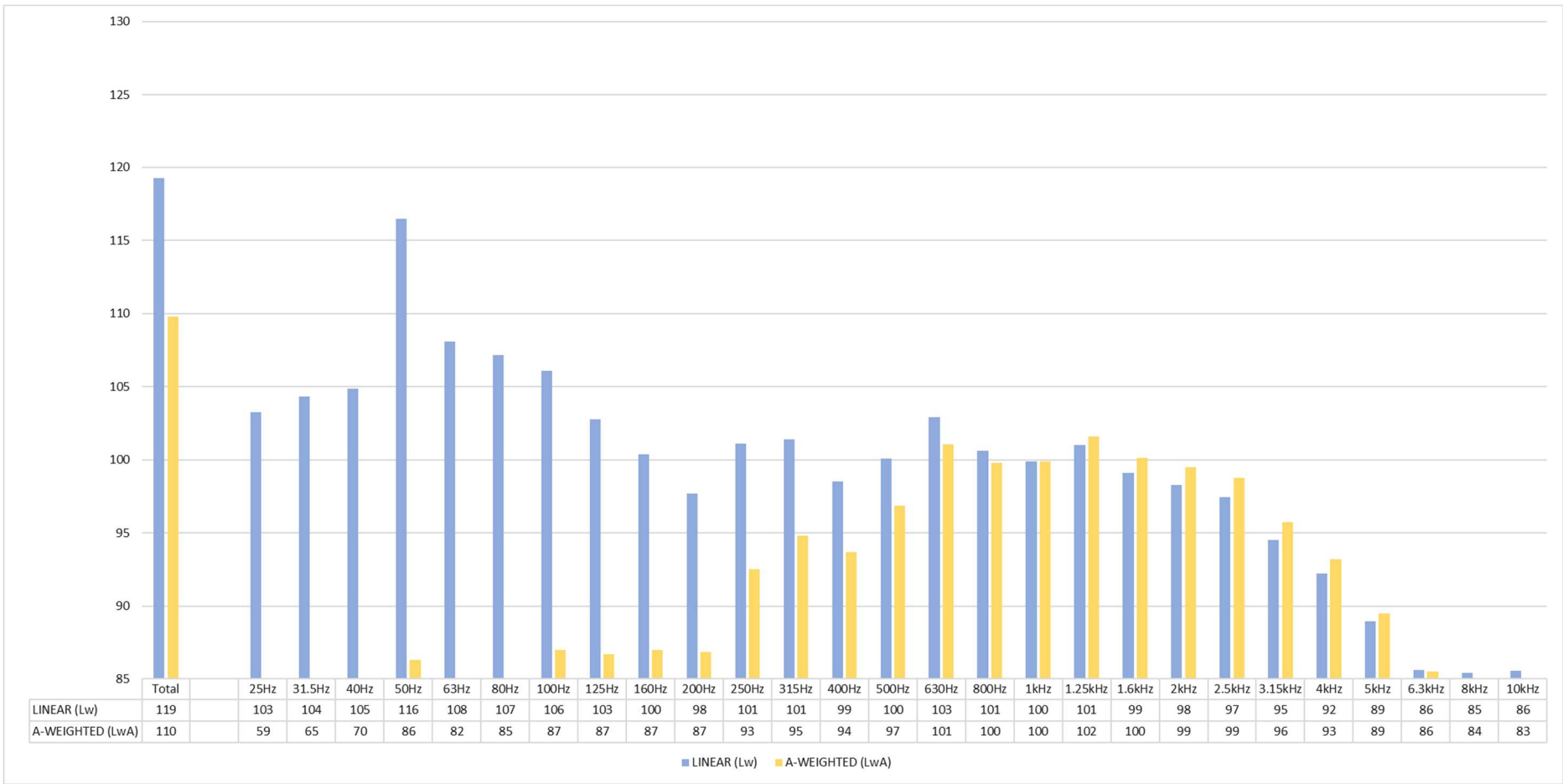


Figure 9I: DT803 Dynamic Downhill

