*Sho-Rate™ 1350G & 1355G Series*

QuickShip
Ships in 5 days

DATA SHEET

Variable Area Flowmeters

# Sho-Rate Models 1350G & 1355G

## Low Flow Glass Tube Flowmeters

The Brooks® Sho-Rate™ Series glass tube variable area flow meter has been the industry standard glass tube variable area meter for decades. This glass tube meter is ideal for a variety of gas and liquid applications. These meters are particularly suited for purge applications. The base configuration uses a borosilicate glass tube installed in an aluminum frame with 316SS end blocks, adaptors, and valve. Additional material options, valve options, and flow controllers are available to provide the appropriate configuration for a wide variety of applications.

### Features

- Standard direct read scales on tube for all fluids and fluid conditions (user selected)
- Standard millimeter scales with flow curves for all fluids and fluid conditions (user selected)
- Scale length (approximate) 65mm, 150mm
- Magnifier built into front shield
- Flowmeter options:
  - Multiple fitting adapters for all world areas
  - No valve, cartridge valve and precision control valve
  - Inlet & outlet valves
  - Integral flow controller, upstream & downstream
  - Multiple connection fittings to fit all applications

View Models 1350G & 1355G Product Page


Threaded Jack Screw
• Tubes sealed on compression gasket

Metering Tubes
• Heavy-wall, precision bore
• Borosilicate glass
• Removeable without disconnnecting instrument

Self Aligning Blocks
• Allows for easier tube alignment and replacement

Clear Polycarbonate Faceshield
• Built-in magnifier for easier float and scale reading

Interchangeable Tubes and Floats with Direct Reading (DR) Scales on the Tube
• Allows users to change ranges as the application dictates
• DR Scale on Tube is determined by the user; based on specific application needs
• Eliminates reading errors introduced by detached scales; resulting in a more accurate indication of flow

Integral Float Stops
• Prevent loss of float during tube removal

Rugged, Single Piece Frame Construction

Optional Valves for Inlet or Outlet
• Cartridge III Valves
• NRS™ (Non-Rising Stem)
• Integral Flow Controllers

## PERFORMANCE

| | 1350G | 1355G |
|---|---|---|
| Accuracy | ±5% at reference conditions* | ± 3% at reference conditions* |
| Repeatability | 0.25% F.S. | |
| Pressure/Temperature | 200 psig (33°F - 250°F) / 13.8 bar (1°C-121°C) | |
| Materials of Construction | Borosilicate glass, Brass, Aluminum, 316 Stainless Steel, Clear Polycarbonate, Milk White Polycarbonate, Teflon® | |
| End Block Options | Stainless Steel and Brass | |
| Elastomer Seals | Viton® fluoroelastomers, Teflon®, Buna, Kalrez® perfluoroelastomers | |
| Float Materials | Glass, Sapphire, Stainless Steel, Carboloy®, Tantalum | |
| Connection Materials | Stainless Steel | |
| Connection Options | 1/8″ NPT (w/wo locknuts)<br>1/4″ NPT (w/wo locknuts)<br>1/8″ Compression (w/wo locknuts)<br>1/4″ Compression (w/wo locknuts)<br>6 mm Compression (w/wo locknuts)<br>1/4″ RC (w/wo locknuts)<br>3/8″ RC (w/wo locknuts)<br>1/4″ VCR®<br>1/4″ ID Hose<br>Swagelok® Converters | |
| Dimensions | See Dimension Drawings | |
| Alarm Availability | (coming soon) | |
| Valve Options | Cartridge III Valve and NRS™ | |
| Valve Materials | Stainless Steel | |
| Flow Controller | Yes | |
| Certifications | International Calibration Certificate (ICC)<br>CRN<br>Pressure Equipment Directive (97/23/EC)<br>RoHS (II)<br>REACH (coming soon)<br>Materials (2.2) | |

* Reference conditions apply to air or water at 14.7 psia and 70 Degrees F/1.01 Bar and 21.1 Degrees C.

# Product Specifications - Capacities; 1350G, Rib Guided, Spherical Floats

## Capacities - Rib Guide Tubes, Spherical Hoats for use with 1350G Series Only

| Meter Size | Tube No. | Float Material | Water | | Air | |
|---|---|---|---|---|---|---|
| | | | GPH | LPH | SCFH | NLPH |
| 2 | R-2-65-A G | Glass | 0.010 | 0.041 | 0.12 | 3.2 |
| | | Sapphire | 0.021 | 0.079 | 0.19 | 5.0 |
| | | Stainless Steel | 0.049 | 0.18 | 0.37 | 9.8 |
| | | Carboloy | 0.10 | 0.36 | 0.65 | 17 |
| | | Tantalum | 0.10 | 0.40 | 0.71 | 18 |
| | R-2-65-B G | Glass | 0.014 | 0.06 | 0.16 | 4.4 |
| | | Sapphire | 0.028 | 0.10 | 0.25 | 6.7 |
| | | Stainless Steel | 0.07 | 0.25 | 0.48 | 12 |
| | | Carboloy | 0.12 | 0.48 | 0.80 | 21 |
| | | Tantalum | 0.14 | 0.53 | 0.87 | 22 |
| | R-2-65-C G | Glass | 0.12 | 0.47 | 0.99 | 26 |
| | | Sapphire | 0.22 | 0.83 | 1.3 | 35 |
| | | Stainless Steel | 0.41 | 1.5 | 2.1 | 55 |
| | | Carboloy | 0.65 | 2.4 | 3.1 | 81 |
| | | Tantalum | 0.70 | 2.6 | 3.3 | 87 |
| | R-2-65-D G | Glass | 0.68 | 2.5 | 3.9 | 100 |
| | | Sapphire | 0.99 | 3.7 | 5.1 | 130 |
| | | Stainless Steel | 1.6 | 6.3 | 7.9 | 200 |
| | | Carboloy | 2.5 | 9.5 | 11 | 290 |
| | | Tantalum | 2.7 | 10.0 | 12 | 310 |
| 6 | R-6-65-A G | Glass | 2.2 | 8.5 | 13 | 340 |
| | | Sapphire | 3.3 | 12 | 17 | 440 |
| | | Stainless Steel | 5.6 | 21 | 25 | 660 |
| | | Carboloy | 8.3 | 31 | 36 | 940 |
| | | Tantalum | 8.8 | 33 | 38 | 1000 |
| | R-6-65-B G | Glass | 8.7 | 33 | 46 | 1200 |
| | | Sapphire | 12 | 47 | 59 | 1500 |
| | | Stainless Steel | 20 | 76 | 86 | 2200 |
| | | Carboloy | 29 | 100 | 110 | 3100 |
| | | Tantalum | 30 | 110 | 120 | 3300 |

