Example:

$a_1 = 0.8405$ (m^3/s)

$f_{nPDP} = 12.58$ r/s

$p_{out} = 99.950$ kPa

$p_{in} = 98.575$ kPa = 98575 Pa = 98575 kg/(m·s^2)

$a_0 = 0.056$ (m^3/r)

$R = 8.314472$ J/(mol·K) = 8.314472 (m^2·kg)/(s^2·mol·K)

$T_{in} = 323.5$ K

$$V_{rev} = \frac{0.8405}{12.58} \cdot \sqrt{\frac{99.950 - 98.575}{99.950}} + 0.056$$

$V_{rev} = 0.06383$ m^3/r

$$\dot{n} = 12.58 \cdot \frac{98575 \cdot 0.06383}{8.314472 \cdot 323.5}$$

$\dot{n} = 29.428$ mol/s

(b) <u>SSV molar flow rate</u>. Based on the C_d versus $Re^{\#}$ equation you determined according to § 1065.640, calculate SSV molar flow rate, $\dot{n}$ during an emission test as follows:

$$\dot{n} = C_d \cdot C_f \cdot \frac{A_t \cdot p_{in}}{\sqrt{Z \cdot M_{mix} \cdot R \cdot T_{in}}}$$

Eq. 1065.642-3