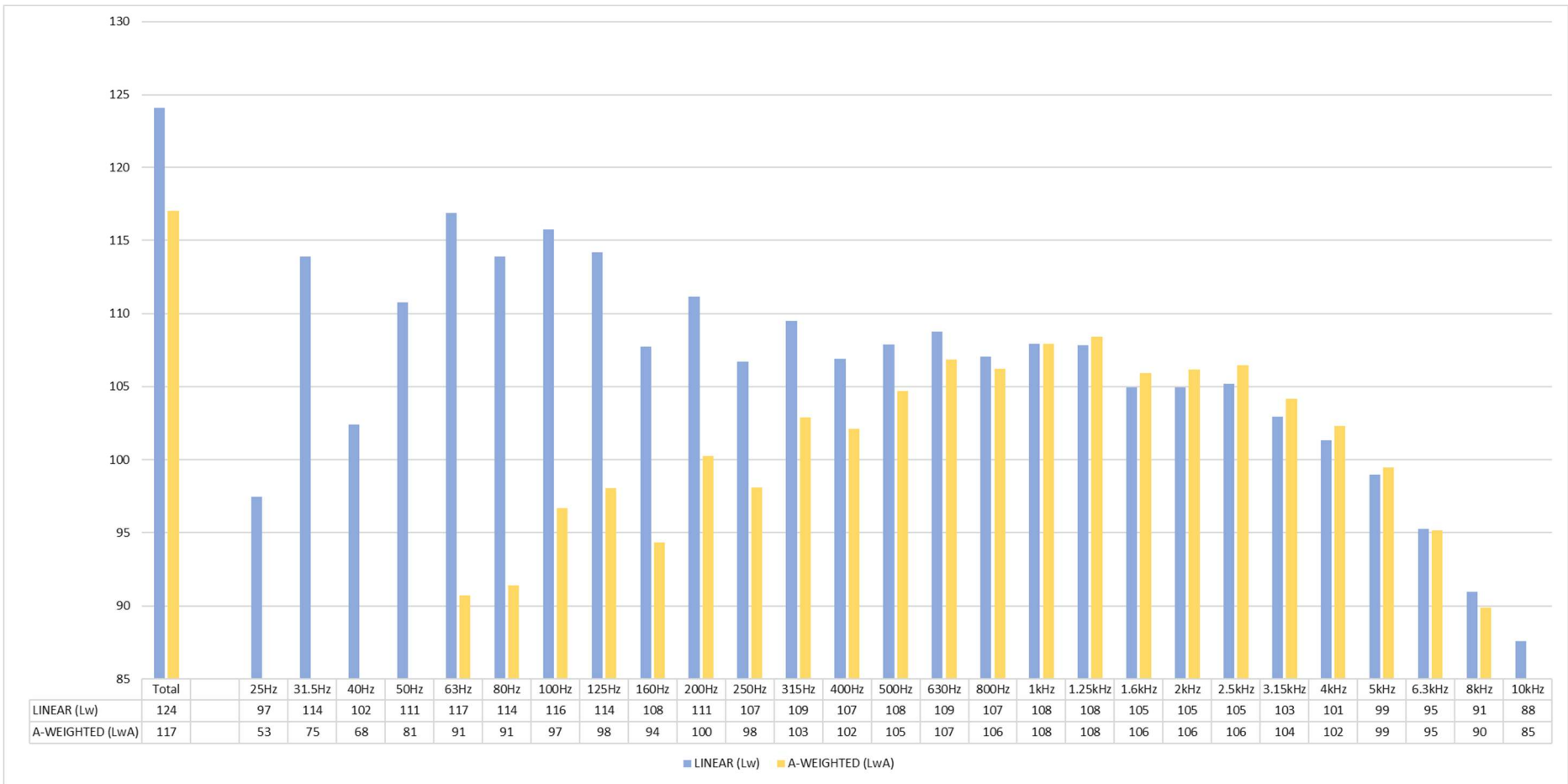


Figure 92: DT804 Stationary

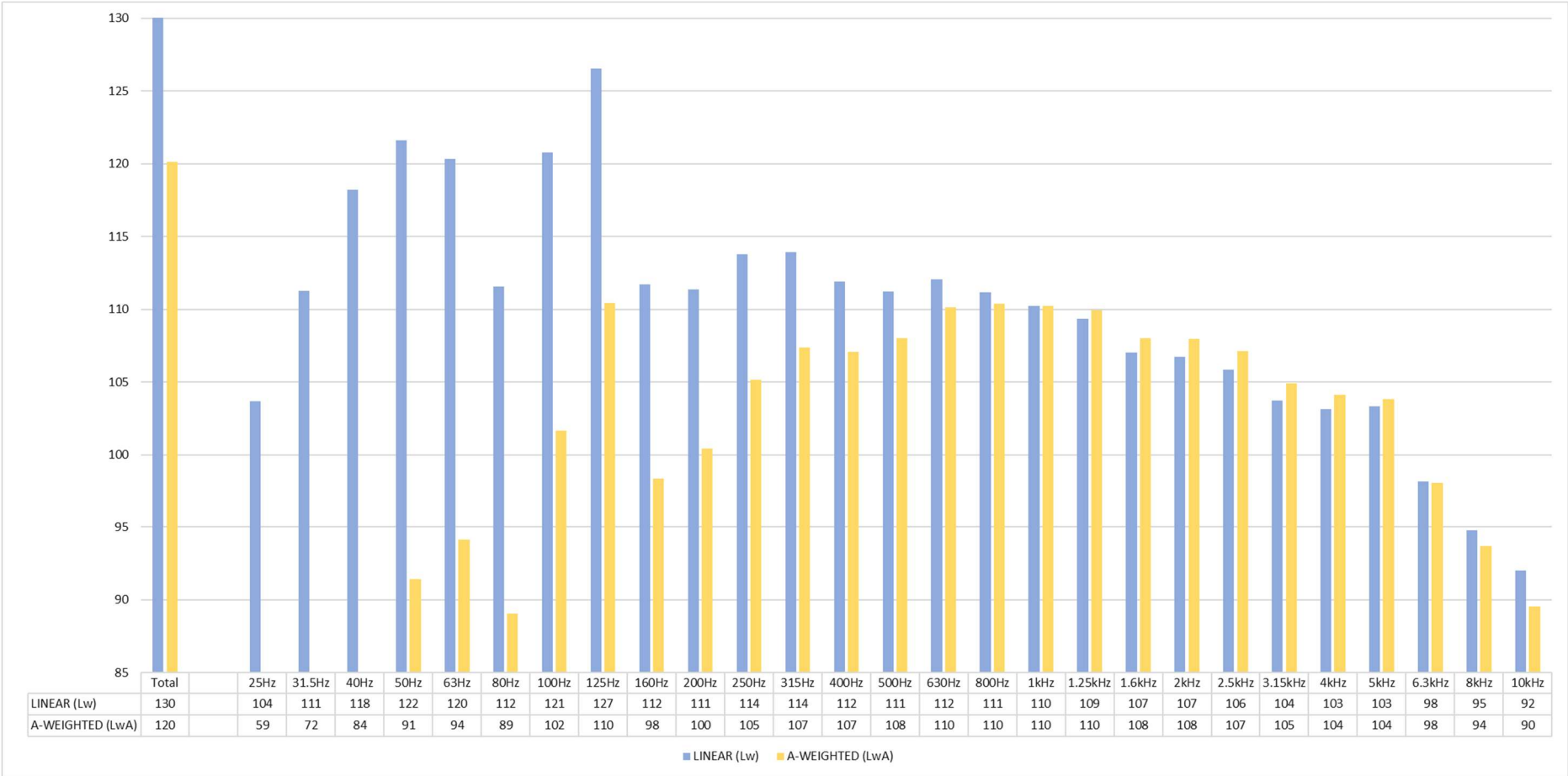


