

Mass Flow Controller Market Size by Metal & Elastomer Seal, Flow Rate (<25, 25 - 1k, >1k SLM), Gas & Liquid, Thermal, Differential Pressure & Coriolis, Stainless Steel, Wafer Cleaning, Plasma Etching, Catalyst Research, Aeration - Global Forecast to 2029

Market Report | 2024-09-23 | 236 pages | MarketsandMarkets

AVAILABLE LICENSES:

- Single User \$4950.00
- Multi User \$6650.00
- Corporate License \$8150.00
- Enterprise Site License \$10000.00

Report description:

The global mass flow controller market was valued at USD 1.63 billion in 2024 and is projected to reach USD 2.32 billion by 2029; it is expected to register a CAGR of 7.2% during the forecast period. Rising focus on hydrogen fuel cells is driving the growth of the mass flow controller market. As fuel cells continue to gain prominence as a clean and efficient energy source, the need mass flow comntroller during fuel cell operation has become critical. Whereas complexities associated in integrating mass flow controllers with other technologies posses challenge for the growth of the mass flow controller market.

"The Coriolis mass flow controller is expected to grow at the highest CAGR during the forecast period."

A Coriolis mass flow controller has been seen as the only flow sensor that actually measures the mass flow in a directly manner. This distinctive capability underpins the accuracy of Coriolis flow controllers: They quantify the mass flow rate of a fluid in a straightforward manner, that is without having to integrate or include other properties of the fluid into the measurement. This means that the Coriolis flow controllers offers accurate mass flow rates irrespective of changes in density, viscosity or specific heat of the flowing liquid or gas. For this reason, Coriolis mass flow controllers remain insensitive to shifts in properties of the fluid.

"Digital mass flow controllers segment is likely to have a larger market share during the forecast period."

Digital mass flow controllers use highly developed sensors, microprocessors and complex algorithms, and thus boast of higher accuracy in the measurement of flow rates and control of the same. These applications include manufacturing of semiconductors

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

besides other precision processes like those used in the manufacture of chemicals. Additionally, the integration of the digital technologies leads to the enhanced control possibilities, automatic control, calibration as well as remote control, all of which highly enhances the overall operation. Digital mass flow controllers also are more constants and stable, has less maintenance requirement and has lower run cost due to its measurement drift and self-calibration capabilities.

"The Asia Pacific segment is likely to grow at the second highest CAGR during the forecast period."

The market in Asia Pacific is expected to witness the second highest CAGR of 28.4% during the forecast period. The region witnessed substantial investments in semiconductor manufacturing infrastructure, driven by both government initiatives and private enterprises aiming to establish semiconductor manufacturing plants.. Increasing investments in the semiconductor industry, rising demand for efficient devices for measurement and control, and industrial automation are among the major factors driving the market growth in this region. Most key players operating in the mass flow controller market have their production capacity in Asia Pacific, as the production cost in this region is lower than that of other regions

Breakdown of primaries

The study contains insights from various industry experts, ranging from component suppliers to Tier 1 companies and OEMs. The break-up of the primaries is as follows:

- By Company Type - Tier 1 - 40%, Tier 2 - 35%, Tier 3 - 25%
- By Designation- C-level Executives - 48%, Directors - 33%, Others - 19%
- By Region-North America - 35%, Europe - 18%, Asia Pacific - 40%, RoW - 7%

The mass flow controller market is dominated by a few globally established players such as HORIBA, Ltd. (Japan), Sensirion AG (Switzerland), MKS Instruments (US), Teledyne Technologies Incorporated (US), Bronkhorst (Netherlands), Brooks Instrument (US) Christian Burkert GmbH & Co. KG (Germany), Sierra Instruments, Inc. (US), Alicat Scientific Inc. (US), and PARKER HANIFIN CORP (US). The study includes an in-depth competitive analysis of these key players in the mass flow controller market, with their company profiles, recent developments, and key market strategies.

Research Coverage:

The report segments the mas flow controller market and forecasts its size by product specification, material type, media type, flow rate, technology, connectivity, end-user industry and region. The report also discusses the drivers, restraints, opportunities, and challenges pertaining to the market. It gives a detailed view of the market across four main regions-North America, Europe, Asia Pacific, and RoW. Supply chain analysis has been included in the report, along with the key players and their competitive analysis in the mass flow controller market.