Air flows are at 14.7 psia and 70 Degrees F/1.01 Bar and 21.1 Degrees C

# Models 1350G/1355G Tube and Float Code; Decaled Scale Option, 7th, 8th & 9th Digits

### Seventh Digit in Model Code, for Scale Configuration

| Code | Model 1350 Tube | Model 1355 Tube |
|---|---|---|
| A | | R-2-15-A G |
| B | | R-2-15-B G |
| C | | R-2-15-C G |
| D | | R-2-15-D G |
| F | | R-6-15-B G |
| G | R-2-65-A G | R-2-15-AAAA G |
| H | R-2-65-B G | |
| J | R-2-65-C G | |
| K | R-2-65-D G | |
| L | R-6-65-A G | |
| M | R-6-65-B G | |
| N | No Tube | No Tube |

### Eighth and Ninth Digit in Model Code, for Scale Configuration

| Meter Accuracy | Float Material | Decal Scale Inscription | | | |
|---|---|---|---|---|---|
| | | MM Scale | Linear Scale | Custom Decal | Percent Scale |
| Standard (1350-10%) (1355-5%) | Glass | 1A | 2A | 3A | 4A |
| | Stainless Steel | 1B | 2B | 3B | 4B |
| | Sapphire | 1C | 2C | 3C | 4C |
| | Carboloy | 1D | 2D | 3D | 4D |
| | Tantalum | 1E | 2E | 3E | 4E |
| Calibrated (1350-5%) (1355-3% | Glass | 1G | 2G | 3G | 4G |
| | Stainless Steel | 1H | 2H | 3H | 4H |
| | Sapphire | 1J | 2J | 3J | 4J |
| | Carboloy | 1K | 2K | 3K | 4K |
| | Tantalum | 1L | 2L | 3L | 4L |

*Note: Code for No Float/No Scale = "ZZ"

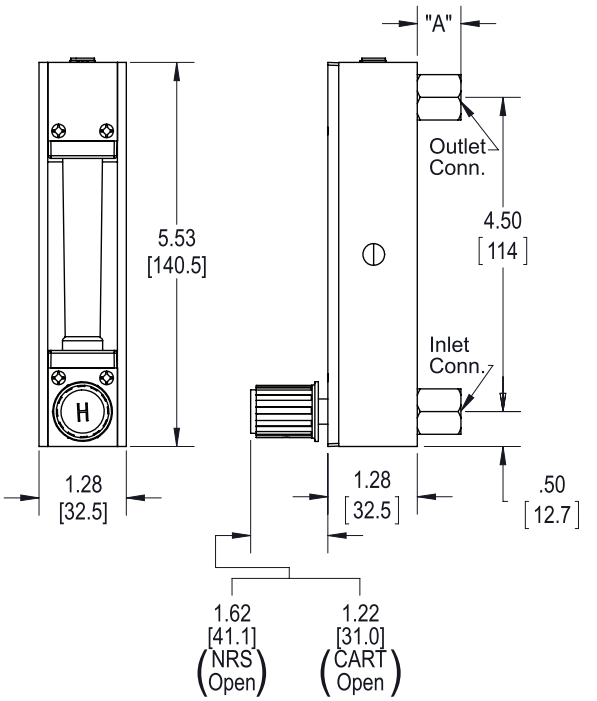
Capacities - Rib Guide Tubes, Spherical Floats for use with 1355G Series Only

| Meter Size | Tube No. | Float Material | Maximum Flow Rate* | |
|---|---|---|---|---|
| | | | Water (CC/Min) | Air |
| 2 | R-2-15-AAAA G | Glass | 0.59 | 50 SCC/M |
| | | Sapphire | 1.1 | 79 SCC/M |
| | | Stainless Steel | 2.6 | 150 SCC/M |
| | | Carboloy | 5.2 | 280 SCC/M |
| | | Tantalum | 5.8 | 310 SCC/M |
| | R-2-15-D G | Glass | 5.5 | 370 SCC/M |
| | | Sapphire | 10 | 520 SCC/M |
| | | Stainless Steel | 20 | 830 SCC/M |
| | | Carboloy | 34 | 1200 SCC/M |
| | | Tantalum | 36 | 1300 SCC/M |
| | R-2-15-A G | Glass | 17 | 0.82 SLPM |
| | | Sapphire | 26 | 1.0 SLPM |
| | | Stainless Steel | 46 | 1.6 SLPM |
| | | Carboloy | 70 | 2.4 SLPM |
| | | Tantalum | 75 | 2.5 SLPM |
| | R-2-15-B G | Glass | 53 | 2.3 SLPM |
| | | Sapphire | 80 | 3.0 SLPM |
| | | Stainless Steel | 130 | 4.6 SLPM |
| | | Carboloy | 200 | 6.7 SLPM |
| | | Tantalum | 210 | 7.1 SLPM |
| | R-2-15-C G | Glass | 90 | 4.0 SLPM |
| | | Sapphire | 130 | 5.2 SLPM |
| | | Stainless Steel | 220 | 7.9 SLPM |
| | | Carboloy | 340 | 11 SLPM |
| | | Tantalum | 360 | 11 SLPM |
| 6 | R-6-15-A G | Glass | 210 | 9.5 SLPM |
| | | Sapphire | 320 | 12 SLPM |
| | | Stainless Steel | 540 | 18 SLPM |
| | | Carboloy | 790 | 25 SLPM |
| | | Tantalum | 840 | 26 SLPM |
| | R-6-15-B G | Glass | 560 | 23 SLPM |
| | | Sapphire | 820 | 29 SLPM |
| | | Stainless Steel | 1300 | 43 SLPM |
| | | Carboloy | 1900 | 60 SLPM |
| | | Tantalum | 2000 | 63 SLPM |

