

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

**FORM S-8
REGISTRATION STATEMENT**

*Under
The Securities Act of 1933*

FLUIDIGM CORPORATION

(Exact name of Registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

77-0513190
(I.R.S. Employer
Identification Number)

**7000 Shoreline Court, Suite 100
South San Francisco, California 94080
(650) 266-6000**

(Address of principal executive offices, including zip code)

2011 Equity Incentive Plan
(Full title of the plan)

**Gajus V. Worthington
President and Chief Executive Officer
7000 Shoreline Court, Suite 100
South San Francisco, California 94080
(650) 266-6000**

(Name, address and telephone number, including area code, of agent for service)

Copy to:

**Robert F. Kornegay
Wilson Sonsini Goodrich & Rosati, P.C.
650 Page Mill Road
Palo Alto, California 94304
(650) 493-9300**

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer (do not check if a smaller reporting company)

Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common stock, \$0.001 par value per share, under the 2011 Equity Incentive Plan	1,000,000 (2)	\$ 18.80 (3)	\$18,800,000.00	\$ 2,564.32

- (1) Pursuant to Rule 416(a) of the Securities Act of 1933, as amended, this Registration Statement shall also cover any additional shares of the Registrant's common stock that become issuable under the 2011 Equity Incentive Plan ("2011 Plan") by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without receipt of consideration that increases the number of the Registrant's outstanding shares of common stock.
- (2) Represents shares of the Registrant's common stock that were automatically added to the shares authorized for issuance under the 2011 Plan on January 1, 2013 pursuant to an "evergreen" provision contained in the 2011 Plan. Pursuant to such provision, on January 1st of each fiscal year beginning with the 2012 fiscal year, the number of shares available for issuance under the 2011 Plan is automatically increased in an amount equal to the least of (i) 1,000,000 shares of the Registrant's common stock, (ii) four percent (4%) of the number of shares of the Registrant's common stock outstanding on December 31st of the preceding fiscal year, or (iii) such number of shares of the Registrant's common stock determined by the Registrant's board of directors.
- (3) Estimated in accordance with paragraphs (c) and (h) of Rule 457 solely for the purpose of calculating the total registration fee. Computation based on the average of the high and low prices of the Registrant's common stock as reported on the NASDAQ Global Market on March 5, 2013.

INCORPORATION BY REFERENCE OF CONTENTS OF

REGISTRATION STATEMENT ON FORM S-8 NOS. 333-172206, 333-180363

This Registration Statement is being filed for the purpose of increasing the number of securities of the same class as other securities for which Registration Statements on Form S-8 relating to the same benefit plan are effective. The Registrant previously registered shares of its common stock for issuance under the 2011 Plan under Registration Statements on Form S-8 filed with the Securities and Exchange Commission (the "Commission") on February 11, 2011 (File No. 333-172206) and March 26, 2012 (File No. 333-180363). Pursuant to General Instruction E to Form S-8, this Registration Statement hereby incorporates by reference the contents of those Registration Statements referenced above.

**PART II
INFORMATION REQUIRED IN THE REGISTRATION STATEMENT**

ITEM 3. INCORPORATION OF DOCUMENTS BY REFERENCE.

The Registrant hereby incorporates by reference in this Registration Statement the following documents and information previously filed with the Commission:

- (1) The Registrant's annual report on Form 10-K for the fiscal year ended December 31, 2012 (the "Annual Report"), filed with the Commission on March 12, 2013; and
- (2) All other reports filed pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") since the end of the fiscal year covered by the Annual Report.
- (3) The description of the Registrant's Common Stock contained in the Registrant's Registration Statement on Form 8-A (File No. 001-34180) filed with the Commission on February 7, 2011, pursuant to Section 12(b) of the Exchange Act, including any amendment or report filed for the purpose of updating such description.

All documents filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act on or after the date of this Registration Statement and prior to the filing of a post-effective amendment to this Registration Statement that indicates that all securities offered have been sold or that deregisters all securities then remaining unsold shall be deemed to be incorporated by reference in this Registration Statement and to be part hereof from the date of filing of such documents; *provided, however*, that documents or information deemed to have been furnished and not filed in accordance with the rules of the Commission shall not be deemed incorporated by reference into this Registration Statement.

Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any subsequently filed document which also is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

ITEM 8. EXHIBITS.