Key Benefits to Buy the Report:

- Analysis of key drivers (Expansion of solar cell manufacturing, increased investments in semiconductors and electronics production, and growing focus on hydrogen fuel cells as renewable energy source). Restraint (Calibration dependency), Opportunities (Use of mass flow controllers in space applications, Government initiatives to boost semiconductor manufacturing in Asia Pacific), Challenges (complexities associated in integration with other technologies)
- Product Development/Innovation: Detailed insights on upcoming technologies, research and development activities, and new product launches in the mass flow controller market.
- Market Development: Comprehensive information about lucrative markets - the report analyses the mass flow controller market across varied regions.
- Market Diversification: Exhaustive information about new products and services, untapped geographies, recent developments, and investments in the mass flow controller market.

Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players as HORIBA, Ltd. (Japan), Sensirion AG (Switzerland), MKS Instruments (US), Teledyne Technologies Incorporated (US), Bronkhorst

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

(Netherlands), Brooks Instrument (US) Christian Burkert GmbH & Co. KG (Germany), Sierra Instruments, Inc. (US), Alicat Scientific Inc. (US), and PARKER HANIFIN CORP (US) among others in the mass flow controller market.

Table of Contents:

1	INTRODUCTION	23
1.1	STUDY OBJECTIVES	23
1.2	MARKET DEFINITION	23
1.3	STUDY SCOPE	24
1.3.1	MARKETS COVERED AND REGIONAL SCOPE	24
1.3.2	INCLUSIONS AND EXCLUSIONS	25
1.3.3	YEARS CONSIDERED	25
1.4	CURRENCY CONSIDERED	26
1.5	LIMITATIONS	26
1.6	UNITS CONSIDERED	26
1.7	STAKEHOLDERS	26
1.8	SUMMARY OF CHANGES	27
2	RESEARCH METHODOLOGY	28
2.1	RESEARCH DATA	28
2.1.1	SECONDARY DATA	29
2.1.1.1	List of key secondary sources	29
2.1.1.2	Key data from secondary sources	29
2.1.2	PRIMARY DATA	30
2.1.2.1	List of key interview participants	30
2.1.2.2	Breakdown of primaries	30
2.1.2.3	Key data from primary sources	31
2.1.2.4	Key industry insights	31
2.1.3	SECONDARY AND PRIMARY RESEARCH	32
2.2	MARKET SIZE ESTIMATION	32
2.2.1	BOTTOM-UP APPROACH	33
2.2.1.1	Approach to estimate market size using bottom-up analysis	33
2.2.2	TOP-DOWN APPROACH	34
2.2.2.1	Approach to estimate market size using top-down analysis	34
2.3	DATA TRIANGULATION	35
2.4	RESEARCH ASSUMPTIONS	36
2.5	RESEARCH LIMITATIONS	36
2.6	RISK ANALYSIS	37
3	EXECUTIVE SUMMARY	38
?		
4	PREMIUM INSIGHTS	42
4.1	ATTRACTIVE GROWTH OPPORTUNITIES FOR PLAYERS IN MASS FLOW CONTROLLER MARKET	42
4.2	MASS FLOW CONTROLLER MARKET, BY MATERIAL	42
4.3	MASS FLOW CONTROLLER MARKET, BY FLOW RATE	43
4.4	MASS FLOW CONTROLLER MARKET, BY MEDIA TYPE	43
4.5	MASS FLOW CONTROLLER MARKET, BY END-USE INDUSTRY	44
4.6	MASS FLOW CONTROLLER MARKET, BY REGION	44
4.7	MASS FLOW CONTROLLER MARKET, BY TECHNOLOGY	45
4.8	MASS FLOW CONTROLLER MARKET, BY CONNECTIVITY	45