Air flows are at 14.7 psia and 70 Degrees F/1.01 Bar and 21.1 Degrees C

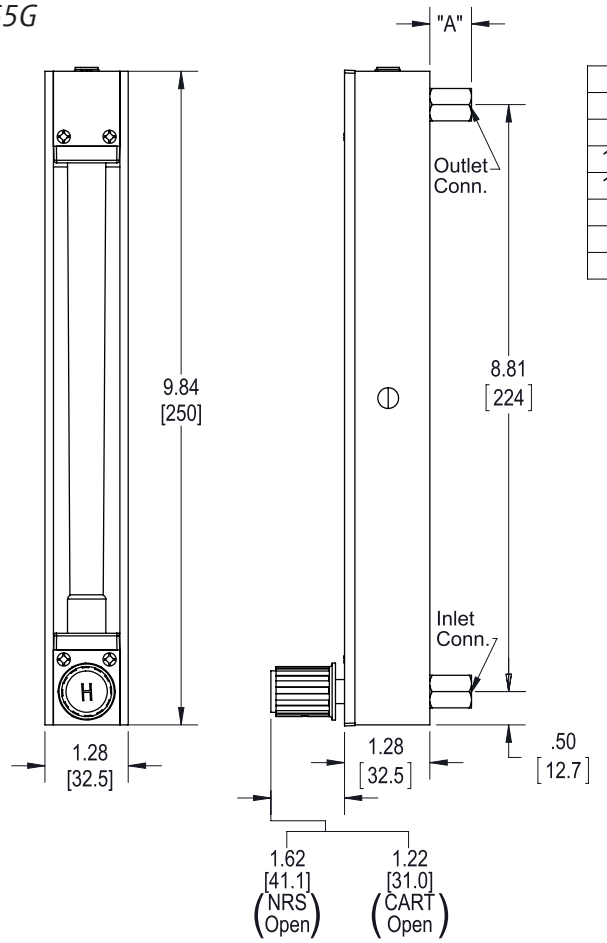
# Product Dimensions - Model 1350G and 1355G

*Model 1350G*



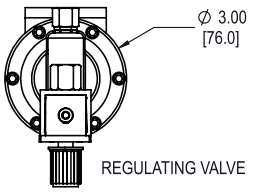

| Dimension "A" Connection Adapter | |
|---|---|
| 1/8" NPT | .625 [15.9] |
| 1/4" NPT | .625 [15.9] |
| 1/8" Compression | 1.59 [40.3] |
| 1/4" Compression | 1.78 [45.1] |
| 1/4" ID Hose | .72 [18.3] |
| 1/4" Rc | .895 [22.7] |
| 3/8" Rc | .895 [22.7] |

*Model 1355G*

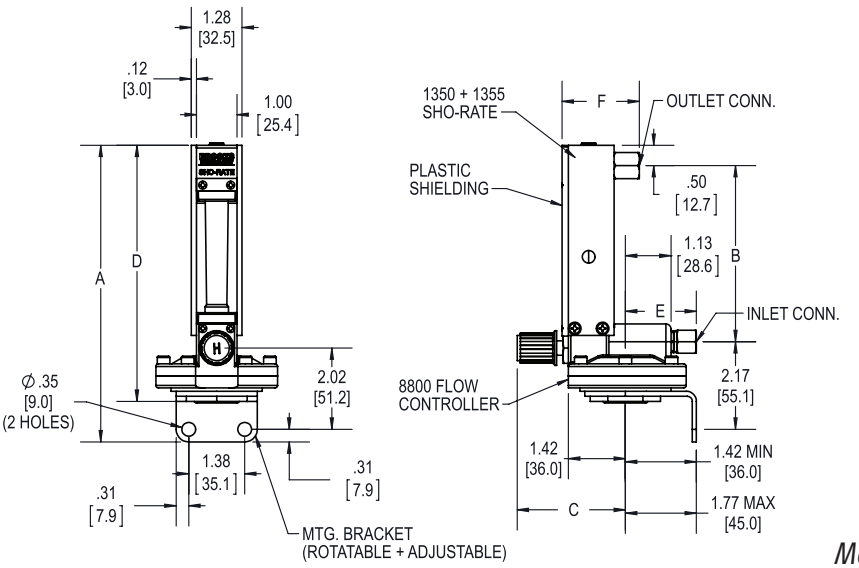



| Dimension "A" Connection Adapter | |
|---|---|
| 1/8" NPT | .625 [15.9] |
| 1/4" NPT | .625 [15.9] |
| 1/8" Compression | 1.59 [40.3] |
| 1/4" Compression | 1.78 [45.1] |
| 1/4" ID Hose | .72 [18.3] |
| 1/4" Rc | .895 [22.7] |
| 3/8" Rc | .895 [22.7] |

# Product Dimensions - Model 1350G/1355G with Flow Controller



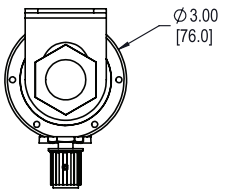

| MODEL NO | SCALE LENGTH | A | A | B | B | C OPEN | C OPEN | C CLSD | C CLSD | D | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MM | INCH | MM | INCH | MM | INCH | MM | INCH | MM | INCH | MM |
| 1350 | 65 | 7.31 | 185.7 | 4.34 | 110.3 | 2.79 | 70.8 | 2.65 | 67.2 | 6.38 | 162.0 |
| 1355 | 150 | 11.72 | 297.7 | 8.75 | 222.2 | 2.79 | 70.8 | 2.65 | 67.2 | 10.78 | 273.8 |



