

Sho-Rate

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231	Казань (843)206-01-48	Новокузнецк (3843)20-46-81	Смоленск (4812)29-41-54
Архангельск (8182)63-90-72	Калининград (4012)72-03-81	Новосибирск (383)227-86-73	Сочи (862)225-72-31
Астрахань (8512)99-46-04	Калуга (4842)92-23-67	Омск (3812)21-46-40	Ставрополь (8652)20-65-13
Барнаул (3852)73-04-60	Кемерово (3842)65-04-62	Орел (4862)44-53-42	Сургут (3462)77-98-35
Белгород (4722)40-23-64	Киров (8332)68-02-04	Оренбург (3532)37-68-04	Тверь (4822)63-31-35
Брянск (4832)59-03-52	Краснодар (861)203-40-90	Пенза (8412)22-31-16	Томск (3822)98-41-53
Владивосток (423)249-28-31	Красноярск (391)204-63-61	Пермь (342)205-81-47	Тула (4872)74-02-29
Волгоград (844)278-03-48	Курск (4712)77-13-04	Ростов-на-Дону (863)308-18-15	Тюмень (3452)66-21-18
Вологда (8172)26-41-59	Липецк (4742)52-20-81	Рязань (4912)46-61-64	Ульяновск (8422)24-23-59
Воронеж (473)204-51-73	Магнитогорск (3519)55-03-13	Самара (846)206-03-16	Уфа (347)229-48-12
Екатеринбург (343)384-55-89	Москва (495)268-04-70	Санкт-Петербург (812)309-46-40	Хабаровск (4212)92-98-04
Иваново (4932)77-34-06	Мурманск (8152)59-64-93	Саратов (845)249-38-78	Челябинск (351)202-03-61
Ижевск (3412)26-03-58	Набережные Челны (8552)20-53-41	Севастополь (8692)22-31-93	Череповец (8202)49-02-64
Иркутск (395)279-98-46	Нижний Новгород (831)429-08-12	Симферополь (3652)67-13-56	Ярославль (4852)69-52-93
Россия (495)268-04-70	Киргизия (996)312-96-26-47	Казахстан (7172)727-132	



Sho-Rate™ 1250/55 Series

Sho-Rate™

Models 1250 & 1255

Low Flow Glass Tube Flowmeters

QuickShip →

Series 1250/55 are flowmeters for liquids and gases available in 65 or 150mm scale lengths. These flowmeters can be configured with a standard or precision control valve on the inlet, the outlet (with limitations) or no valve; fittings can be specified in either aluminum or stainless steel; valves can be specified in either brass or stainless steel; O-rings and seals can be provided in Buna-N or Viton® fluoroelastomer.

Features

- Standard direct read scales on tube for air, N₂ & water @ reference conditions
- Additional direct read scales on tube for selected gases @ reference conditions are available as options
- Standard millimeter scales with flow data @ reference conditions for air, water, O₂, N₂, CO₂, He & Ar
- Scale length (approximate) 65mm, 150mm
- Rotating lens provides a 180° view with magnification
- Flowmeter options:
 - No valve
 - Cartridge valve, inlet and outlet (vacuum or water service only)
 - Precision control valve, inlet and outlet (vacuum or water service only)
- EZ-CHANGE™ design allows quick interchangeability of tube assemblies
- Available with aluminum & 316 SS connections

Product Specifications

Performance	1250	1255
Accuracy	±5% full scale at reference conditions* (for listed gases)	±3% full scale at reference conditions* (for listed gases)
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, Aluminum, 316 Stainless Steel, Clear Polycarbonate, Teflon®	
End Block Options	Stainless Steel and Aluminum	
Packing Material	Viton® fluoroelastomers, Buna	
Float Materials	Glass, Sapphire, Stainless Steel, Carboly®, Tantalum	
Connection Materials	Stainless Steel and Aluminum	
Connection Options	1/8" NPT (w/locknuts) - Aluminum and Stainless Steel 1/4" NPT (w/locknuts) - Stainless Steel only	
Dimensions	See Dimension Drawings	
Valve Options	Cartridge Valve and Precision Valve	
Valve Materials	Stainless Steel and Brass	

*Reference conditions: 70°F (21.1°C) / 14.7 psia (1 BarA)

Metering Tube Assemblies

- Heavy-wall, precision bore
- Borosilicate glass
- Removeable without disconnecting instrument

Threaded Jack Screw

- Tubes sealed on compression gasket

EZ-CHANGE™ Interchangeable Tubes Assemblies with Direct Reading (DR) Scales on the Tube

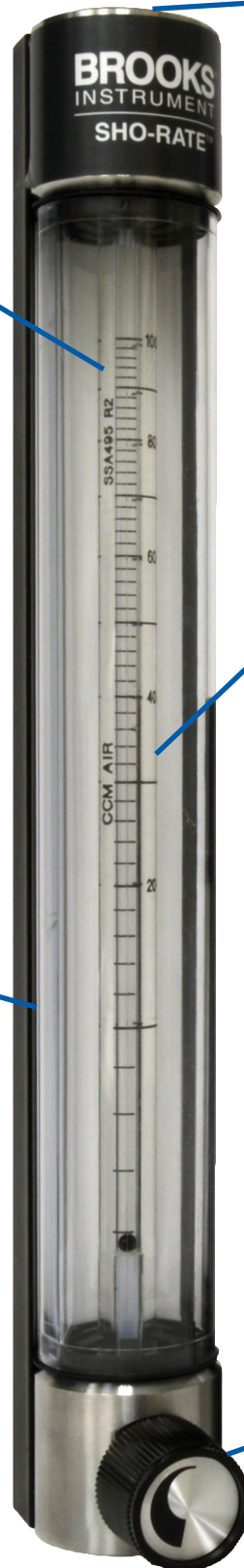
- Allows users to change ranges as the application dictates
- DR Scale on Tube for standard fluids at reference conditions

