$$\langle \ell_3 \rangle = \int d\mathbf{L}\ \ell_3\ \exp\left(18\beta_3 \langle \ell_3 \rangle \mathrm{Re}\ell_3\right) \Big/ \int d\mathbf{L}\ \exp\left(18\beta_3 \langle \ell_3 \rangle \mathrm{Re}\ell_3\right)$$