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EXPERIMENTAL BLOCKED AREA CALCULATION (CONDUCTANCE-BASED)
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Constants:
Resistivity (rho)       = 8.96 Ohm·cm
Channel Length (l)      = 0.0075 cm
Open Area (A)           = 4.12500e-05 cm²
Open Resistance (R1)    = 833.33 Ohm

Step-by-step Calculations:
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--- Pressure: 0.0 bar ---
Conductance G       = 1.200 mS
G in S              = 0.00120 S
R1′                 = 1 / G = 833.33 Ohm
ΔR                  = R1′ - R1 = 0.00 Ohm
1 / A′              = 1/A + ΔR / (rho * l) = 2.42e+04
A′                  = 1 / (1/A′) = 4.12500e-05 cm²
Blocked %           = (1 - A′ / A) * 100 = 0.00 %

--- Pressure: 0.4 bar ---
Conductance G       = 0.540 mS
G in S              = 0.00054 S
R1′                 = 1 / G = 1851.85 Ohm
ΔR                  = R1′ - R1 = 1018.52 Ohm
1 / A′              = 1/A + ΔR / (rho * l) = 3.94e+04
A′                  = 1 / (1/A′) = 2.53814e-05 cm²
Blocked %           = (1 - A′ / A) * 100 = 38.47 %

--- Pressure: 0.6 bar ---
Conductance G       = 0.430 mS
G in S              = 0.00043 S
R1′                 = 1 / G = 2325.58 Ohm
ΔR                  = R1′ - R1 = 1492.25 Ohm
1 / A′              = 1/A + ΔR / (rho * l) = 4.64e+04
A′                  = 1 / (1/A′) = 2.15292e-05 cm²
Blocked %           = (1 - A′ / A) * 100 = 47.81 %

--- Pressure: 0.8 bar ---
Conductance G       = 0.280 mS
G in S              = 0.00028 S
R1′                 = 1 / G = 3571.43 Ohm
ΔR                  = R1′ - R1 = 2738.10 Ohm
1 / A′              = 1/A + ΔR / (rho * l) = 6.50e+04
A′                  = 1 / (1/A′) = 1.53875e-05 cm²
Blocked %           = (1 - A′ / A) * 100 = 62.70 %

--- Pressure: 1.2 bar ---
Conductance G       = 0.160 mS
G in S              = 0.00016 S
R1′                 = 1 / G = 6250.00 Ohm
ΔR                  = R1′ - R1 = 5416.67 Ohm
1 / A′              = 1/A + ΔR / (rho * l) = 1.05e+05
A′                  = 1 / (1/A′) = 9.53765e-06 cm²
Blocked %           = (1 - A′ / A) * 100 = 76.88 %

Final Results:
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Pressure 0.0 bar → Blocked Area = 0.00 %
Pressure 0.4 bar → Blocked Area = 38.47 %
Pressure 0.6 bar → Blocked Area = 47.81 %
Pressure 0.8 bar → Blocked Area = 62.70 %
Pressure 1.2 bar → Blocked Area = 76.88 %
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