Rotating Polycarbonate Lens

- 180° view of float with magnification

Optional Valves for Inlet

- Cartridge III Valves
- Precision valves (For enhanced resolution of flow setting)



Product Specifications - Capacity Table: Model 1250

Model 1250								
Air								
Tube No.	Float	Float Dia.	ml/mim	LPM	CCM	SCFH		
D6011	G	1/8"			2 - 50		Standard Ranges	
D6023	ST	1/8"			10 - 300			
D6032	S	1/8"			25 - 550	0.1 - 1.2		
D6042	S	1/8"		0.1 - 1	120 - 1,200			
D6051	G	3/16"		0.1 - 2.5		0.25 - 5.5		
D6053	ST	3/16"		0.3 - 5				
D6073	ST	1/4"		0.2 - 11.4		2.5 - 25		
D6092	S	1/4"		1 - 20				
D6093	ST	1/4"		1 - 30		4 - 60		
D6104	C	1/4"		2 - 60				
D6013	ST	1/8"			0 - 150		Extended Ranges 1	
D6021	G	1/8"			5 - 100			
D6083	ST	1/4"				4 - 40		
D6052	S	3/16"			0 - 5000		Extended Ranges 2	
Model 1250								
Nitrogen								
Tube No.	Float	Float Dia.	ml/mim	LPM	CCM	SCFH		
D6021	G	1/8"	4 - 100				Standard Ranges	
D6032	S	1/8"	20 - 560			0.1 - 1.2		
D6051	G	3/16"				0.5 - 5		
D6053	ST	3/16"				0.4 - 10		
D6063	ST	3/16"				0.5 - 16		
D6081	G	1/4"				2 - 20		
D6104	C	1/4"				13 - 130		
D6013	ST	1/8"			15 - 150			Extended Ranges 1
D6053	ST	3/16"			500 - 5,000			
D6081	G	1/4"		1 - 10			Extended Ranges 2	
Model 1250								
Water								
Tube No.	Float	Float Dia.	ml/mim	LPH	CCM	GPM	GPH	
D6053	ST	3/16"	4 - 140		4 - 140		Standard Ranges	
D6073	ST	1/4"						0.2 - 5
D6093	ST	1/4"						0.5 - 14
D6101	G	1/4"			25 - 575			
D6105	T	1/4"			50 - 2000			
D6105	T	1/4"				.02 - 0.5		Extended Ranges 2
Model 1250								
Oxygen								
Tube No.	Float	Float Dia.	ml/mim	LPM	CCM	SCFH		
D6052	S	3/16"		0.3 - 3			Extended Ranges 2	
Hydrogen								
D6011	G	1/8"			5 - 115			
D6052	S	3/16"		1 - 10				
Argon								
D6051	G	3/16"		0 - 2				
Carbon Dioxide								
D6042	S	1/8"			100 - 1,000			

Float Material Key
 (G) Black Glass
 (S) Sapphire
 (ST) Stainless Steel
 (C) Carboloy
 (T) Tantalum

Product Specifications - Capacity Table: Model 1255

Model 1255						
Air						
Tube No.	Float	Float Dia.	ml/mim	LPM	CCM	SCFH
D1022	S	1/8"			4- 160	
D1032	ST	1/8'				.05 - 1.15
D1033	ST	1/8'			30 -850	
D1043	ST	1/8"		0.06 -1.7		
D1052	S	3/16"		0.05 -3		0.1 - 6
D1082	S	1/4"		1 -30		
D1084	C	1/4"		1 - 50		
D1021	G	1/8"	2 -100		2 -100	
D1032	S	1/8"			20 -550	
D1053	ST	3/16"			100 -4,500	
D1063	ST	3/16"		0.1 - 6.6		
D1085	T	1/4"			2,000 -66,000	
Model 1255						
Nitrogen						
Tube No.	Float	Float Dia.	ml/mim	LPM	CCM	SCFH
D1021	G	1/8"			2 -100	
D1041	G	1/8"	20-900			
D1071	G	1/4"		0.1 - 9		0.5 - 20
D1081	G	1/4"				
Model 1255						
Water						
Tube No.	Float	Float Dia.	ml/mim	LPH	CCM	GPM
D1053	ST	3/16"			2 -130	
D1083	ST	1/4"		0.1 -1.3		
Model 1255						
Oxygen						
Tube No.	Float	Float Dia.	ml/mim	LPM	CCM	SCFH
D1054	C	3/16"		0.2 - 5		
D1072	S	1/4"				2 -24

Standard Ranges

Extended Ranges 1

Standard Ranges

Standard Ranges

Extended Ranges 2

Float Material Key
 (G) Black Glass
 (S) Sapphire
 (ST) Stainless Steel
 (C) Carboly
 (T) Tantalum