Figure 93: DT804 Dynamic Uphill

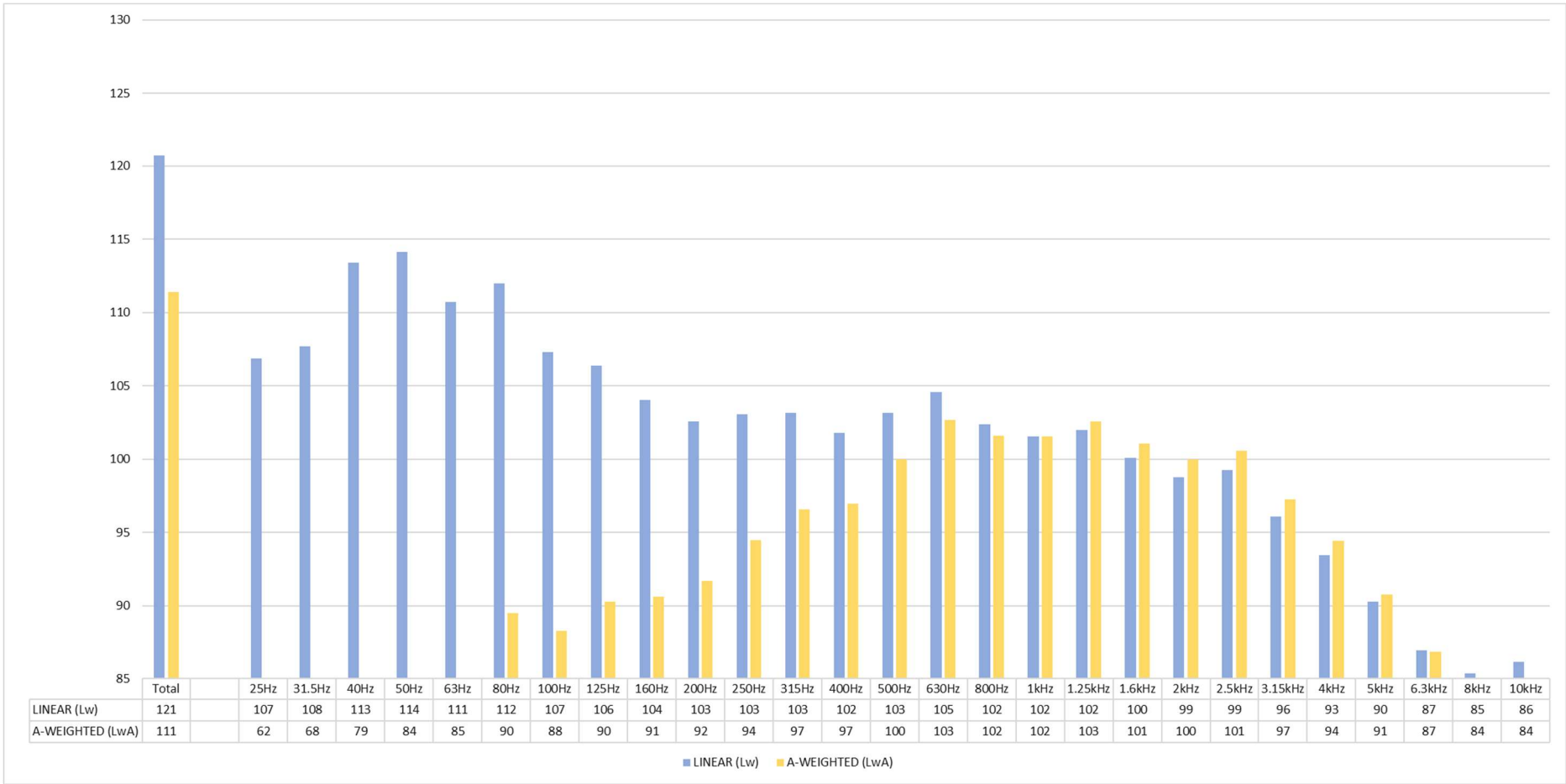


