Table A.1: Application and interpretation of the generic vibration criterion (VC) curves (as shown in Figure A.1)

Criterion Curve (see Figure 1)	Max Level (1) micro-in/sec (dB)	Detail Size (2) Microns	Description of Use
Workshop (ISO)	32000 (90)	N/A	Distinctly feelable vibration. Appropriate to workshops and nonsensitive areas.
Office (ISO)	16000 (84)	N/A	Feelable vibration. Appropriate to offices and nonsensitive areas.
Residential Day (ISO)	8000 (78)	75	Barely feelable vibration. Appropriate to sleep areas in most instances. Probably adequate for computer equipment, probe test equipment and low-power (to 20X) microscopes.
Op. Theatre (ISO)	4000 (72)	25	Vibration not feelable. Suitable for sensitive sleep areas. Suitable in most instances for microscopes to 100X and for other equipment of low sensitivity.
VC-A	2000 (66)	8	Adequate in most instances for optical microscopes to 400X, microbalances, optical balances, proximity and projection aligners, etc.
VC-B	1000 (60)	3	An appropriate standard for optical microscopes to 1000X, inspection and lithography equipment (including steppers) to 3 micron line widths.
VC-C	500 (54)	1	A good standard for most lithography and inspection equipment to 1 micron detail size.
VC-D	250 (48)	0.3	Suitable in most instances for the most demanding equipment including electron microscopes (TEMs and SEMs) and E-Beam systems, operating to the limits of their capability.
VC-E	125 (42)	0.1	A difficult criterion to achieve in most instances. Assumed to be adequate for the most demanding of sensitive systems including long path, laser-based, small target systems and other systems requiring extraordinary dynamic stability.

Notes:

(1) As measured in one-third octave bands of frequency over the frequency range 8 to 100 Hz. The dB scale is referenced to 1 micro-inch/sec.

(2) The detail size refers to the line widths for microelectronics fabrication, the particle (cell) size for medical and pharmaceutical research, etc. The values given take into account the observation that the vibration requirements of many items depend upon the detail size of the process.

The information given in this table is for guidance only. In most instances, it is recommended that the advice of someone knowledgeable about applications and vibration requirements of the equipment and process be sought.

一般科技廠房精密設備振動規範

振動規範	最大振動值 微米/秒(rms)	加工尺寸 微米	建議適用環境描述
一般工業區 Workshop	800 (90dB)	無	明顯振動、適用於工廠與無振動管制區。
商業區 Office	400 (84dB)	無	有感振動、適用於辦公室與無振動管制區。
住宅區 Residential Day	200 (78dB)	75	微感振動、適用於住宅區、電腦機房、一般檢測設備與多數 20 倍內之光學顯微鏡。
音樂廳或實驗室 Op. Theatre	100 (72dB)	25	無感振動、適用於實驗室、精密檢測設備與多數 100 倍內之光學顯微鏡
VC-A	50 (66dB)	8	適用於微量天平、光學天平、近接式和投射式調準器(aligner)與多數 400 倍內之光學顯微鏡等。
VC-B	25 (60dB)	3	適用於解折度為 3 微米之步進式檢驗機(Stepper)或平板印刷機與多數 1000 倍內之光學顯微鏡。
VC-C	12.5 (54dB)	1	適用於解折為 1 微米線寬之平板印刷機和檢驗機與大部分光電廠精密設備。
VC-D	6. (48dB)	0.3	適用於 TEMs、SEMs 等高要求之電子顯微鏡、E-Beam、Scanner 等系統與大部分晶圓廠精密設備。
VC-E	3 . (42dB)	0.1	適用於雷射路徑長、對準目標極小、特殊動態穩定需求的精密儀器與奈米級製程設備。為多數廠房環境難以達成的規準。

備註：

1. 以 1/3 倍頻譜(Octave Bands)分析頻寬 8-100Hz之振動值 (dB值的參考速度值為 10^{-6} in/sec)。

2. "加工尺寸"是參考精密電子製造業之線寬、醫學和藥學研究之粒子或細胞尺寸等，所列數值參考藥學研究和精密設備振動等等之觀察值。

3. 本表只對一般性精密設備的微振動需求作建議,如果精密設備已有微振動規範，當以精密設備微振動規範為依據。

Figure A.1. Generic Vibration Criterion (VC) Curves for vibration-sensitive equipment - Showing also the ISO Guidelines for People in Buildings (see Table A.1 for description of equipment and uses.)