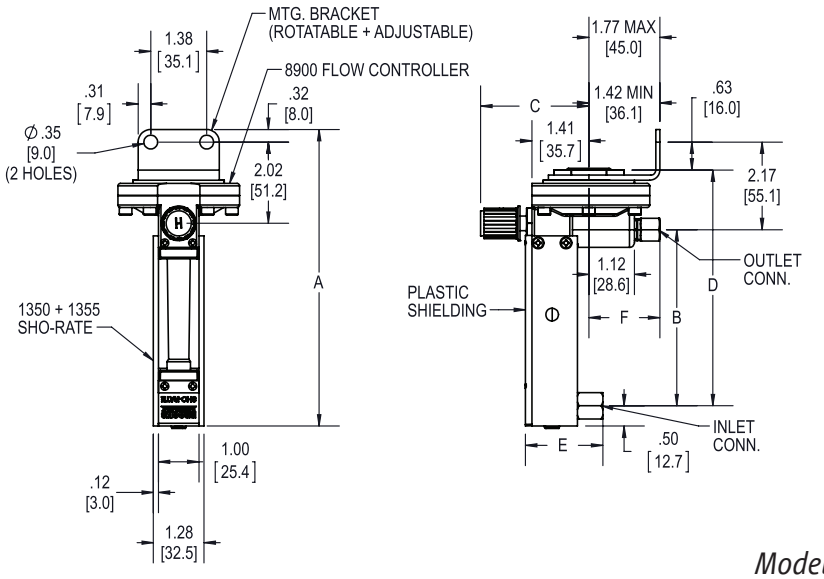

| CONN. SIZE | INLET CONN. E | INLET CONN. E | OUTLET CONN. F | OUTLET CONN. F |
|---|---|---|---|---|
| | INCH | MM | INCH | MM |
| 1/8 NPT | 1.85 | 46.9 | 1.91 | 48.4 |
| 1/4 NPT | 1.13 | 28.6 | 1.91 | 48.4 |
| 1/8 COMP. | 2.19 | 55.6 | 2.87 | 72.8 |
| 1/4 COMP. | 2.28 | 57.8 | 3.06 | 77.6 |
| 1/4 I.D. HOSE | 2.44 | 61.9 | 2.00 | 50.8 |
| 1/4 VCR (M) | N/A | N/A | 2.19 | 55.6 |
| 1/4 Rc | 2.10 | 53.3 | 2.18 | 55.3 |
| 3/8 Rc | 2.60 | 66.1 | 2.18 | 55.3 |

*Model 1350G/1355G with Model 8800 Flow Controller on Inlet*

---




| MODEL NO | SCALE LENGTH | A | A | B | B | C OPEN | C OPEN | C CLSD | C CLSD | D | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MM | INCH | MM | INCH | MM | INCH | MM | INCH | MM | INCH | MM |
| 1350 | 65 | 7.31 | 185.7 | 4.34 | 110.3 | 2.79 | 70.8 | 2.65 | 67.2 | 6.38 | 162.0 |
| 1355 | 150 | 11.72 | 297.7 | 8.75 | 222.2 | 2.79 | 70.8 | 2.65 | 67.2 | 10.78 | 273.8 |




| CONN. SIZE | INLET CONN. E | INLET CONN. E | OUTLET CONN. F | OUTLET CONN. F |
|---|---|---|---|---|
| | INCH | MM | INCH | MM |
| 1/8 NPT | 1.91 | 48.4 | 1.85 | 46.9 |
| 1/4 NPT | 1.91 | 48.4 | 1.13 | 28.6 |
| 1/8 COMP. | 2.87 | 72.8 | 2.19 | 55.6 |
| 1/4 COMP. | 3.06 | 77.6 | 2.28 | 57.8 |
| 1/4 I.D. HOSE | 2.00 | 50.8 | 2.44 | 61.9 |
| 1/4 VCR (M) | 2.19 | 55.6 | N/A | N/A |
| 1/4 Rc | 2.18 | 55.3 | 2.10 | 53.3 |
| 3/8 Rc | 2.18 | 55.3 | 2.60 | 66.1 |

*Model 1350G/1355G with Model 8900 Flow Controller on Outlet*

# Ordering Information - Reference Model Code Tables

1. Model
2. Size, connections, type
3. Quantity required
4. Minimum, normal and maximum operating temperature
5. Minimum, normal and maximum operating pressure (inlet and outlet)
6. Minimum, normal and maximum flow rate
7. Materials of construction
   a. End fittings
   b. Side plates
   c. Bezel
   d. Elastomers
8. Fluid
9. Fluid specific gravity
10. Fluid viscosity
11. Unusual system conditions (For ranges and pressure drops other than those listed, consult factory).
12. Optional equipment
    a. Valve type and location
    b. Flow controller and type

| Code Description | Code Option | Option Description[1] | | |
|---|---|---|---|---|
| I. Basic Model Number | 1350 | 65mm Sho-Rate Size 1-6 Flow Indicator | | |
| | 1355 | 150mm Sho-Rate Size 1-6 Flow Indicator | | |
| II. Model Revision Level | G | Revision G | | |
| III. End Block Material | A[1] | 316 stainless steel | | |
| | B[1] | Brass | | |
| IV. Tube | | 1350 | 1355 | |
| | A[1] | - | R-2-15-A G | |
| | B[1] | - | R-2-15-B G | |
| | C[1] | - | R-2-15-C G | |
| | D[1] | - | R-2-15-D G | |
| | E[1] | - | R-6-15-A G | |
| | F[1] | - | R-6-15-B G | |
| | G[1] | R-2-65-A G | R-2-15-AAAA G | |
| | H[1] | R-2-65-B G | | |
| | J[1] | R-2-65-C G | | |
| | K[1] | R-2-65-D G | | |
| | L[1] | R-6-65-A G | | |
| | M[1] | R-6-65-B G | | |
| | N[2] | No Tube | | |

