$V_{rms} = \sqrt{\frac{RT}{M}}$,

where V_{rms} - RMS velocity of the gas, T- absolute temperature of the gas, M - molar mass of the gas, R- universal gas constant.

So average molar kinetic energy of the gas

$E=\frac{1}{2} MV^2_{rms} =\frac{1}{2} RT$

This equation reveals that molar KE is independent of the nature of the gas. It only depends on temperature as ideal behavior is concerned. So both He(g) and F_2(g) will have same average KE = 5850 J/mol under the same condition of temperature.

So for $F_{2(g)}$

$\frac{1}{2} M_{F2(g)}V^2_{rmsF2} = 5850$

Taking atomic mass of F = 19 g/mol = $19 \cdot 10^{-3}$ kg/mol

$V^2_{rmsF2(g)} = \frac{5850 \cdot 2}{2 \cdot 19 \cdot 10^{-3}}$

$V_{rmsF2(g)} = \sqrt{\frac{5850000}{19}} = 554.9\ ms^{-2}$