Lumentum Holdings Inc.
Form SC 13G/A
January 22, 2019

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

SCHEDULE 13G

Under the Securities Exchange Act of 1934
(Amendment No.3)*

NAME OF ISSUER: Lumentum Holdings Inc.

TITLE OF CLASS OF SECURITIES: Common Stock

CUSIP NUMBER: 55024U109

DATE OF EVENT WHICH REQUIRES FILING OF THIS STATEMENT: December 31, 2018

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

[X] Rule 13d-1(b)
[ ] Rule 13d-1(c)
[ ] Rule 13d-1(d)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be 'filed' for the purpose of Section 18 of the Securities Exchange Act of 1934 ('Act') or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

CUSIP NUMBER: 55024U109

(1) Names of Reporting Persons The Bank of New York Mellon Corporation
IRS Identification Nos. of Above Persons IRS No.13-2614959

(2) Check the Appropriate Box if a Member of a Group (See Instructions)
(a) ( ) (b) ( )

(3) SEC use only

(4) Citizenship or Place of Organization New York

Number of Shares Beneficially Owned by Each Reporting Person With	(5) Sole Voting Power	3,429,726
	(6) Shared Voting Power	0
	(7) Sole Dispositive Power	3,293,496
	(8) Shared Dispositive Power	274,740

(9) Aggregate Amount Beneficially Owned by Each Reporting Person 3,573,058

(10) Check if the Aggregated Amount in Row (9) Excludes Certain

Shares (see Instructions) ( )

(11) Percent of Class Represented by Amount in Row (9) 4.81%

(12) Type of Reporting Person (See Instructions) HC

SCHEDULE 13G

Item 1(a) Name of Issuer: Lumentum Holdings Inc.

Item 1(b) Address of Issuer's Principal Executive Office:

400 North McCarthy Boulevard
Milpitas, California 95035
United States

Item 2(a) Name of Person Filing: The Bank of New York Mellon Corporation and any other reporting person(s) identified on the second part of the cover page(s) and Exhibit I

Item 2(b) Address of Principal Business Office, or if None, Residence:
C/O The Bank of New York Mellon Corporation
240 Greenwich Street
New York, New York 10286
(for all reporting persons)

Item 2(c) Citizenship: See cover page and Exhibit I

Item 2(d) Title of Class of Securities: Common Stock

CUSIP Number 55024U109

Item 3 See Item 12 of cover page(s) ("Type of Reporting Person ") for each reporting person.

Symbol Category

BD = Broker or Dealer registered under Section 15 of the Securities Exchange Act of 1934

BK = Bank as defined in Section 3(a)(6) of the Securities Exchange Act of 1934

IV = Investment Company registered under Section 8 of the Investment Company Act of 1940

IA = Investment Advisor registered under Section 203 of the Investment Advisors Act of 1940

EP = Employee Benefit Plan, Pension Fund which is subject to the provisions of the Employee Retirement Income Security Act of 1974 or Endowment Fund; see Section 240.13 - d(1)(b)(1)(ii)(F)

HC = Parent Holding Company, in accordance with Section 240.13-d(1)(b)(1)(ii)(G)

Item 4 Ownership: See Item 5 through 9 and 11 of cover page(s) as to each reporting person.

The amount beneficially owned includes, where appropriate, securities not outstanding which are subject to options, warrants, rights or conversion privileges that are exercisable within 60 days. The securities reported herein as beneficially owned may exclude securities of the issuer with respect to which voting and/or dispositive power is exercised by subsidiaries of The Bank of New York Mellon Corporation, or departments or units thereof, independently from the exercise of those powers over the securities reported herein. See SEC Release No. 34-39538 (January 12, 1998). The filing of this Schedule 13G shall not be construed as an admission that The Bank of New York Mellon Corporation, or its direct or indirect subsidiaries, including The Bank of New York Mellon and BNY Mellon, National Association, are for the purposes of Section 13(d) or 13(g) of the Act, the beneficial owners of any securities covered by this Schedule 13G.

The following information applies if checked: ( ) The Bank of New York Mellon and/or ( ) The Bank of New York Mellon Trust Company, National Association is/are the trustee of the issuer's employee benefit plan (the Plan), which is subject to ERISA. The securities reported include all shares held of record by such reporting person(s) as trustee of the Plan which have not been allocated to the individual accounts of employee participants in the Plan. The reporting person, however, disclaims beneficial ownership of all shares that have been allocated to the individual accounts of employee participants in the Plan for which directions have been received and followed.

Item 5 Ownership of Five Percent or Less of a Class:

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following (X)

Item 6 Ownership of More than Five Percent on Behalf of Another Person:

All of the securities are beneficially owned by The Bank of New York Mellon Corporation and its direct or indirect subsidiaries in their various fiduciary capacities. As a result, another entity in every instance is entitled to dividends or proceeds of sale. The number of individual accounts holding an interest of 5% or more is ( )

Item 7 Identification and Classification of the Subsidiary Which Acquired the Security Being Reported by the Parent Holding Company: See Exhibit I.