Product Specifications - Capacity Table: Model 1250

Model 1250					Standard Ranges
Millimeter					
Tube No.	Float	Float Dia.	Air (CCM)	Water (CCM)	
R6011**	G	1/8"	50		
R6012**	S	1/8"	75		
R6013**	ST	1/8"	153		
R6014**	C	1/8"	278		
R6021**	G	1/8"	103		
R6022**	S	1/8"	160		
R6023**	ST	1/8"	298		
R6024**	C	1/8"	498		
R6031**	G	1/8"	400		
R6032**	S	1/8"	550		
R6033**	ST	1/8"	855	21.4	
R6034**	C	1/8"	1275	35.4	
R6041**	G	1/8"	900	18.2	
R6042**	S	1/8"	1200	29.6	
R6043**	ST	1/8"	1800	50.1	
R6044**	C	1/8"	2620	76.1	
R6051**	G	3/16"	2580	55	
R6052**	S	3/16"	3350	85	
R6053**	ST	3/16"	5030	140	
R6054**	C	3/16"	7270	215	
R6061**	G	3/16"	3840	90	
R6062**	S	3/16"	5080	130	
R6063**	ST	3/16"	7510	220	
R6064**	C	3/16"	10700	325	
R6071**	G	1/4"	6000	130	
R6072**	S	1/4"	7790	200	
R6073**	ST	1/4"	11450	335	
R6081**	G	1/4"	10100	235	
R6082**	S	1/4"	12980	350	
R6083**	ST	1/4"	18960	560	
R6091**	G	1/4"	15750	375	
R6092**	S	1/4"	20170	545	
R6093**	ST	1/4"	29400	880	
R6101**	G	1/4"	23640	570	
R6102**	S	1/4"	30090	825	
R6103**	ST	1/4"	43340	1330	
R6105**	T	1/4"	65850	2055	

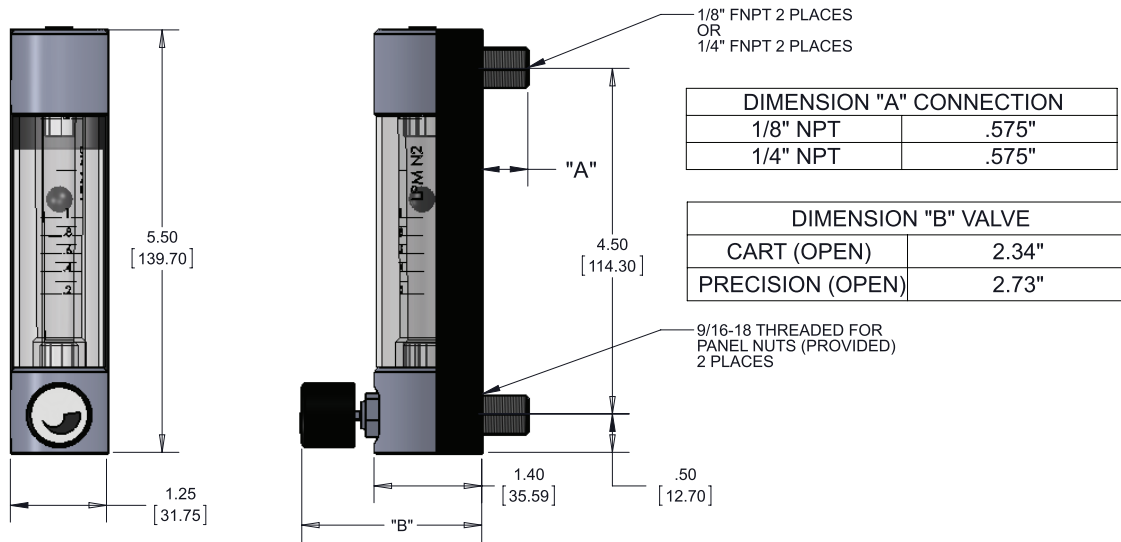
Model 1255					Standard Ranges
Millimeter					
Tube No.	Float	Float Dia.	Air (CCM)	Water (CCM)	
R1011**	G	1/8"	50		
R1012**	S	1/8"	80		
R1013**	ST	1/8"	152		
R1014**	C	1/8"	275		
R1021**	G	1/8"	103		
R1022**	S	1/8"	160		
R1023**	ST	1/8"	293		
R1024**	C	1/8"	497		
R1031**	G	1/8"	400		
R1032**	S	1/8"	555		
R1033**	ST	1/8"	870	22.2	
R1034**	C	1/8"	1300	36.2	
R1041**	G	1/8"	855	18	
R1042**	S	1/8"	1135	27.6	
R1043**	ST	1/8"	1710	47.5	
R1044**	C	1/8"	2465	73.2	
R1051**	G	3/16"	2290	50	
R1052**	S	3/16"	3980	75	
R1053**	ST	3/16"	4480	125	
R1054**	C	3/16"	6475	190	
R1061**	G	3/16"	3425	75	
R1062**	S	3/16"	4465	115	
R1063**	ST	3/16"	6600	190	
R1064**	C	3/16"	9470	285	
R1071**	G	1/4"	9180	215	
R1072**	S	1/4"	11990	315	
R1073**	ST	1/4"	17810	515	
R1081**	G	1/4"	23740	565	
R1082**	S	1/4"	30270	830	
R1083**	ST	1/4"	44050	1335	
R1085**	T	1/4"	66370	2080	

QuickShip → Select meters ship in 3 days.
Max order quantity = 15 meters.
Consult factory on orders of more than 15