Figure 94: DT804 Dynamic Downhill

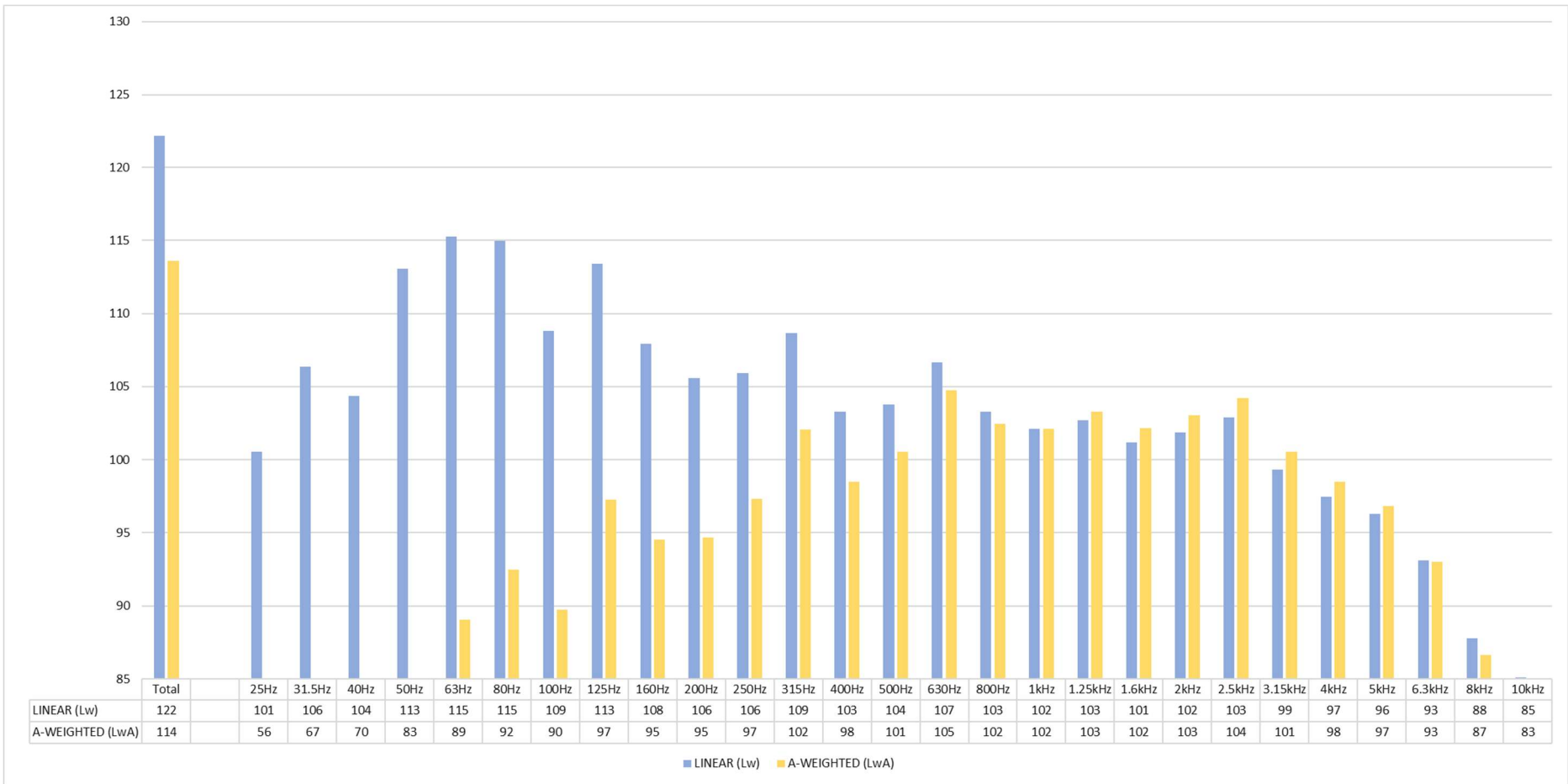


Figure 95: DT805 Stationary