| V. Float & Direct Read Scale Selection | Code Option | Float | Accuracy | Scale Inscription |
|---|---|---|---|---|
| | ZZ[4] | None | N/A | N/A |
| | 1A[1] | [3] GLASS | STD-50(10%), 55(5%) | MM |
| | 1B[1] | [3] ST.STL | STD-50(10%), 55(5%) | MM |
| | 1C[1] | [3] SAPPHIRE | STD-50(10%), 55(5%) | MM |
| | 1D[1] | [3] CARBOLOY | STD-50(10%), 55(5%) | MM |
| | 1E[1] | [3] TANTALUM | STD-50(10%), 55(5%) | MM |
| | 1G | GLASS | CALIB-50(5%), 55(3%) | MM |
| | 1H | ST.STL | CALIB-50(5%), 55(3%) | MM |
| | 1J | SAPPHIRE | CALIB-50(5%), 55(3%) | MM |
| | 1K | CARBOLOY | CALIB-50(5%), 55(3%) | MM |
| | 1L | TANTALUM | CALIB-50(5%), 55(3%) | MM |
| | 2A[1] | [3] GLASS | STD-50(10%), 55(5%) | LINEAR |
| | 2B[1] | [3] ST.STL | STD-50(10%), 55(5%) | LINEAR |
| | 2C[1] | [3] SAPPHIRE | STD-50(10%), 55(5%) | LINEAR |
| | 2D[1] | [3] CARBOLOY | STD-50(10%), 55(5%) | LINEAR |
| | 2E[1] | [3] TANTALUM | STD-50(10%), 55(5%) | LINEAR |
| | 2G | GLASS | CALIB-50(5%), 55(3%) | LINEAR |
| | 2H | ST.STL | CALIB-50(5%), 55(3%) | LINEAR |
| | 2J | SAPPHIRE | CALIB-50(5%), 55(3%) | LINEAR |
| | 2K | CARBOLOY | CALIB-50(5%), 55(3%) | LINEAR |
| | 2L | TANTALUM | CALIB-50(5%), 55(3%) | LINEAR |
| | 3A[1] | [3] GLASS | STD-50(10%), 55(5%) | CUSTOM DECAL |
| | 3B[1] | [3] ST.STL | STD-50(10%), 55(5%) | CUSTOM DECAL |
| | 3C[1] | [3] SAPPHIRE | STD-50(10%), 55(5%) | CUSTOM DECAL |
| | 3D[1] | [3] CARBOLOY | STD-50(10%), 55(5%) | CUSTOM DECAL |
| | 3E[1] | [3] TANTALUM | STD-50(10%), 55(5%) | CUSTOM DECAL |
| | 3G | GLASS | CALIB-50(5%), 55(3%) | CUSTOM DECAL |
| | 3H | ST.STL | CALIB-50(5%), 55(3%) | CUSTOM DECAL |
| | 3J | SAPPHIRE | CALIB-50(5%), 55(3%) | CUSTOM DECAL |
| | 3K | CARBOLOY | CALIB-50(5%), 55(3%) | CUSTOM DECAL |
| | 3L | TANTALUM | CALIB-50(5%), 55(3%) | CUSTOM DECAL |
| | 4A[1] | [3] GLASS | STD-50(10%), 55(5%) | PERCENT SCALE |
| | 4B[1] | [3] ST.STL | STD-50(10%), 55(5%) | PERCENT SCALE |
| | 4C[1] | [3] SAPPHIRE | STD-50(10%), 55(5%) | PERCENT SCALE |
| | 4D[1] | [3] CARBOLOY | STD-50(10%), 55(5%) | PERCENT SCALE |
| | 4E[1] | [3] TANTALUM | STD-50(10%), 55(5%) | PERCENT SCALE |
| | 4G | GLASS | CALIB-50(5%), 55(3%) | PERCENT SCALE |
| | 4H | ST.STL | CALIB-50(5%), 55(3%) | PERCENT SCALE |
| | 4J | SAPPHIRE | CALIB-50(5%), 55(3%) | PERCENT SCALE |
| | 4K | CARBOLOY | CALIB-50(5%), 55(3%) | PERCENT SCALE |
| | 4L | TANTALUM | CALIB-50(5%), 55(3%) | PERCENT SCALE |

[1] QuickShip

*Select meters ship in 5 days.*
*Max order quantity = 15 meters.*
*Consult factory on orders of more than 15 meters.*

[2] *The options indicated are not available with a CRN certification.*

[3] *Accuracy for air and water in the preceding capacity tables will be STD-50(5%), 55(3%).*

[4] *Use this code (ZZ) only when Tube Code above is "N"*

| Code Description | Code Option | Option Description[1] | |
|---|---|---|---|
| VI. Tube Packing and O-ring Materials | | Tube Packing | O-ring Meter/Valve |
| | A[1] | Buna | Buna |
| | B[1] | Viton | Viton |
| | D[1] | Viton | EPR |
| | E[1] | Viton | Kalrez |
| | F[1] | Teflon | Buna |
| | G[1] | Teflon | Viton |
| | J[1] | Teflon | EPR |
| | K[1] | Teflon | Kalrez |
| | L[1] | EPR | EPR |
| | M[1] | Butyl | Butyl |
| | N[1] | No Packing | Buna |
| | P[1] | No Packing | Viton |
| | R[1] | No Packing | EPR |
| | S[1] | No Packing | Kalrez |
| | T[1] | No Packing | Butyl |

*Note: If valve assy is not required for a specific model number, select the proper code for the O-ring material of the Sho-Rate.*

| | | | |
|---|---|---|---|
| VII. End Fitting Material, Connection Size & Type | | Fitting Material | Connection Size and Type |
| | C[1] | 316SS | 1/8" NPT |
| | [5]F[1] | 316SS | 1/8" NPT Thd.W/Locknut |
| | J[1] | 316SS | 1/4" NPT |
| | [5]/[2]K | KYNAR | 1/4" NPT |
| | [5]N[1] | 316SS | 1/4" NPT Thd.W/Locknut |
| | R[1] | 316SS | 1/8" Compression |
| | [5]U[1] | 316SS | 1/8" Compression w/locknut (2 pc design) |
| | W[1] | 316SS | 1/4" F-Rc Thd w/Locknut |
| | X | 316SS | 1/4" Compression |
| | [5]1 | 316SS | 1/4" Compression w/locknut (2 pc design) |
| | 3 | 316SS | 3/8" F-Rc Thd w/Locknut |
| | [2]4[1] | 316SS | 1/4" I.D.Hose |
| | [5]6[1] | 316SS | Integral 5/16-24 thd. |
| | [5]7 | 316SS | 1/4" VCR |
| | [2]8[1] | 316SS | 6mm thd |