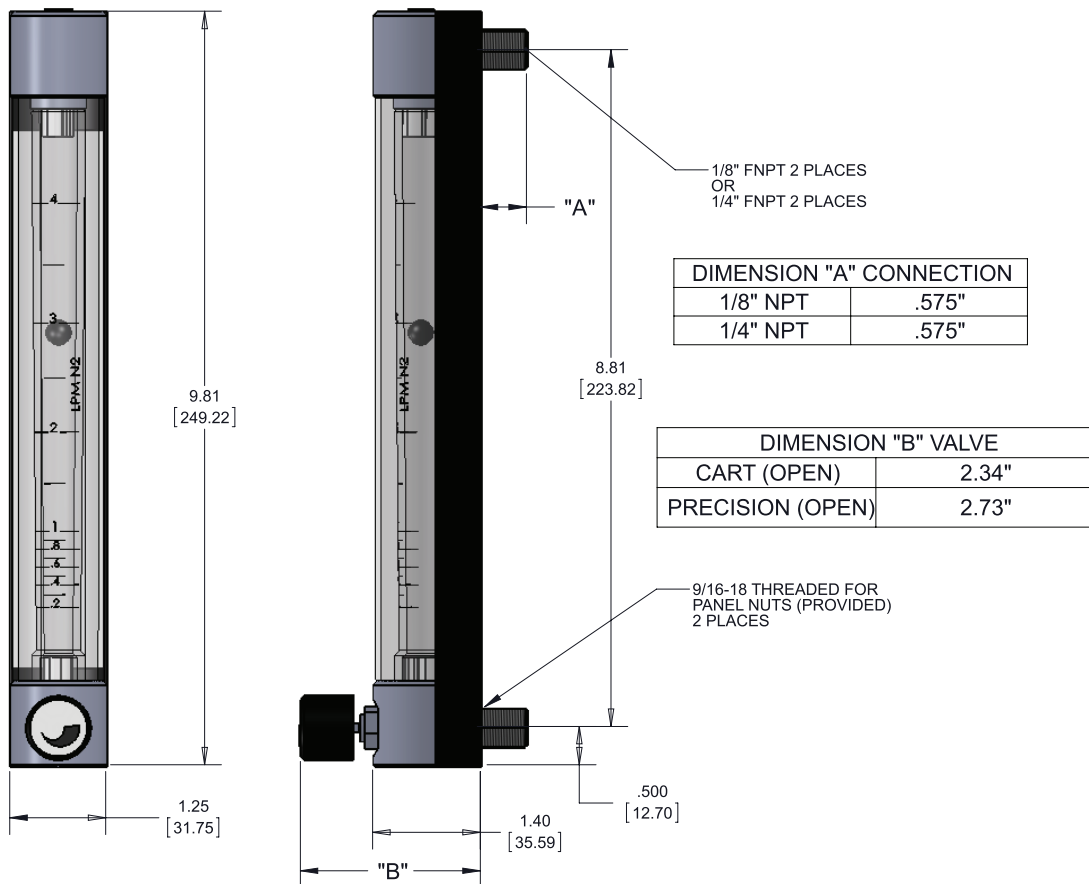
QuickShip → Select meters ship in 3 days.
Max order quantity = 15 meters.
Consult factory on orders of more than 15

Float Material Key
(G) Black Glass
(S) Sapphire
(ST) Stainless Steel
(C) Carboly
(T) Tantalum

Model 1250 Sho-Rate



Model 1255 Sho-Rate



Ordering Information - Reference Model Code Table

1. Model
2. Size & connections
3. Quantity required
4. Fluid
5. Materials of construction
 - a. End fittings (Aluminum or stainless steel)
 - b. Elastomers (Viton or Buna)
6. Fluid or mm scale with table
7. Optional equipment
 - a. Valve type or none

Code Description	Code Option	Option Description
I. Base Model Number	1250A	65 mm Tube Flowmeter
	1255A	150 mm Tube Flowmeter
II. Tube Number	XXXXX	See Capacity Tables for appropriate Tube Number
III. Gas or Liquid	A	Air
	M**	Millimeter with standard data tables
	N	Nitrogen
	W	Water
IV. Unit of Measure	M	ml/min
	L	LPM
	C	CCM
	P	GPM
	R**	Millimeter
	F	SCFH
	G	GPH
V. End Blocks Material (Wetted)	A**	1/8" FNPT Aluminum
	S**	1/8" FNPT Stainless Steel
	Q**	1/4" FNPT Stainless Steel
VI. Valve Designation	N**	No Valve
	V**/**	Standard Inlet Valve
	P*	Precision Inlet Valve, maximum flow of 21.3 slpm air/1,255 sccm water
	O**/**	Outlet Valve (Vacuum or water service only)
	R*	Precision Outlet Valve (Vacuum or water service only)
VII. O-ring Material Used in Valve	B**	Buna - Aluminum only
	V**	Viton - Stainless Steel only

* Valve material is determined by End Blocks Material selection (Brass valve with Aluminum End Blocks and Stainless Steel valve with Stainless Steel End Blocks).

QuickShip Select meters ship in 3 days.
 Max order quantity = 15 meters.
 Consult factory on orders of more than 15 meters.

Additional Options

- Certificate of Conformance
- ICC
- Paper Tag
- Stainless Steel Tag
- Degrease for O₂ Cleaning
- Material Certification 2.2
- No Brooks logo