Item 8 Identification and Classification of Members of the Group: N/A

Item 9 Notice of Dissolution of Group: N/A

Item 10 Certification:

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and were not acquired and are not held for the purpose of and do not have the effect of changing or influencing the control of the issuer of such securities and were not acquired and are not held in connection with or as a participant in any transaction having such purpose or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct. This filing is signed by The Bank of New York Mellon Corporation on behalf of all reporting entities pursuant to Rule

13d-1(k)(1) promulgated under the Securities and Exchange Act of 1934, as amended.
Date: January 22, 2019

THE BANK OF NEW YORK MELLON CORPORATION

By: /s/ IVAN R. ARIAS

Ivan R. Arias
Attorney-In-Fact

EXHIBIT I

The shares reported on the attached Schedule 13G are beneficially owned by the following direct or indirect subsidiaries of The Bank of New York Mellon Corporation, as marked (X):

(A) The Item 3 classification of each of the subsidiaries listed below is "Item 3(b) Bank as defined in Section 3(a)(6) of the Act" (15 U.S.C. 78c) or "Item 3(j)A non-U.S. institution in accordance with Rule 240.13d-1 (b)(1)(ii)(J)"

(X) The Bank of New York Mellon (parent holding company of Mellon Overseas Investment Corporation; BNY International Financing Corporation; The Bank of New York Mellon SA/NV)
( ) The Bank of New York Mellon Trust Company, National Association
(X) BNY Mellon, National Association
(X) BNY Mellon Trust of Delaware
( ) The Bank of New York Mellon SA/NV (parent holding company of BNY Mellon Service Kapitalanlage-Gesellschaft mbH)

(B) The Item 3 classification of each of the subsidiaries listed below is "Item 3(e) An investment adviser in accordance with Section 240.13d-1 (b)(1)(ii)(E)" or "Item 3(j) A non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J)"

( ) ARX Investimentos Ltda (parent holding company of BNY Mellon Alocacao de Patrimonia Ltda.)
( ) BNY Mellon Alocacao de Patrimonia Ltda
( ) BNY Mellon Servicos Financeiros Distribuidora de Titulos e Valores Mobiliarios S.A.(parent holding company of BNY Mellon Administracao de Ativos Ltda.)
( ) BNY Mellon Administracao de Ativos Ltda.
(X) The Dreyfus Corporation (parent holding company of MBSC Securities Corporation)
( ) Insight Investment Management (Global) Limited
( ) Insight North America LLC.
( ) Lockwood Advisors, Inc.
(X) BNY Mellon Asset Management North America Corporation
( ) Newton Investment Management (North America) Limited
( ) Newton Investment Management Limited
( ) Walter Scott & Partners Limited
( ) BNY Mellon Wealth Management, Advisory Services, Inc.
( ) BNY Mellon Trust Company(Cayman) Limited
( ) BNY Mellon Investment Management Cayman Limited
( ) Insight Investment International Limited
( ) BNY Mellon Asset Management Japan Limited

(C) The Item 3 classification of each of the subsidiaries listed below is "Item 3(a) Broker or dealer registered under Section 15 of the Act" (15 U.S.C. 78c) or "Item 3(j) A non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J)"

( ) BNY Mellon Capital Markets, LLC
( ) MBSC Securities Corporation
( ) Pershing LLC

(D) The Item 3 classification of each of the subsidiaries listed below is "Item 3(g) a parent holding company or control person in accordance with Rule 13d-1(b)(1)(ii)(G)"

