Room acoustical parameters for concert halls

Parameters suggested as international standard, e.g. ISO 3382-1

Subjective listener aspect	Acoustic quality	Single number frequency averaging (Hz)	Just Noticeable Difference (JND)	Typical range*
Subjective level of sound	Sound Strength, G, in dB	500 to 1000	1 dB	-2 dB; +10 dB
Perceived reverberance	Early Decay Time, EDT, in s	500 to 1000	Rel. 5%	1.0s; 3.0s
Perceived clarity of sound	Clarity, C_{80}, in dB Definition, D_{50} Centre Time, T_s, in ms	500 to 1000 500 to 1000 500 to 1000	1dB 0.05 10ms	-5 dB; +5 dB 0.3; 0.7 60 ms; 260 ms
Apparent Source Width, ASW	Early Lateral Energy Fraction LF or LFC	125 to 1000	0.05	0.05; 0.35
Listeners Envelopement	Late Lateral Sound Level, LG** in dB	125 to 1000	Not known	-14 dB; +1 dB
Ensemble conditions***	Early Support, ST_{Early} (dB)	250 to 2000	Not known	-24 dB; -8dB
Perceived reverberance***	Late Support, ST_{Late} (dB)	250 to 2000	Not known	-24dB; -10dB

* Typical range is for averaged values in single positions in auditorium of non-occupied concert– and multi-purpose halls up to 25000 m^3 .

** Current AKUTEK research use G_{late} instead og LG to describe Listeners Envelopment, agreeing with Beranek's conclusion (2008): " It must be concluded that total late energy is a better component of LEV than late lateral energy. This finding is confirmed in the study by Soulodre et al." (Section 8 in Concert Hall Acoustics 2008)

*** Performers listener aspect, on orchestra platform. See also Stage Acoustics.