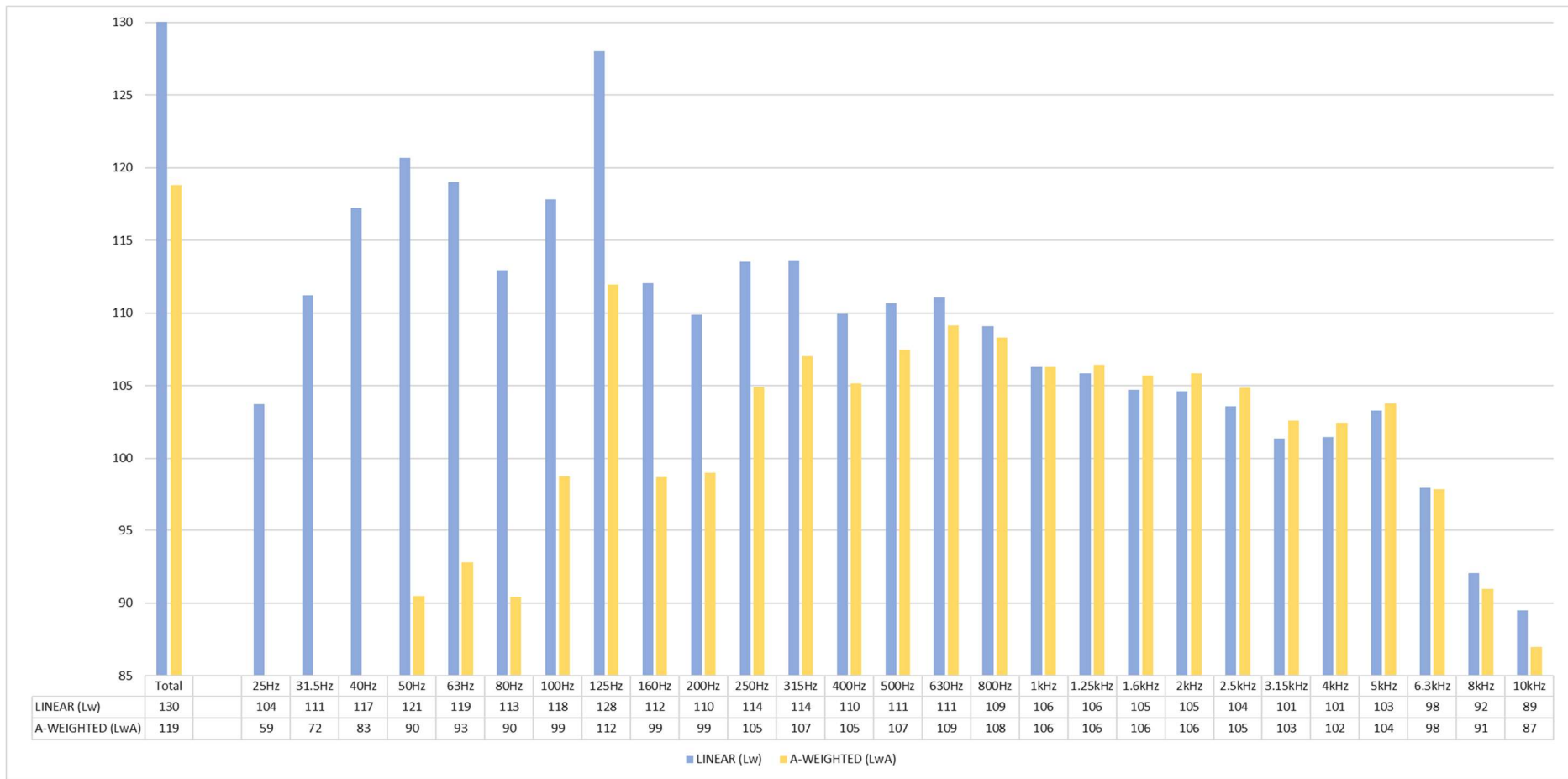


Figure 96: DT805 Dynamic Uphill