| | | |
|---|---|---|
| VIII. Valve Type | A[1] | Valve Plug |
| | B[1] | NRS-316SS #1 |
| | C[1] | NRS-316SS #2 |
| | D[1] | NRS-316SS #3 |
| | E[1] | NRS-316SS #4 |
| | F[1] | NRS-316SS #5 |
| | G[1] | NRS-316SS #6 |
| | H | NRS-316SS #7 |
| | J | To Integrally Mounted 88/8900 316SS Flow Controller - Cartridge II/III Valve - Viton Diaphragm |
| | K | To Integrally Mounted 88/8940 316SS Flow Controller - NRS Valve - Viton Diaphragm |
| | L | To Integrally Mounted 88/8900 Brass Flow Controller - Cartridge II/III Valve - Viton Diaphragm |
| | M | To Integrally Mounted 88/8940 Brass Flow Controller - NRS Valve - Viton Diaphragm |
| | N | To Integrally Mounted 88/8900 316SS Flow Controller - Cartridge II/III Valve - Teflon Diaphragm |
| | P | To Integrally Mounted 88/8940 316SS Flow Controller - NRS Valve - Teflon Diaphragm |
| | Q | To Integrally Mounted 88/8900 Brass Flow Controller - Cartridge II/III Valve - Buna Diaphragm |
| | R | To Integrally Mounted 88/8940 Brass Flow Controller - NRS Valve - Buna Diaphragm |
| | S[1] | Std. Valve Cavity - no valve assy or plug |
| | T[1] | Cartridge II/III Valve - Low Flow - 316SS |
| | U[1] | Cartridge II/III Valve - Med Flow - 316SS |
| | V[1] | Cartridge II/III Valve - HighFlow - 316SS |

[1] QuickShip *Select meters ship in 5 days.*
*Max order quantity = 15 meters.*
*Consult factory on orders of more than 15 meters.*

[2]*The options indicated are not available with a CRN certification.*
*Not valid for controllers*

| Code Description | Code Option | Option Description[1] | | |
|---|---|---|---|---|
| IX. Valve Cavity/Controller Location & Connection Orientation | | Valve/Controller Location | Connection Orientation Inlet | Outlet |
| | 1[1] | Inlet | Back | Back |
| | 5[1] | Outlet | Back | Back |
| | 9 | n/a | Back | Back |
| X. Accessories | A[1] | None | | |
| | B[6] | Bistable Alarm 1 Initiator | | |
| | C[6] | Bistable Alarm 2 Initiators | | |
| | D[6] | Bistable Alarm 1 Initiator with I.S. Relays 240V | | |
| | E[6] | Bistable Alarm 2 Initiators with I.S. Double Relays 240V | | |
| | F[6] | Bistable Alarm 1 Initiator with I.S. Relay 120V | | |
| | G[6] | Bistable Alarm 2 Initiators with I.S. Double Relays 120V | | |
| XI. Options | A[1] | None | | |
| | B | 316 Stainless Steel Frame | | |
| | C | Baseplate (Aluminum) | | |
| | D[1] | No Brooks Identification | | |
| | E | 316SS Frame & No Brooks ID | | |
| | F | Baseplate & No Brooks ID | | |
| | G | 316SS Frame & Baseplate | | |
| | H | 316SS Frame & Baseplate & No Brooks ID | | |
| | J | Stainless Steel Tag & 316SS Frame | | |
| | K | Stainless Steel Tag & Baseplate (Aluminum) | | |
| | L[1] | Stainless Steel Tag & no Brooks ID | | |
| | M | Stainless Steel Tag & 316SS Frame & No Brooks ID | | |
| | N | Stainless Steel Tag & Baseplate & No Brooks ID | | |
| | P | Stainless Steel Tag & 316SS Frame & Baseplate | | |
| | Q | Stainless Steel Tag & 316SS Frame & Baseplate & No Brooks ID | | |
| | R[1] | Stainless Steel Tag | | |
| | S[6] | Stainless Steel Float Stops | | |
| | T[6] | Open Alarm Frame | | |
| | U[6] | 316 SS Frame & Stainless Steel Float Stops | | |
| XII. Certifications | A[1] | None | | |
| | B | CRN Certification | | |
| | C | International Calibration Certification (5%-1350, 3%-1355) | | |
| | D | Degrease for Oxygen Service (not MIL Spec) | | |
| | E | CRN Cert & ICC | | |
| | F | CRN Cert & Degrease for O2 | | |
| | G | Degrease for O2 & ICC | | |

[1] QuickShip *Select meters ship in 5 days.*
*Max order quantity = 15 meters.*
*Consult factory on orders of more than 15*

[6] *Notes: Not yet available. Release TBD*

Sample Standard Model Code

| I | II | III | IV | V | VI | VII | VIII | IX | X | XI | XII |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | G | G | 1B | F | A | C | 2 | 1 | A | A | A |

# Service and Support

Brooks is committed to assuring all of our customers receive the ideal flow solution for their application, along with outstanding service and support to back it up. We operate first class repair facilities located around the world to provide rapid response and support. Each location utilizes primary standard calibration equipment to ensure accuracy and reliability for repairs and recalibration and is certified by our local Weights and Measures Authorities and traceable to the relevant International Standards.

*Visit www.BrooksInstrument.com to locate the service location nearest to you.*

## START-UP SERVICE AND IN-SITU CALIBRATION

Brooks Instrument can provide start-up service prior to operation when required. For some process applications, where ISO-9001 Quality Certification is important, it is mandatory to verify and/or (re)calibrate the products periodically. In many cases this service can be provided under in-situ conditions, and the results will be traceable to the relevant international quality standards.

## SEMINARS AND TRAINING

Brooks Instrument can provide seminars and dedicated training to engineers, end users, and maintenance persons.