Sample Standard Model Code

I	II	III	IV	V	VI	VII
1250A	D6011	A	C	S	V	V



Sho-Rate™ 1350G & 1355G Series

Sho-Rate Models 1350G & 1355G

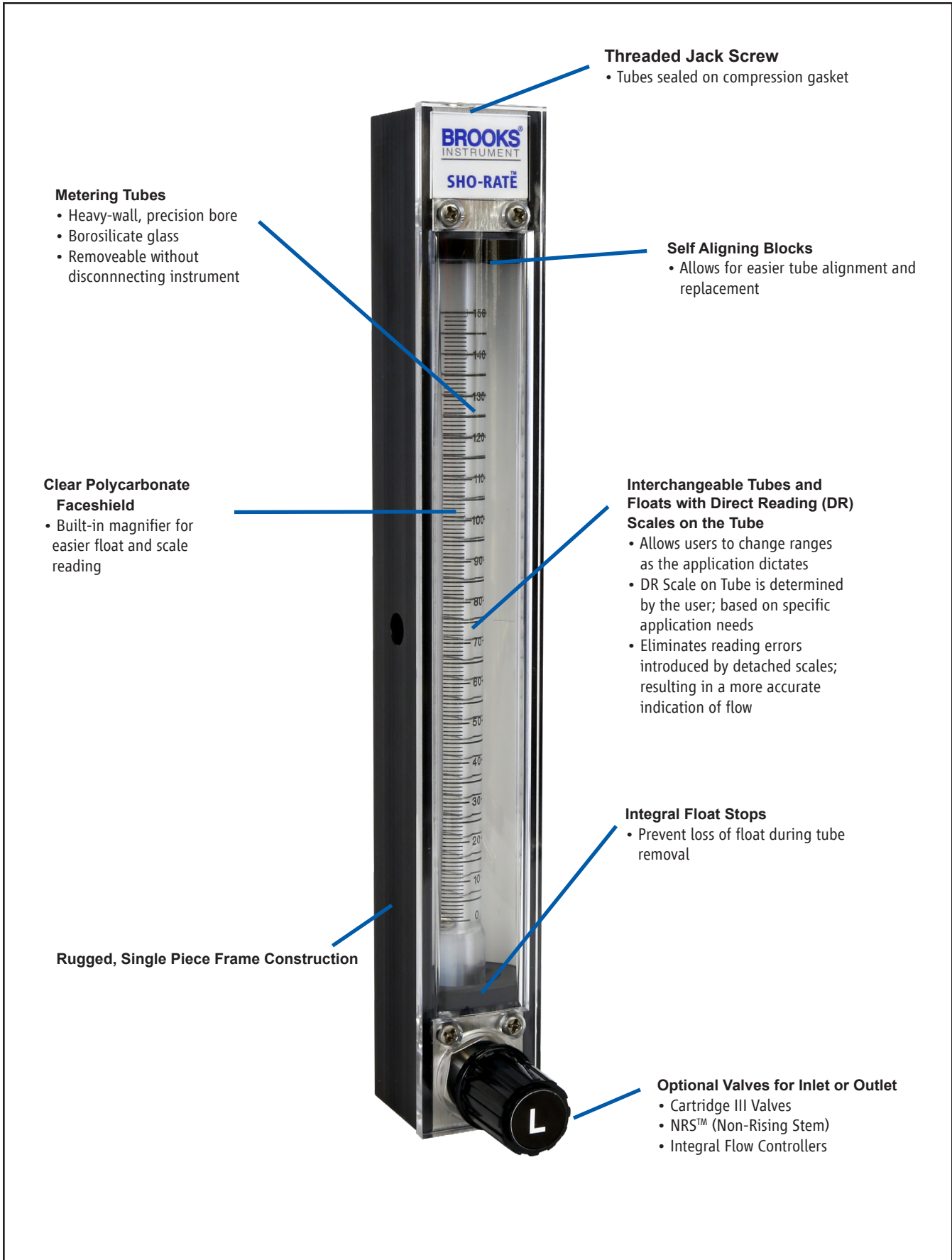
Low Flow Glass Tube Flowmeters

QuickShip
Ships in 5 days

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



Metering Tubes

- Heavy-wall, precision bore
- Borosilicate glass
- Removeable without disconnecting instrument

Clear Polycarbonate Faceshield

- Built-in magnifier for easier float and scale reading

Rugged, Single Piece Frame Construction

Threaded Jack Screw

- Tubes sealed on compression gasket

Self Aligning Blocks

- Allows for easier tube alignment and replacement

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

Optional Valves for Inlet or Outlet

- Cartridge III Valves
- NRS™ (Non-Rising Stem)
- Integral Flow Controllers

Declarations	Mark	Meter Options	Standards/Directives/Marking	Status/Certificate
		Inductive Alarm		
EU Declaration of Conformity		✓	EMC Directive (2014/30/EU)	Declaration
		✓	RoHS Directive (2011/65/EU)	Declaration
		✓	Pressure Equipment Directive (2014/68/EU)	Declaration
		✓	EMC Directive (2014/30/EU)	Declaration
Explosion safety "Intrinsic Safety (ia)"		✓	Inductive Ring Sensor Pepperl + Fuchs Model: RC10-14-N3-Y53478 Pepperl + Fuchs Model: RC15-14-N3-Y53479 <u>Non-Hazardous Locations</u> Power Supply Nominal Voltage 8V Operating Voltage 5...25V Current consumption Active area clear : 3mA (at 8V) Active area obscured: 0.5...0.95mA (at 8V) Ambient Temperature 0°C to 40°C	Pepperl + Fuchs PTB 99 ATEX 2128 X Pepperl + Fuchs Control Drawing: 116-0165G
		✓	<u>Hazardous Location</u> ATEX II 2 G Ex ia IIC T6...T1 Gb IP67 Refer to ATEX Certificate for: Input parameters, Max Ambient Temperature, Special conditions for use	
		✓	FM Approvals Class I, Division 1, Group A, B, C, Class II, Division Group E, F, G, Class III, Division 1 Class I, Zone 0, Group IIC T6	
		✓	Canadian Registration Number (CRN)	

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) 1/4" NPT (w/wo locknuts) 1/8" Compression (w/wo locknuts) 1/4" Compression (w/wo locknuts) 6 mm Compression (w/wo locknuts) 1/4" RC (w/wo locknuts) 3/8" RC (w/wo locknuts) 1/4" VCR® 1/4" ID Hose Swagelok® Converters	
Dimensions	See Dimension Drawings	
Alarm Availability	1 Inductive Ring Sensor/Switch 2 Inductive Ring Sensor(s)/Switch(es) Inductive Ring Sensor(s)/Switch(es) with Relay Options	
Valve Options	Cartridge III Valve and NRS™	
Valve Materials	Stainless Steel	
Flow Controller	Yes	
Certifications	International Calibration Certificate (ICC) CRN Pressure Equipment Directive (97/23/EC) RoHS (II) REACH 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 Floats 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
		Carboly	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
		Carboly	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
		Carboly	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	
Carboly		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
		Carboly	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
		Carboly	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; Decal 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
	Carboly	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
	Carboly	1K	2K	3K	4K
	Tantalum	1L	2L	3L	4L