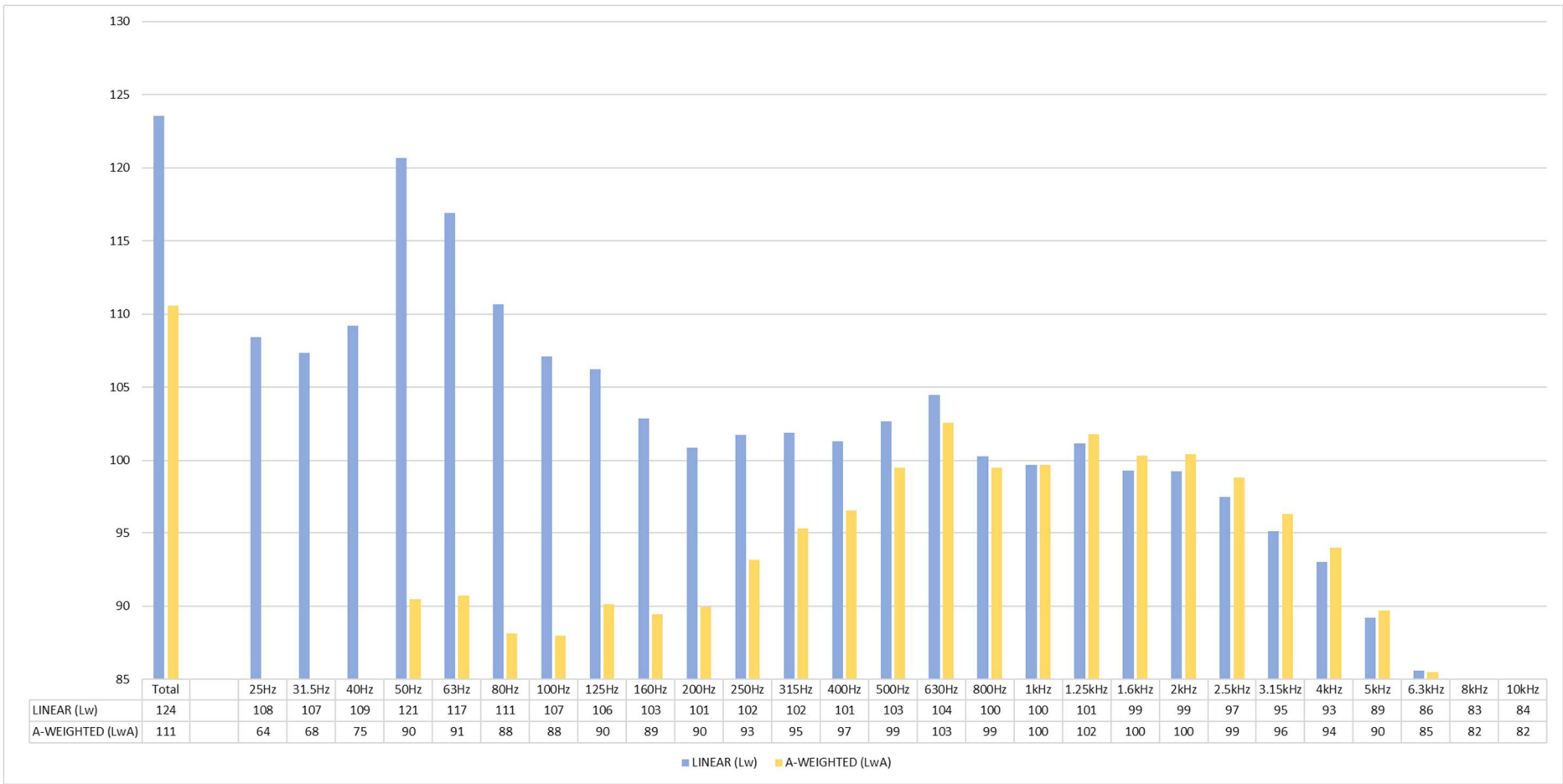


Figure 97: DT805 Dynamic Downhill

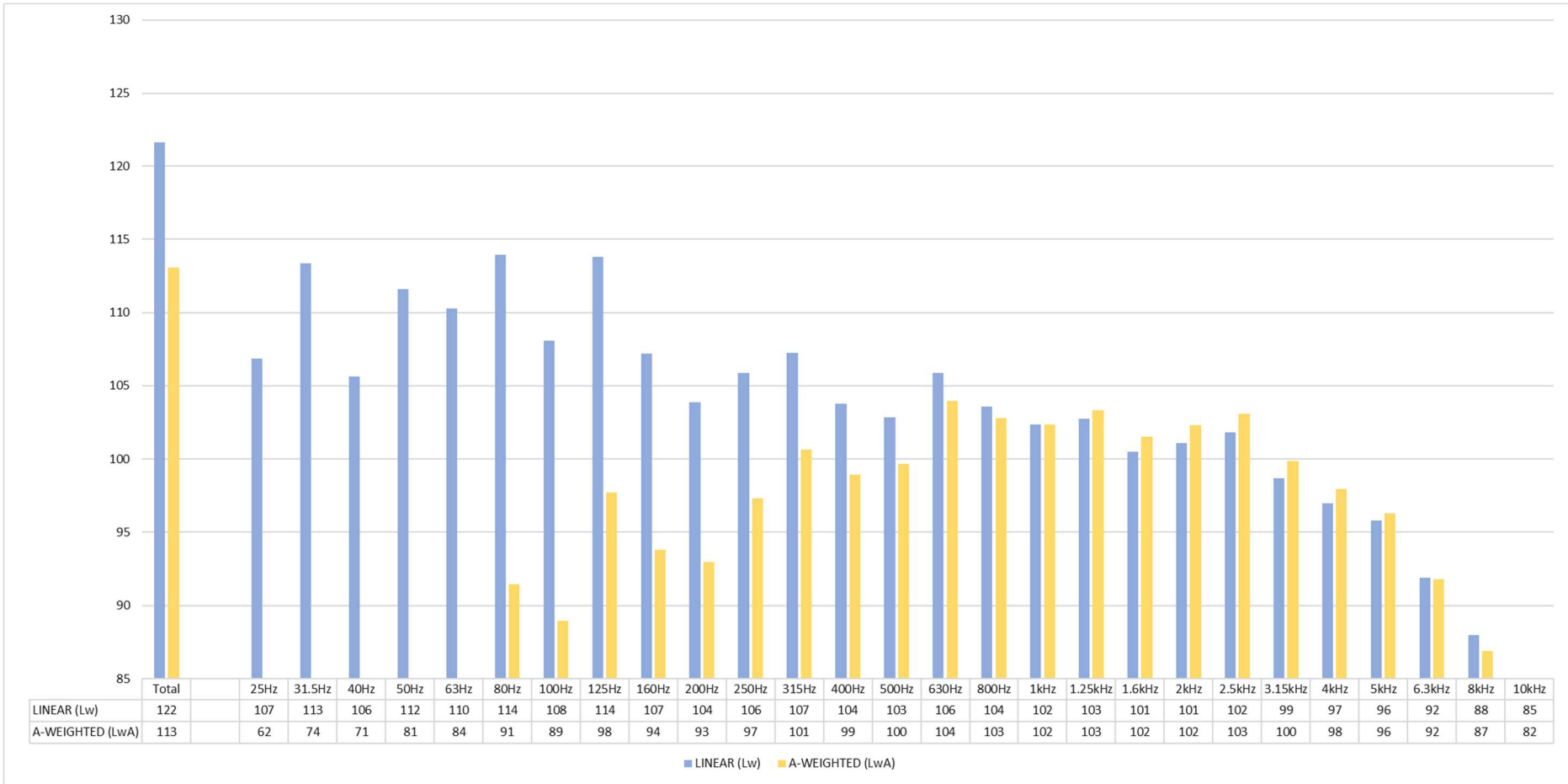