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

4.9	MASS FLOW CONTROLLER MARKET, BY COUNTRY	46
5	MARKET OVERVIEW	47
5.1	INTRODUCTION	47
5.2	MARKET DYNAMICS	47
5.2.1	DRIVERS	48
5.2.1.1	Rising emphasis on developing solar projects	48
5.2.1.2	Expanding semiconductor industry	48
5.2.1.3	Generation of renewable energy with hydrogen fuel cells	48
5.2.2	RESTRAINTS	49
5.2.2.1	Dependency on calibration	49
5.2.3	OPPORTUNITIES	50
5.2.3.1	Application in space stations	50
5.2.3.2	Government-led initiatives to boost semiconductor manufacturing	50
5.2.4	CHALLENGES	51
5.2.4.1	Complexities associated with integrating mass flow controllers within other devices	51
5.3	TRENDS/DISRUPTIONS IMPACTING CUSTOMER BUSINESS	52
5.4	PRICING ANALYSIS	53
5.4.1	AVERAGE SELLING PRICE TREND OF KEY PLAYERS, BY CONNECTIVITY	53
5.4.2	AVERAGE SELLING PRICE TREND OF MASS FLOW CONTROLLERS, 2019-2023	54
5.4.3	INDICATIVE PRICING TREND, BY REGION	54
5.5	VALUE CHAIN ANALYSIS	55
5.6	ECOSYSTEM ANALYSIS	57
5.7	INVESTMENT AND FUNDING SCENARIO	59
5.8	IMPACT OF AI/GENERATIVE AI ON MASS FLOW CONTROLLER MARKET	59
5.8.1	INTRODUCTION	59
5.8.2	AI/GENERATIVE AI-SPECIFIC USE CASES	59
?		
5.9	TECHNOLOGY ANALYSIS	61
5.9.1	KEY TECHNOLOGIES	61
5.9.1.1	Micro-electro-mechanical systems	61
5.9.1.2	IoT	61
5.9.2	COMPLIMENTARY TECHNOLOGIES	62
5.9.2.1	Industrial ethernet	62
5.9.2.2	Digital signal processing	62
5.9.3	ADJACENT TECHNOLOGIES	62
5.9.3.1	Nanotechnology	62
5.10	PATENT ANALYSIS	63
5.11	TRADE ANALYSIS	65
5.11.1	IMPORT DATA (HS CODE 902610)	65
5.11.2	EXPORT DATA (HS CODE 902610)	66
5.12	KEY CONFERENCES AND EVENTS, 2023-2024	67
5.13	CASE STUDY ANALYSIS	68
5.13.1	ILS COLLABORATED WITH ALICAT TO ADDRESS MASS FLOW CONTROLLERS SOURCING-RELATED CHALLENGES	68
5.13.2	HORIBA HELPED NOAA WITH Z500 FLOW CONTROLLERS THAT PROVIDED STABLE AND CONSISTENT FLOW RATE	68
5.13.3	ALICAT ASSISTED VALCO INTEGRATE MULTIPLE BASIS OEM MASS FLOW CONTROLLERS INTO DYNACAL DEVICES THAT MANAGED LOW GAS FLOW RATES	69

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

5.13.4	BROOKS ASSISTED RAHR WITH SLAMF MASS FLOW CONTROLLERS THAT IMPROVED BREWERIES' PRODUCTION AND EFFICIENCY	69
5.13.5	DURALAR PARTNERED WITH ALICAT TO ENGINEER CORROSION-RESISTANT FLOW CONTROLLER WITH CUSTOM GAS CALIBRATION	70
5.14	REGULATORY LANDSCAPE	70
5.14.1	REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS	71
5.14.2	STANDARDS	73
5.15	PORTER'S FIVE FORCES ANALYSIS	75
5.15.1	THREAT OF NEW ENTRANTS	76
5.15.2	THREAT OF SUBSTITUTES	76
5.15.3	BARGAINING POWER OF BUYERS	76
5.15.4	BARGAINING POWER OF SUPPLIERS	77
5.15.5	INTENSITY OF COMPETITIVE RIVALRY	77
5.16	KEY STAKEHOLDERS AND BUYING CRITERIA	78
5.16.1	KEY STAKEHOLDERS IN BUYING PROCESS	78
5.16.2	BUYING CRITERIA	79
6	MASS FLOW CONTROLLER MARKET, BY PRODUCT SPECIFICATION	80
6.1	INTRODUCTION	81
6.2	DISPLAYS	81
6.2.1	WITH DISPLAY	82
6.2.1.1	Enhanced control through immediate visual monitoring to drive market	82
6.2.2	WITHOUT DISPLAY	82
6.2.2.1	Low manufacturing costs to spur demand	82
6.3	SEALS	83
6.3.1	METALS	84
6.3.1.1	Ability to withstand harsh environmental conditions to boost demand	84
6.3.2	ELASTOMER	84
6.3.2.1	Reduced friction and minimal gas leakages to drive market	84
6.4	ACCURACY	85
6.4.1	STANDARD	85
6.4.1.1	Increasing adoption in HVAC systems and non-critical laboratory environments to fuel market growth	85
6.4.2	HIGH	85
6.4.2.1	Rising adoption in semiconductor manufacturing to accelerate demand	85
7	MASS FLOW CONTROLLER MARKET, BY MATERIAL	86
7.1	INTRODUCTION	87
7.2	STAINLESS STEEL	88
7.2.1	HIGH RESISTANCE TO CORROSION AND SULFIDES TO DRIVE MARKET	88
7.3	ALLOYS	89
7.3.1	RISING NEED FOR ALLOYS CONTAINING CHROME AND MOLYBDENUM TO BOOST DEMAND	89
7.4	OTHER MATERIALS	89
8	MASS FLOW CONTROLLER MARKET, BY MEDIA TYPE	90
8.1	INTRODUCTION	91
8.2	GAS	93
8.2.1	GROWING ADOPTION FOR CATALYST RESEARCH TO SPUR DEMAND	93
8.3	LIQUID	93
8.3.1	ABILITY TO OFFER FAST AND ACCURATE MEASURING SIGNALS TO BOOST DEMAND	93