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

Product Specifications - Capacities; 1355G, Rib Guided, Spherical Floats

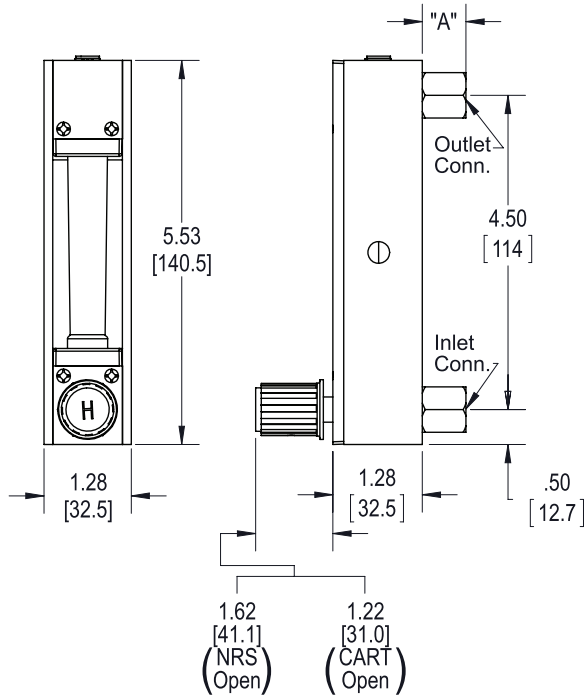
Capacities - Rib Guide Tubes, Spherical Floats for use with 1355G Series Only

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

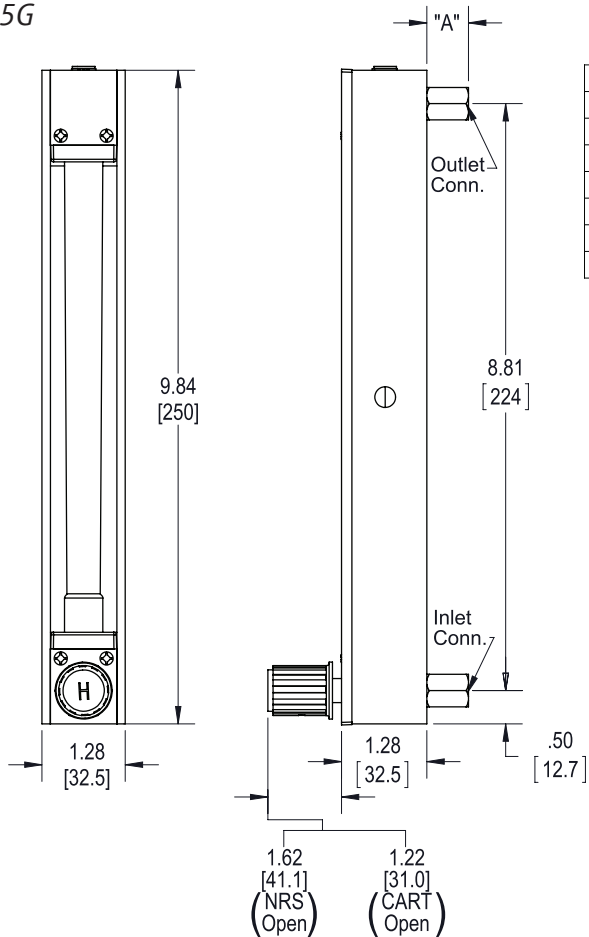
Product Dimensions - Model 1350G and 1355G

Model 1350G



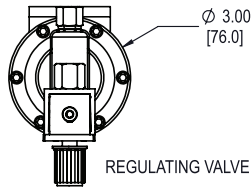
Dimension "A" Connection Adapter	
1/8" NPT	.625 [15.9]
1/4" NPT	.625 [15.9]
1/8" Compression	1.59 [40.3]
1/4" Compression	1.78 [45.1]
1/4" ID Hose	.72 [18.3]
1/4" Rc	.895 [22.7]
3/8" Rc	.895 [22.7]

Model 1355G

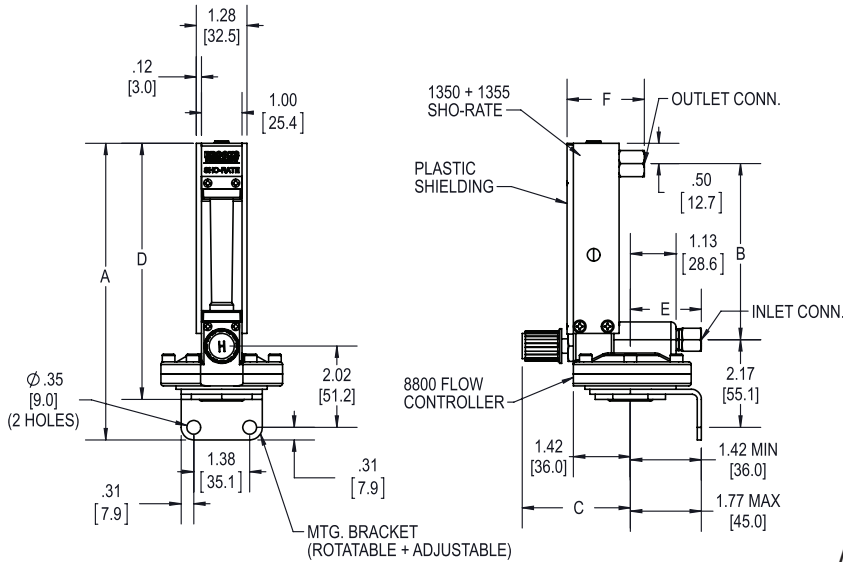


Dimension "A" Connection Adapter	
1/8" NPT	.625 [15.9]
1/4" NPT	.625 [15.9]
1/8" Compression	1.59 [40.3]
1/4" Compression	1.78 [45.1]
1/4" ID Hose	.72 [18.3]
1/4" Rc	.895 [22.7]
3/8" Rc	.895 [22.7]

