



## HIDE 314 DRAIN COVER FLOW RATE GUIDE: HDC314 = 67.6L/min

### TECHNICAL EXPLANATION:

The flow rate through a slot drain is influenced by the slot's cross-sectional area and the hydraulic conditions, including the slope and roughness of the channel. In this estimation, we utilised standard flow rates for a known slot width and adjusted proportionally based on the given slot dimensions. For precise flow rate determination, it's recommended to perform detailed hydraulic calculations considering site-specific parameters or consult with a drainage engineer.

### HDC314 FLOW RATE:

Width of the slot (W) = 5mm  
Total slot length (L) = 1,256mm (4 x 314)  
Slot area (A) = W×L

#### 1. Cross-Sectional Area

The cross-sectional area of the slot can be calculated as:  $A = W \times L$   
 $A = 5\text{mm} \times 1,256\text{mm} = 6,280\text{mm}^2$

#### 2. Flow Velocity Estimation:

Using the proportional flow rate calculation from the reference slot system:  
We determined that the flow rate per meter of slot length for a **12.7 mm wide slot is approximately 136.6 L/min per meter.**

The width of the HIDE Drain Cover Slot (5mm) is **39.37%** of the reference width ( $5 \div 12.7 \approx 0.3937$ ). Therefore, we adjust the flow rate proportionally:

Flow rate per meter =  $136.6 \times 0.3937 \approx 53.8\text{L/min/m}$

#### 3. Total Flow Rate:

For a total slot length of 1,256mm (or 1.256m):

**TOTAL FLOW RATE =  $53.8\text{L/min/m} \times 1.256\text{m} \approx 67.6\text{L/min}$**

#### 4. Convert to Cubic Meters per Second

To express the flow rate in  $\text{m}^3/\text{s}$ :

$67.6\text{L/min} = 67.6 \times 10^{-3} \text{m}^3/\text{min} = 0.0676\text{m}^3/\text{min}$   
 $0.0676\text{m}^3/\text{min} \div 60 \text{s/min} \approx 0.001127\text{m}^3/\text{s}$

#### Guide Flow Rate:

For the 314mm Square HIDE Drain Cover with a 5mm wide slot, the estimated flow rate is approximately 67.6 L/min (0.001127 $\text{m}^3/\text{s}$ ) under typical hydraulic conditions.

#### Disclaimer:

This flow rate is a general guide and may vary significantly depending on installation-specific factors like slope (fall), water pressure, and hydraulic conditions. For exact performance, site-specific analysis or consultation with a drainage engineer is recommended.