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

9	MASS FLOW CONTROLLER MARKET, BY FLOW RATE	94
9.1	INTRODUCTION	95
9.2	LOW	96
9.2.1	INCREASING APPLICATION IN MANUFACTURING SEMICONDUCTOR CHIPS TO DRIVE MARKET	96
	?	
9.3	MEDIUM	98
9.3.1	RIISING USE IN FLUID AND GAS MIXING AND DOSING SYSTEMS TO SPUR DEMAND	98
9.4	HIGH	99
9.4.1	GROWING APPLICATION IN GAS MEASUREMENT TO ACCELERATE DEMAND	99
10	MASS FLOW CONTROLLER MARKET, BY TECHNOLOGY	101
10.1	INTRODUCTION	102
10.2	THERMAL	103
10.2.1	ABILITY TO HANDLE DIVERSE RANGE OF GASES WITH VARYING THERMAL PROPERTIES TO DRIVE MARKET	103
10.3	DIFFERENTIAL PRESSURE	104
10.3.1	INCREASING APPLICATION IN SEMICONDUCTOR MANUFACTURING, CHEMICAL PROCESSING, AND AEROSPACE TESTING TO BOOST DEMAND	104
10.4	CORIOLIS	104
10.4.1	ELIMINATION OF ADDITIONAL COMPENSATION FOR TEMPERATURE OR PRESSURE VARIATIONS TO SPUR DEMAND	104
11	MASS FLOW CONTROLLER MARKET, BY CONNECTIVITY	106
11.1	INTRODUCTION	107
11.2	ANALOG	108
11.2.1	INCREASING DEMAND FOR COST-EFFECTIVE CONTROL SYSTEMS TO SPUR DEMAND	108
11.3	DIGITAL	108
11.3.1	IMPLEMENTATION OF ADVANCED MICROPROCESSOR TECHNOLOGY TO OBTAIN REAL-TIME MONITORING TO ACCELERATE DEMAND	108
11.3.2	PROFIBUS	109
11.3.3	RS-485	109
11.3.4	PROFINET	110
11.3.5	ETHERCAT	110
11.3.6	ETHERNET/IP	110
11.3.7	MODBUS RTU	111
11.3.8	MODBUS TCP/IP	111
11.3.9	DEVICENET	112
11.3.10	FOUNDATION FIELDBUS	112
12	MASS FLOW CONTROLLER MARKET, BY END-USE INDUSTRY	113
12.1	INTRODUCTION	114
12.2	SEMICONDUCTORS	116
12.2.1	INCREASING APPLICATION FOR WAFER CLEANING AND PCB TREATMENT TO BOOST DEMAND	116
12.2.2	WAFER CLEANING	116
12.2.3	THIN FILM DEPOSITION	116
12.2.4	SPRAY COATING	116
12.2.5	PLASMA ETCHING	116
12.2.6	VACUUM SPUTTERING	116
12.3	OIL & GAS	118
12.3.1	RIISING ADOPTION FOR UPSTREAM PRODUCTION AND PIPELINE DETECTION TO SPUR DEMAND	118
12.3.2	ODORIZATION OF BIOGAS	118
12.3.3	HEAVY FUEL OIL ADDITIVE DOSING	118