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

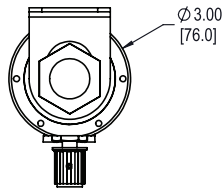


MODEL NO	SCALE LENGTH	A		B		C		C		D	
		INCH	MM	INCH	MM	OPEN INCH	OPEN MM	CLSD INCH	CLSD MM	INCH	MM
1350	65	7.31	185.7	4.34	110.3	2.79	70.8	2.65	67.2	6.38	162.0
1355	150	11.72	297.7	8.75	222.2	2.79	70.8	2.65	67.2	10.78	273.8

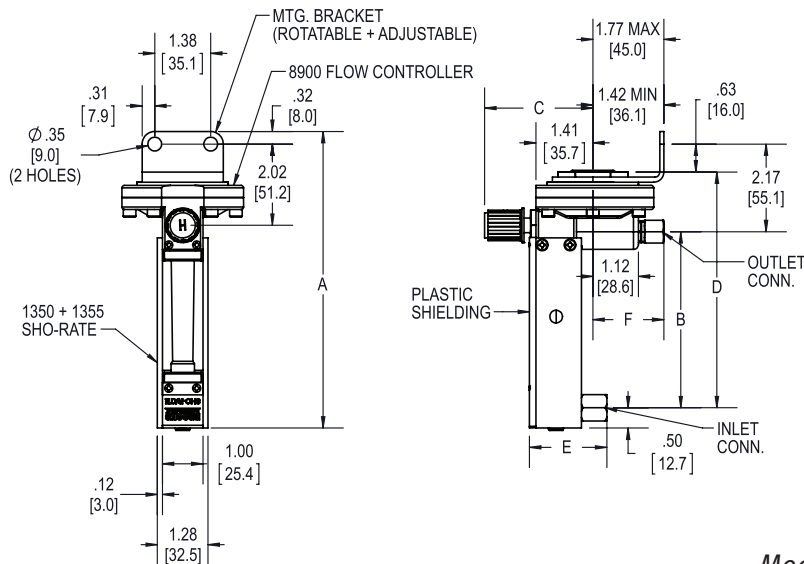


	INLET CONN.	INLET CONN.	OUTLET CONN.	OUTLET CONN.
CONN. SIZE	E	E	F	F
	INCH	MM	INCH	MM
1/8 NPT	1.85	46.9	1.91	48.4
1/4 NPT	1.13	28.6	1.91	48.4
1/8 COMP.	2.19	55.6	2.87	72.8
1/4 COMP.	2.28	57.8	3.06	77.6
1/4 I.D. HOSE	2.44	61.9	2.00	50.8
1/4 VCR (M)	N/A	N/A	2.19	55.6
1/4 Rc	2.10	53.3	2.18	55.3
3/8 Rc	2.60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

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



MODEL NO	SCALE LENGTH	A		B		C		C		D	
		INCH	MM	INCH	MM	OPEN INCH	OPEN MM	CLSD INCH	CLSD 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



	INLET CONN.	INLET CONN.	OUTLET CONN.	OUTLET CONN.
CONN. SIZE	E	E	F	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	
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	ZZ ⁴	Float Accuracy Scale Inscription
			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		

Code Description	Code Option	Option Description
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.

Code Description	Code Option	Fitting Material	Connection Size and Type
VII. End Fitting Material, Connection Size & Type	C ¹	316SS	1/8" NPT
	⁵ F ¹	316SS	1/8" NPT Thd.W/Locknut
	J ¹	316SS	1/4" NPT
	² / ² K ¹	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
	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 - Buna 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 III Valve - Low Flow - 316SS	
U ¹	Cartridge III Valve - Med Flow - 316SS	
V ¹	Cartridge III Valve - HighFlow - 316SS	

Code Description Code Option Option Description

IX. Valve Cavity/Controller Location & Connection Orientation		Valve/Controller	Connection Orientation	
		Location	Inlet	Outlet
	1 ¹	Inlet	Back	Back
	5 ¹	Outlet	Back	Back
	9	n/a	Back	Back
X. Alarms*	A ¹	None		
	B ⁶	1 Inductive Ring Sensor/Switch		
	C ⁶	2 Inductive Ring Sensors/Switches		
	D ⁶	1 Inductive Ring Sensor/Switch w/I.S. Relay 120V (bistable)		
	E	1 Inductive Ring Sensor/Switch w/I.S. Relay 240V (bistable)		
	F	2 Inductive Ring Sensors/Switches with I.S. Double Relays 120V (bistable)		
	G	2 Inductive Ring Sensors/Switches with I.S. Double Relays 240V (bistable)		

*Alarm options not available with Glass, Sapphire, or Tantalum Floats
 *Alarm options not available with the Stainless Steel Frame Option
 *Alarm options not available with Valve Type Option: Flow Controllers

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	
	H	UL / FM - Hazardous location	

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

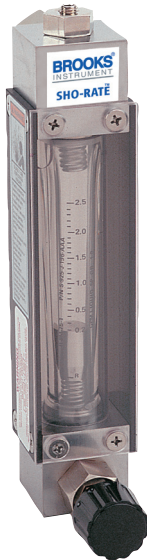
² The options indicated are not available with a CRN certification. Not valid for controllers.