Figure 98: DT806 Stationary

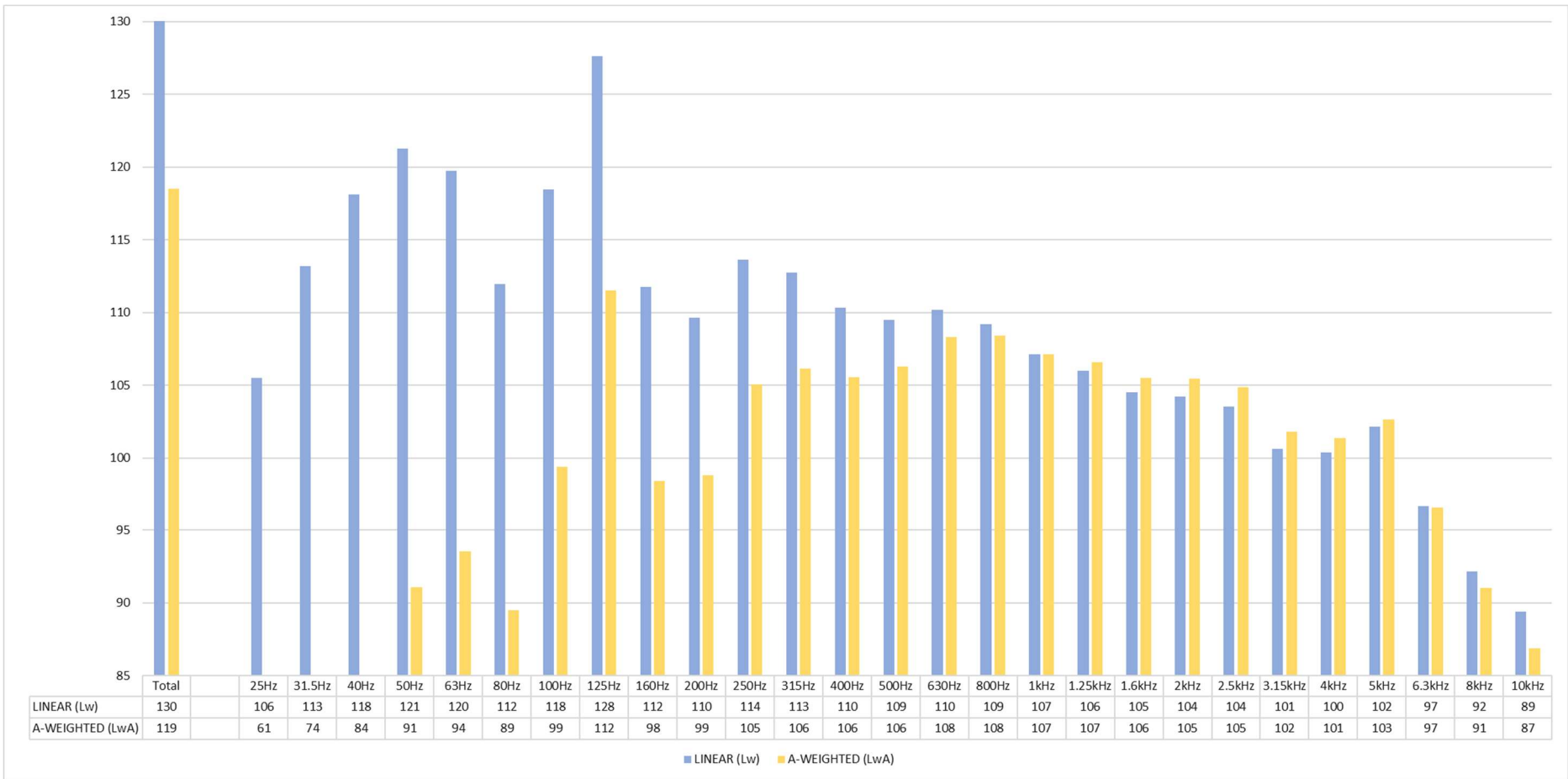


Figure 99: DT806 