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

12.3.4	FRACKING	119
12.4	CHEMICALS	120
12.4.1	INCREASING APPLICATION IN CHEMICAL REACTORS AND GAS SAMPLING TO DRIVE MARKET	120
12.4.2	CATALYST RESEARCH	120
12.4.3	LIQUEFIED GAS DOSING	120
12.5	PHARMACEUTICALS	122
12.5.1	IMPROVED ACCURACY OF VENTILATION DEVICES TO DRIVE MARKET	122
12.5.2	PILL COATING	122
12.5.3	CONTINUOUS MANUFACTURING	122
12.6	METALS & MINING	124
12.6.1	REDUCED WASTAGE AND DOWNTIME TO SPUR DEMAND	124
12.6.2	SELECTIVE LASER MELTING	124
12.6.3	SMEETING	124
12.7	WATER & WASTEWATER TREATMENT	126
12.7.1	EXPANDING GLOBAL POPULATION AND RAPID INDUSTRIALIZATION TO DRIVE DEMAND	126
12.7.2	PH CONTROL	126
12.8	FOOD & BEVERAGES	128
12.8.1	GROWING APPLICATION FOR ADJUSTING PH-LEVEL AND BLANKETING OF INERT GASES TO BOOST DEMAND	128
12.8.2	AERATION	129
12.8.3	ASEPTIC PACKAGING	129
12.9	OTHER END-USE INDUSTRIES	130
12.9.1	LAMBDA PROBE TESTING	130
13	MASS FLOW CONTROLLER MARKET, BY REGION	133
13.1	INTRODUCTION	134
13.2	NORTH AMERICA	136
13.2.1	MACROECONOMIC OUTLOOK FOR NORTH AMERICA	136
13.2.2	US	139
13.2.2.1	Growing application for catalyst research and spray coating to drive market	139
13.2.3	CANADA	140
13.2.3.1	Expanding pharmaceutical and medical research industries to spur demand	140
13.2.4	MEXICO	142
13.2.4.1	Rising industrial expansion to accelerate demand	142
13.3	EUROPE	143
13.3.1	MACROECONOMIC OUTLOOK FOR EUROPE	143
13.3.2	GERMANY	146
13.3.2.1	Government-led initiatives to address energy crisis to boost demand	146
13.3.3	UK	148
13.3.3.1	Increasing need for efficient control mechanisms in pharmaceutical and semiconductor industries to drive market	148
13.3.4	FRANCE	149
13.3.4.1	Growing need for chemicals in metal & mining and automotive industries to fuel market growth	149
13.3.5	REST OF EUROPE	150
13.4	ASIA PACIFIC	151
13.4.1	MACROECONOMIC OUTLOOK FOR ASIA PACIFIC	151
13.4.2	CHINA	154
13.4.2.1	Government-led initiatives to support connected technologies to offer lucrative growth opportunities	154
13.4.3	INDIA	156