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"

Sample Standard Model Code

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
1350	G	A	G	1B	E	C	A	1	A	A	A



Sho-Rate™ Model 1358

Sho-Rate™ Series

Model 1358

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

The 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.

- 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
- Single tube

Product Specifications

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)

Product Specifications (continued)

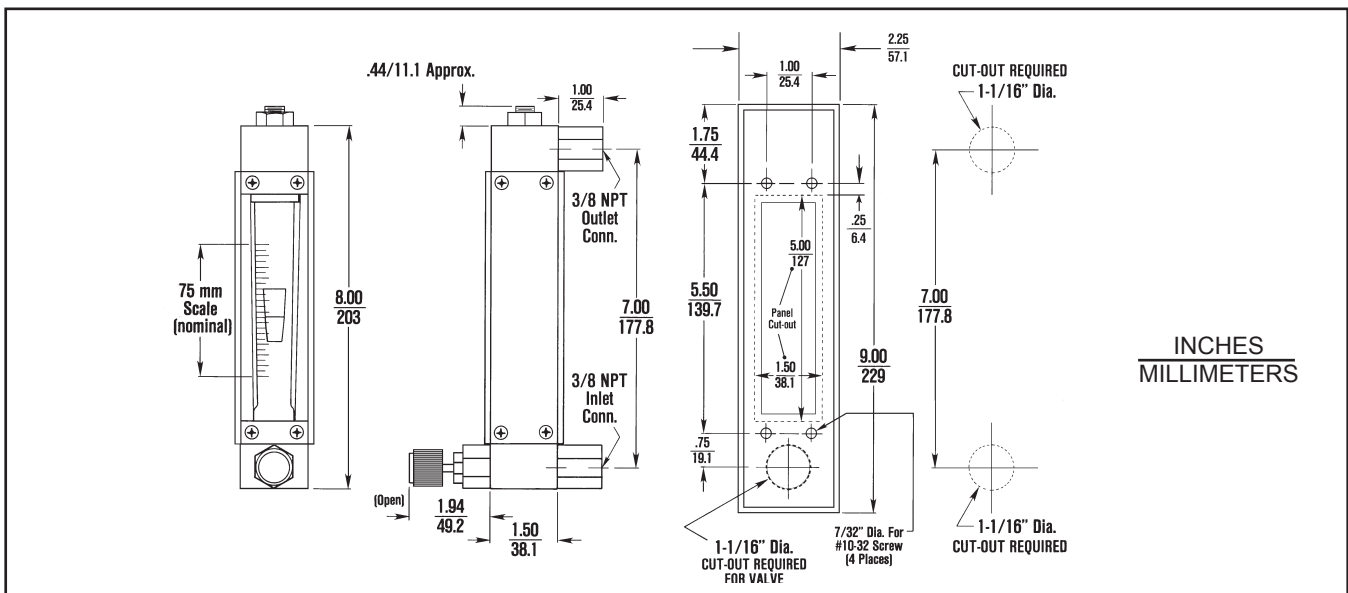
Materials of Construction:	
Metering Tube	Borosilicate Glass
Tube Packing	Standard: Neoprene™ (Brass meters); Viton-A® fluoroelastomers (316 Stainless Steel meters); Optional: EPM
O-rings	Standard: Buna-N (Brass meters); Viton-A® fluoroelastomers (316 Stainless Steel meters); Optional: EPM
Float	316 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



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 and 14.7 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
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 , Viton O-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
	J	Standard Valve Cavity with Stainless Steel Plug
	K	Standard Valve Cavity without Valve or Plug
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 Identification

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

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

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231	Казань (843)206-01-48	Новокузнецк (3843)20-46-81	Смоленск (4812)29-41-54
Архангельск (8182)63-90-72	Калининград (4012)72-03-81	Новосибирск (383)227-86-73	Сочи (862)225-72-31
Астрахань (8512)99-46-04	Калуга (4842)92-23-67	Омск (3812)21-46-40	Ставрополь (8652)20-65-13
Барнаул (3852)73-04-60	Кемерово (3842)65-04-62	Орел (4862)44-53-42	Сургут (3462)77-98-35
Белгород (4722)40-23-64	Киров (8332)68-02-04	Оренбург (3532)37-68-04	Тверь (4822)63-31-35
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Владивосток (423)249-28-31	Красноярск (391)204-63-61	Пермь (342)205-81-47	Тула (4872)74-02-29
Волгоград (844)278-03-48	Курск (4712)77-13-04	Ростов-на-Дону (863)308-18-15	Тюмень (3452)66-21-18
Вологда (8172)26-41-59	Липецк (4742)52-20-81	Рязань (4912)46-61-64	Ульяновск (8422)24-23-59
Воронеж (473)204-51-73	Магнитогорск (3519)55-03-13	Самара (846)206-03-16	Уфа (347)229-48-12
Екатеринбург (343)384-55-89	Москва (495)268-04-70	Санкт-Петербург (812)309-46-40	Хабаровск (4212)92-98-04
Иваново (4932)77-34-06	Мурманск (8152)59-64-93	Саратов (845)249-38-78	Челябинск (351)202-03-61
Ижевск (3412)26-03-58	Набережные Челны (8552)20-53-41	Севастополь (8692)22-31-93	Череповец (8202)49-02-64
Иркутск (395)279-98-46	Нижний Новгород (831)429-08-12	Симферополь (3652)67-13-56	Ярославль (4852)69-52-93
Россия (495)268-04-70	Киргизия (996)312-96-26-47	Казахстан (7172)727-132	