*Please contact your nearest sales representative for more details.*

Due to Brooks Instrument's commitment to continuous improvement of our products, all specifications are subject to change without notice.

## TRADEMARKS

Brooks, NRS, Sho-Rate.....Brooks Instrument, LLC
All other trademarks are the property of their respective owners.

ISO 9001 QUALITY SYSTEM

DS-VA-1350G-eng/2019-8

**Global Headquarters**
**Brooks Instrument**
407 West Vine Street
Hatfield, PA
19440-0903 USA

Toll-Free (USA): 888-554-FLOW
T: 215-362-3500
F: 215-362-3745
BrooksAM@BrooksInstrument.com

A list of all Brooks Instrument locations and contact details can be found at www.BrooksInstrument.com



BROOKS® INSTRUMENT
*Beyond Measure*

DS-VA-1358-eng
January, 2019

Data Sheet

# Sho-Rate™ Series Model 1358

Variable Area


*Sho-Rate™ Model 1358*

## Sho-Rate™ "50", Size 8, Flow Indicator Glass Tube Variable Area Flowmeters

## Overview

The Brooks® Sho-Rate "50" Series of low flow indicators provide a cost-effective means of flow indication where the accuracy requirements are not severe. Available options include an integral needle control valve and optional configuration to connect a flow controller to the inlet or outlet of the meter.

## Product Features

- Ten-to-one rangeability
- Heavy-wall, precision bore borosilicate glass metering tube
- A wide range of scales on the metering tube
- Tube removable without disconnecting the instrument
- Interchangeable tubes and floats
- Customer rotatable
- Piping connections through 360° at 90° intervals
- Easily panel mounted

## Product Specifications

| Specifications | 1358 |
|---|---|
| Measuring Range | See Capacity Table |
| Standard Accuracy | ±10% of full scale from 100% to 10% of reading |
| Repeatability | 0.5% full scale |
| Rangeability | Ten to one |
| Pressure/Temperature | 200 psig at 33°F to 250°F (1°C to 121°C) |
| | Fluid temperatures below 32°F (0°C) will cause frosting of the glass metering tube. Consult factory for applications below this temperature. |
| | 100 psig at 33°F to 250°F (1°C to 121°C)(CRN Certification) |
| Pressure Equipment Directive (PED) 97/23/EC | Flowmeters mentioned in this document are Sound Engineering Practice (SEP) |

*(Specifications continued on next page)*

## Product Specifications (Continued)

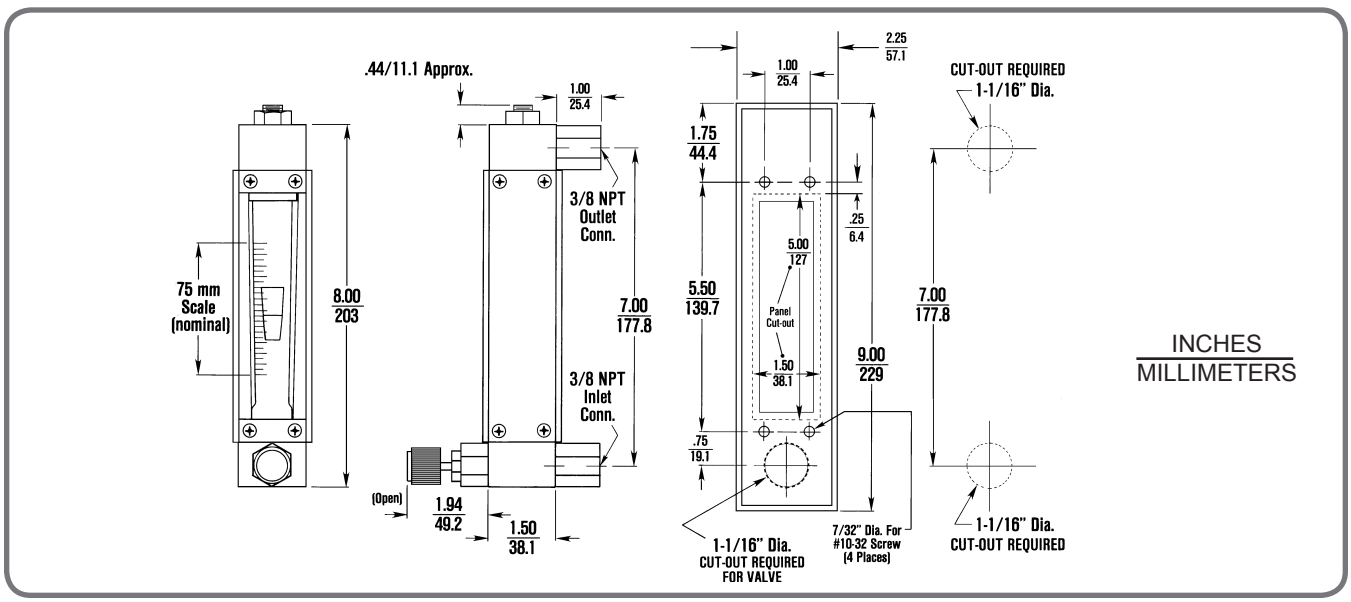
| Specifications | 1358 |
|---|---|
| Materials of Construction: | |
| Metering Tube | Borosilicate Glass |
| Tube Packing | Standard: Neoprene™ (Brass meters); Viton-A® fluoroelastomers (316 Stainless Steel meters); Optional: EPM |
| O-rings | Standard: Buna-N (Brass meters); Viton-A® fluoroelastomers (316 Stainless Steel meters); Optional: EPM |
| Float | 316 Stainless Steel |
| Float Stops | Stainless Steel |
| Side Plates | Standard: Black Anodized Aluminum |
| Window | Scratch resistant, UV stabilized polycarbonate |
| Back Cover | Milk white polycarbonate |
| End Fittings | Chrome Plated Brass or 316 Stainless Steel |
| Connections | Standard: Horizontal female 3/8" NPT threaded adaptors; Optional: Refer to Model Code |
| Scales | Type (standard): Fused on meter tube |
| | Length: 75 mm, nominal |
| | Graduations: Standard: Direct read on tube in gpm water or scfm air |
| | Optional: Special direct read decal on tube. Consult factory for available ranges. |
| | Direct read on metal scale plate mounted beside tube |