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

13.4.3.1	Rising inflow of FDIs in semiconductor industry to accelerate demand	156
13.4.4	JAPAN	157
13.4.4.1	Growing emphasis on innovating mass flow controllers to offer lucrative growth opportunities	157
13.4.5	TAIWAN	158
13.4.5.1	Presence of leading players to drive market	158
13.4.6	SOUTH KOREA	159
13.4.6.1	Thriving consumer electronics industry to boost demand	159
13.4.7	REST OF ASIA PACIFIC	160
13.5	ROW	161
13.5.1	MACROECONOMIC OUTLOOK FOR ROW	161
13.5.2	SOUTH AMERICA	164
13.5.2.1	Growing demand in semiconductor, chemical, and oil & gas industries to fuel market growth	164
13.5.3	MIDDLE EAST & AFRICA	165
13.5.3.1	Rising economic and industrial transformation to offer lucrative growth opportunities	165
13.5.3.2	GCC	165
13.5.3.3	Rest of Middle East & Africa	165
	?	
14	COMPETITIVE LANDSCAPE	167
14.1	OVERVIEW	167
14.2	KEY PLAYER STRATEGIES/RIGHT TO WIN, 2022-2024	167
14.3	REVENUE ANALYSIS, 2019-2023	168
14.4	MARKET SHARE ANALYSIS, 2023	169
14.5	COMPANY VALUATION AND FINANCIAL METRICS	172
14.6	BRAND/PRODUCT COMPARISON	173
14.7	COMPANY EVALUATION MATRIX: KEY PLAYERS, 2023	173
14.7.1	STARS	173
14.7.2	EMERGING LEADERS	173
14.7.3	PERVASIVE PLAYERS	174
14.7.4	PARTICIPANTS	174
14.7.5	COMPANY FOOTPRINT: KEY PLAYERS, 2023	175
14.7.5.1	Company footprint	175
14.7.5.2	Material footprint	176
14.7.5.3	Media type footprint	177
14.7.5.4	End-use industry footprint	178
14.7.5.5	Region footprint	179
14.8	COMPANY EVALUATION MATRIX: STARTUPS/SMES, 2023	180
14.8.1	PROGRESSIVE COMPANIES	180
14.8.2	RESPONSIVE COMPANIES	180
14.8.3	DYNAMIC COMPANIES	180
14.8.4	STARTING BLOCKS	181
14.8.5	COMPETITIVE BENCHMARKING: STARTUPS/SMES, 2023	182
14.8.5.1	Detailed list of key startups/SMEs	182
14.8.5.2	Competitive benchmarking of key startups/SMEs	183
14.9	COMPETITIVE SCENARIO	184
14.9.1	PRODUCT LAUNCHES	184
14.9.2	DEALS	186
15	COMPANY PROFILES	187

15.1	KEY PLAYERS	187
15.1.1	HORIBA, LTD.	187
15.1.1.1	Business overview	187
15.1.1.2	Products/Solutions/Services offered	188
15.1.1.3	Recent developments	189
15.1.1.3.1	Expansions	189
15.1.1.4	MnM view	189
15.1.1.4.1	Key strengths/Right to win	189
15.1.1.4.2	Strategic choices	189
15.1.1.4.3	Weaknesses/Competitive threats	189
?		
15.1.2	SENSIRION AG	190
15.1.2.1	Business overview	190
15.1.2.2	Products/Solutions/Services offered	191
15.1.2.3	Recent developments	192
15.1.2.3.1	Product launches/Developments	192
15.1.2.4	MnM view	192
15.1.2.4.1	Key strengths/Right to win	192
15.1.2.4.2	Strategic choices	192
15.1.2.4.3	Weaknesses/Competitive threats	192
15.1.3	MKS INSTRUMENTS	193
15.1.3.1	Business overview	193
15.1.3.2	Products/Solutions/Services offered	194
15.1.3.3	MnM view	195
15.1.3.3.1	Key strengths/Right to win	195
15.1.3.3.2	Strategic choices	195
15.1.3.3.3	Weaknesses/Competitive threats	195
15.1.4	TELEDYNE TECHNOLOGIES INCORPORATED	196
15.1.4.1	Business overview	196
15.1.4.2	Products/Solutions/Services offered	197
15.1.4.3	Recent developments	198
15.1.4.3.1	Deals	198
15.1.4.4	MnM view	198
15.1.4.4.1	Key strengths/Right to win	198
15.1.4.4.2	Strategic choices	198
15.1.4.4.3	Weaknesses/Competitive threats	198
15.1.5	BRONKHORST	199
15.1.5.1	Business overview	199
15.1.5.2	Products/Solutions/Services offered	199
15.1.5.3	Recent developments	200
15.1.5.3.1	Product launches/Developments	200
15.1.5.4	MnM view	201
15.1.5.4.1	Key strengths/Right to win	201
15.1.5.4.2	Strategic choices	201
15.1.5.4.3	Weaknesses/Competitive threats	201
15.1.6	BROOKS INSTRUMENT	202
15.1.6.1	Business overview	202