Dynamic Uphill

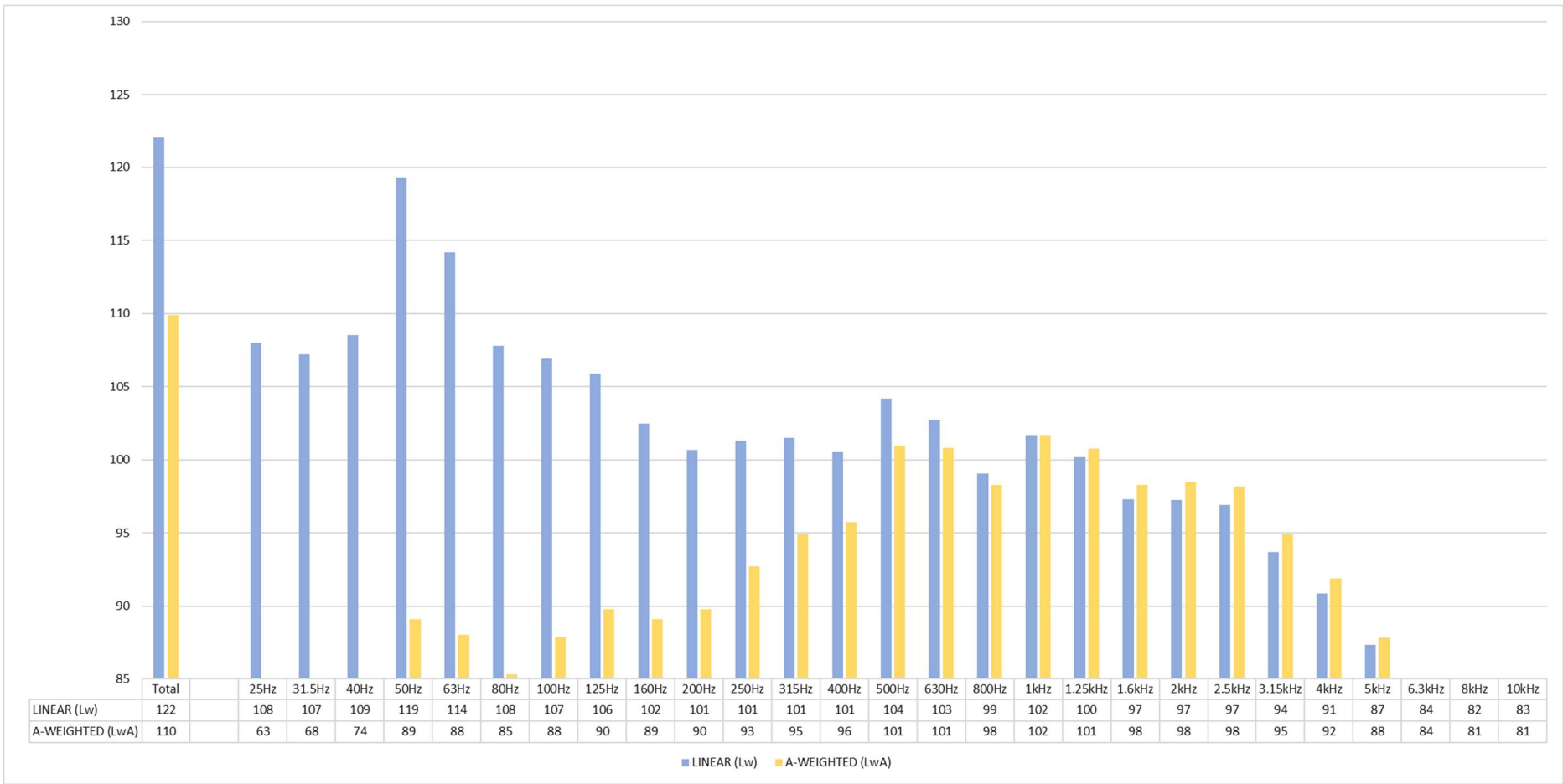


Figure I00: DT806 Dynamic Downhill