<u>Exhibit Number</u>	<u>Description</u>
4.1*	Specimen common stock certificate of Registrant (which is incorporated herein by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1 (Registration No. 333-170965), as amended ("Registrant's Form S-1"))
4.4*	2011 Equity Incentive Plan and forms of agreement thereunder (which are incorporated herein by reference to Exhibit 10.4 and 10.4A to the Registrant's Form S-1)
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation
23.1	Consent of Independent Registered Public Accounting Firm
23.2	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (contained in Exhibit 5.1 hereto)
24.1	Power of Attorney (contained on signature page hereto)

* Incorporated by reference to exhibits filed with the Registrant's Registration Statement on Form S-1, as amended (Registration No. 333-170965), as declared effective on February 9, 2011.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of South San Francisco, State of California, on March 12, 2013.

FLUIDIGM CORPORATION

By: /s/ Gajus V. Worthington
Gajus V. Worthington
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Gajus V. Worthington and Vikram Jog and each of them, as his true and lawful attorney in fact and agent with full power of substitution, for him in any and all capacities, to sign any and all amendments to this Registration Statement on Form S-8 (including post effective amendments), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney in fact, proxy and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney in fact, proxy and agent, or his substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement on Form S-8 has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Gajus V. Worthington</u> Gajus V. Worthington	President, Chief Executive Officer and Director (Principal Executive Officer)	March 12, 2013
<u>/s/ Vikram Jog</u> Vikram Jog	Chief Financial Officer (Principal Accounting and Financial Officer)	March 12, 2013
<u>/s/ Samuel D. Colella</u> Samuel D. Colella	Director	March 12, 2013
<u>/s/ Evan Jones</u> Evan Jones	Director	March 12, 2013
<u>/s/ Patrick S. Jones</u> Patrick S. Jones	Director	March 9, 2013
<u>/s/ Gerhard F. Burbach</u> Gerhard F. Burbach	Director	March 8, 2013
<u>/s/ John A. Young</u> John A. Young	Director	March 12, 2013

INDEX TO EXHIBITS

<u>Exhibit Number</u>	<u>Description</u>
4.1*	Specimen common stock certificate of Registrant (which is incorporated herein by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1 (Registration No. 333-170965), as amended ("Registrant's Form S-1"))
4.4*	2011 Equity Incentive Plan and forms of agreement thereunder (which are incorporated herein by reference to Exhibit 10.4 and 10.4A to the Registrant's Form S-1)
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation
23.1	Consent of Independent Registered Public Accounting Firm
23.2	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (contained in Exhibit 5.1 hereto)
24.1	Power of Attorney (contained on signature page hereto)

* Incorporated by reference to exhibits filed with the Registrant's Registration Statement on Form S-1, as amended (Registration No. 333-170965), as declared effective on February 9, 2011.

OPINION OF WILSON SONSINI GOODRICH & ROSATI,
PROFESSIONAL CORPORATION

March 12, 2013

Fluidigm Corporation
7000 Shoreline Court, Suite 100
South San Francisco, California 94080

Re: Registration Statement on Form S-8

Ladies and Gentlemen:

We have examined the Registration Statement on Form S-8 (the "Registration Statement") to be filed by Fluidigm Corporation, a Delaware corporation, with the Securities and Exchange Commission on or about the date hereof, in connection with the registration under the Securities Act of 1933, as amended, of 1,000,000 shares of your common stock, par value \$0.001 per share (the "Future Issuance Shares"), reserved for future issuance pursuant to the 2011 Equity Incentive Plan (the "Plan"). As your legal counsel, we have reviewed the actions proposed to be taken by you in connection with the issuance and sale of the Future Issuance Shares to be issued under the Plan.

It is our opinion that the Future Issuance Shares, when issued and sold in the manner referred to in the Plan and pursuant to the agreements that accompany the Plan, will be legally and validly issued, fully paid and nonassessable.

We consent to the use of this opinion as an exhibit to the Registration Statement, and further consent to the use of our name wherever appearing in the Registration Statement and any amendments thereto.

Very truly yours,

WILSON SONSINI GOODRICH & ROSATI, P.C.

/s/ Wilson Sonsini Goodrich & Rosati, P.C.

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the Fluidigm Corporation 2011 Equity Incentive Plan of our reports dated March 12, 2013, with respect to the consolidated financial statements and schedule of Fluidigm Corporation and the effectiveness of internal control over financial reporting of Fluidigm Corporation included in its Annual Report (Form 10-K) for the year ended December 31, 2012, filed with the Securities and Exchange Commission.

March 12, 2013
Redwood City, California

/s/ Ernst & Young LLP