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

15.1.6.2	Products/Solutions/Services offered	202
15.1.6.3	Recent developments	203
15.1.6.3.1	Product launches/developments	203
15.1.6.3.2	Deals	204
?		
15.1.7	CHRISTIAN BURKERT GMBH & CO. KG	205
15.1.7.1	Business overview	205
15.1.7.2	Products/Solutions/Services offered	205
15.1.7.3	Recent developments	206
15.1.8	SIERRA INSTRUMENTS, INC.	207
15.1.8.1	Business overview	207
15.1.8.2	Products/Solutions/Services offered	207
15.1.8.3	Recent developments	208
15.1.8.3.1	Product launches/Developments	208
15.1.9	ALICAT SCIENTIFIC, INC.	209
15.1.9.1	Business overview	209
15.1.9.2	Products/Solutions/Services offered	209
15.1.9.3	Recent developments	210
15.1.9.3.1	Product launches/Developments	210
15.1.10	PARKER HANNIFIN CORP	211
15.1.10.1	Business overview	211
15.1.10.2	Products/Solutions/Services offered	212
15.2	OTHER PLAYERS	213
15.2.1	TOKYO KEISO CO., LTD.	213
15.2.2	VOGT LIN INSTRUMENTS GMBH	214
15.2.3	AZBIL CORPORATION	215
15.2.4	SABLE SYSTEMS INTERNATIONAL	216
15.2.5	KOFLOC	216
15.2.6	AALBORG	217
15.2.7	AXETRIS AG	218
15.2.8	DWYER INSTRUMENTS, LLC.	218
15.2.9	FCON CO., LTD.	219
15.2.10	KELLY PNEUMATICS, INC.	219
15.2.11	IMI	220
15.2.12	PROTERIAL, LTD.	220
15.2.13	MTI CORPORATION	221
15.2.14	OHKURA ELECTRIC CO., LTD.	222
15.2.15	DAKOTA INSTRUMENTS, INC.	223
16	ADJACENT & RELATED MARKETS	224
16.1	INTRODUCTION	224
16.2	MARKET SCOPE	224
16.3	SEMICONDUCTOR MANUFACTURING EQUIPMENT MARKET, BY FAB FACILITY EQUIPMENT	225
16.3.1	INTRODUCTION	225
?		
16.4	AUTOMATION	226
16.4.1	INCREASING DEMAND FOR FACTORY AUTOMATION IN SEMICONDUCTOR INDUSTRY TO BOOST DEMAND	226

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

16.5	CHEMICAL CONTROL	226
16.5.1	RISING DEMAND FOR HIGH-QUALITY PRODUCTS TO DRIVE MARKET	226
16.6	GAS CONTROL	226
16.6.1	NECESSITY TO PROVIDE PRECISE CONTROL AND MIXING OF INDUSTRIAL PROCESS GASES TO FUEL MARKET GROWTH	226
16.7	OTHER FAB FACILITY EQUIPMENT	226
17	APPENDIX	227
17.1	INSIGHTS OF INDUSTRY EXPERTS	227
17.2	DISCUSSION GUIDE	228
17.3	KNOWLEDGESTORE: MARKETSANDMARKETS? SUBSCRIPTION PORTAL	232
17.4	CUSTOMIZATION OPTIONS	234
17.5	RELATED REPORTS	234
17.6	AUTHOR DETAILS	235

Mass Flow Controller Market Size by Metal & Elastomer Seal, Flow Rate (<25, 25 - 1k, >1k SLM), Gas & Liquid, Thermal, Differential Pressure & Coriolis, Stainless Steel, Wafer Cleaning, Plasma Etching, Catalyst Research, Aeration - Global Forecast to 2029

Market Report | 2024-09-23 | 236 pages | MarketsandMarkets

To place an Order with Scotts International:

- ☐ - Print this form
- ☐ - Complete the relevant blank fields and sign
- ☐ - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User	\$4950.00
	Multi User	\$6650.00
	Corporate License	\$8150.00
	Enterprise Site License	\$10000.00
		VAT
		Total

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*	<input type="text"/>	Phone*	<input type="text"/>
First Name*	<input type="text"/>	Last Name*	<input type="text"/>
Job title*	<input type="text"/>		
Company Name*	<input type="text"/>	EU Vat / Tax ID / NIP number*	<input type="text"/>
Address*	<input type="text"/>	City*	<input type="text"/>

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Zip Code*

Country*

Date

Signature