## Product Capacities

| | | | Pressure Drop Without Valve Inches W.C. | Pressure Drop With Valve Inches W. C. | Float |
|---|---|---|---|---|---|
| Maximum Flow Rate | Water (gpm) | 0.8 | 12.6 | 13.6 | 8-RV-8 |
| | | 1.5 | 22.2 | 27.0 | 8-RJ-10 |
| | | 2.5 | 61.0 | 85.2 | 8-RJ-23 |
| | | 3.5 | 88.7 | 121.0 | 8-RJ-30 |
| | | 5.0 | 172 | 238.0 | 8-RJ-39 |
| | Air (scfm) | 3.4 | 14.34 | 15.5 | 8-RV-8 |
| | | 6.0 | 25.34 | 30.8 | 8-RJ-10 |
| | | 12.0 | 69.34 | 97.3 | 8-RJ-23 |
| | | 15.0 | 101.34 | 138.3 | 8-RJ-30 |

NOTE: All air flows are at 14.7 psia and 70°F.

## Product Dimensions



# Model Code

| Code Description | Code Option | Option Description |
|---|---|---|
| I. Base Model Number | 1358F | Sho-Rate "50", Size 8 |
| II. Tube | 1 | R-8M-75-1 (Cut-Off) |
| | 2 | R-8M-75-1 CRN option |
| | 9 | No Tube |
| III. Float (316 Stainless Steel) | A | 8-RV-8 |
| | B | 8-RJ-10 |
| | C | 8-RJ-23 |
| | D | 8-RJ-30 |
| | E | 8-RJ-39 |
| | Y | No Float |
| IV. Scale Type/Side Plate Arrangement | 1 | Scale on tube (Plain Side Plates) |
| | 2 | Aluminum Detachable Scale Mounted to Right Side Plate |
| V. Scale Inscription | A | No Inscription |
| | B | MM Scale |
| | D | SCFM Air @ 70°F psia, Standard 10% Accuracy |
| | E | GPM Liquid Specific Gravity 1.0, Viscosity 1.0 cP, Standard 10% Accuracy |
| | F | Special Inscription, Standard 10% Accuracy |
| VI. Tube Packing & O-ring Materials for Meter/Valve[1] | A | Neoprene Tube Packing, Buna O-ring |
| | C | Viton Tube Packing, Viton O-ring |
| | K | EPM Tube Packing, EPM O-ring |
| | L | No Packing[2], Buna O-ring |
| | M | No Packing[2], VitonO-ring |
| | N | No Packing[2], EPM O-ring |
| | P | No Packing[2], Kalrez O-ring |
| VII. Fitting & Adapter Material[3]/ Process Connection Size & Type | 1* | 3/8" NPT Connection, Brass Fitting & Adapter |
| | 2 | 3/8" NPT Connection, 316 Stainless Steel Fitting & Adapter |
| | 3* | Thd. 3/8" NPT with Locknut Connection, Brass Fitting & Adapter |
| | 4 | Thd. 3/8" NPT with Locknut Connection, 316 Stainless Steel Fitting & Adapter |
| VIII. Valve Configuration | A | No Valve (Plain End Fitting on Inlet) |
| | B | Standard Stainless Steel Needle Valve on Inlet |
| | C | Standard Stainless Steel Needle Valve on Outlet |
| | D* | Standard Brass Needle Valve on Inlet |
| | E* | Standard Brass Needle Valve on Outlet |
| | F[4] | To mount 8810 Flow Controller |
| | G[4] | To mount 8910 Flow Controller |
| | H[4]* | To mount 8830 Flow Controller |
| IX. Connection Orientation | 1 | Inlet Port Back, Outlet Port Back |
| | 3 | Inlet Port Back, Outlet Port Right[5] |
| | 9 | Inlet Port Right, Outlet Port Back[6] |
| X. Accessories (One or Two-Digit Field) | A | None |
| | G | No Brooks Indentification |

NOTES: [1]If valve is not required, select proper O-ring material for meter only.
[2]If tube is not required, select proper O-ring material coded L through P.
[3]If no adapter is required, select proper code for end fitting material only.
[4]Flow Controller must be a second-line item on customer's order.
* Not available with CRN Certification
[5]For 8912 Controller Only
[6]For 8812/8830 Controller Only

| | I | II | III | IV | V | VI | VII | VIII | IX | X |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Standard Model Code | 1358F | 1 | C | 2 | D | C | 2 | B | 1 | A |

## Service and Support

Brooks is committed to assuring all of our customers receive the ideal flow solution for their application, along with outstanding service and support to back it up. We operate first class repair facilities located around the world to provide rapid response and support. Each location utilizes primary standard calibration equipment to ensure accuracy and reliability for repairs and recalibration and is certified by our local Weights and Measures Authorities and traceable to the relevant International Standards.

*Visit www.BrooksInstrument.com to locate the service location nearest to you.*

### START-UP SERVICE AND IN-SITU CALIBRATION

Brooks Instrument can provide start-up service prior to operation when required. For some process applications, where ISO-9001 Quality Certification is important, it is mandatory to verify and/or (re)calibrate the products periodically. In many cases this service can be provided under in-situ conditions, and the results will be traceable to the relevant international quality standards.

### SEMINARS AND TRAINING

Brooks Instrument can provide seminars and dedicated training to engineers, end users, and maintenance persons.

*Please contact your nearest sales representative for more details.*

Due to Brooks Instrument's commitment to continuous improvement of our products, all specifications are subject to change without notice.



ISO 9001 QUALITY SYSTEM

**Global Headquarters**
**Brooks Instrument**
407 West Vine Street
Hatfield, PA
19440-0903 USA

Toll-Free (USA): 888-554-FLOW
T: 215-362-3500
F: 215-362-3745
BrooksAM@BrooksInstrument.com

A list of all Brooks Instrument locations and contact details can be found at www.BrooksInstrument.com



BROOKS® INSTRUMENT