(X) The Bank of New York Mellon Corporation
(X) B.N.Y. Holdings (Delaware) Corporation (parent holding company of BNY Mellon Trust of Delaware)
(X) BNY Mellon IHC, LLC (as parent holding company of MBC Investments Corporation)
(X) MBC Investments Corporation (parent holding company of BNY Mellon Asset Management North America Corporation; BNY Mellon Investment; Management(Jersey) Ltd.; BNY Mellon Investment Management APAC LP; The Dreyfus Corporation; ARX Investimentos Ltda. ; Mellon Global Investing Corporation)
( ) BNY Mellon Investment Management (Jersey) Ltd. (parent holding company of BNY Mellon Investment Management (Europe) Ltd.)
( ) BNY Mellon Investment Management (Europe) Ltd. (parent holding company of BNY Mellon Investment Management Europe Holdings Ltd.; BNY Mellon Investment Management Cayman Ltd.)
( ) BNY Mellon Investment Management Europe Holdings Ltd. (parent holding company of BNY Mellon International Asset Management Group Limited)
( ) BNY Mellon International Asset Management Group Limited (parent holding company of Newton Management Limited; BNY Mellon International Asset Management (Holdings) Limited; Insight Investment Management Limited)
( ) Newton Management Limited (parent holding company of Newton Investment Management (North America) Limited; Newton Investment Management Limited)
( ) BNY Mellon International Asset Management (Holdings) Limited (parent holding company of BNY Mellon International Asset Management (Holdings) No. 1 Limited)
( ) BNY Mellon International Asset Management (Holdings) No. 1 Limited (parent holding company of Walter Scott & Partners Limited)
( ) Insight Investment Management Limited (parent holding company of Insight Investment Management (Global) Limited; Insight Investment International Limited)
( ) BNY Mellon Investment Management APAC LP (Parent holding company of BNY Mellon Investment Management (APAC) Holdings Limited
( ) BNY Mellon Investment Management (APAC) Holdings Limited (parent holding company of BNY Mellon Asset Management Japan Limited)
( ) Pershing Group LLC (parent holding company of Lockwood Advisors, Inc; Pershing LLC)
( ) Mellon Overseas Investment Corporation (parent holding company of Mellon Canada Holding Company; BNY Mellon Participacoes Ltda.)
( ) Mellon Canada Holding Company (parent holding company of BNY Mellon Wealth Management, Advisory Services, Inc)
( ) BNY Mellon Participacoes Ltda.(parent holding company of BNY Mellon Servicos Financeiros Distribuidora de Titulos e Valores Mobiliarios S.A.)
( ) BNY International Financing Corporation (parent holding company of BNY Mellon Trust Company (Cayman) Limited)
( ) BNY Capital Markets Holdings, Inc. (parent holding company of BNY Mellon Capital Markets, LLC)
( ) Mellon Global Investing Corporation (parent holding company of Insight North America LLC)

NOTE: ALL OF THE LEGAL ENTITIES LISTED UNDER (A), (B), (C) AND (D) ABOVE ARE DIRECT OR INDIRECT SUBSIDIARIES OF THE BANK OF NEW YORK MELLON CORPORATION. BENEFICIAL OWNERSHIP OF MORE THAN FIVE PERCENT OF THE CLASS BY ANY ONE OF THE SUBSIDIARIES OR INTERMEDIATE PARENT HOLDING COMPANIES LISTED ABOVE IS REPORTED ON A JOINT REPORTING PERSON PAGE FOR THAT SUBSIDIARY ON THE ATTACHED SCHEDULE 13G AND IS INCORPORATED IN THE TOTAL PERCENT OF CLASS REPORTED ON THE BANK OF NEW YORK MELLON CORPORATION'S REPORTING PERSON PAGE. (DO NOT ADD THE SHARES OR PERCENT OF CLASS REPORTED ON EACH JOINT REPORTING PERSON PAGE ON THE ATTACHED SCHEDULE 13G TO DETERMINE THE TOTAL PERCENT OF CLASS FOR THE BANK OF NEW YORK MELLON CORPORATION).

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS that each of the undersigned (each a "Company") does hereby make, constitute and appoint each of Nicholas R. Darrow, Ivan Arias and Andrew Weiser (and any other employee of The Bank of New York Mellon Corporation, or one of its affiliates, associated with the Global Holdings Reporting Group and designated in writing by one of the attorneys-in-fact), acting individually, its true and lawful attorney to execute and deliver in its name and on its behalf, whether the Company is acting individually or as representative of others, any and all filings, be they written or oral, required to be made by the Company with respect to securities which may be deemed to be beneficially owned by the Company or under the Company's investment discretion under:

*the Securities Exchange Act of 1934, as amended (the "Exchange Act"), including those filings required to be submitted on Form 13F, Schedule 13G, Schedule 13D and Forms 3, 4 and 5, and

*the laws of any jurisdiction other than the United States of America, including those filings made to disclose securities holdings as required to be submitted to regulatory agencies, exchanges and/or issuers,

giving and granting unto each said attorney-in-fact power and authority to correspond with issuers, regulatory authorities, and other entities as is required in support of the filings referenced above, and to act in the premises as fully and to all intents and purposes as the Company might or could do to comply with the applicable regulations if personally present by one of its authorized signatories (including, but not limited to, instructing local counsel on a Company's behalf), hereby ratifying and confirming all that said attorney-in-fact shall lawfully do or cause

THIS POWER OF ATTORNEY shall remain in full force and effect until either revoked in writing by the Company or until such time as the person or to whom power of attorney has been hereby granted cease(s) to be an persons employee of The Bank of New York Mellon Corporation or one of its affiliates.

This Power of Attorney may be executed in any number of counterparts all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the undersigned hereby execute this Agreement effective as of the date set forth below.

| Banks/Bank Holding Companies |

THE BANK OF NEW YORK MELLON CORPORATION

By: /S/ MITCHELL E.HARRIS
Mitchell E. Harris
Chief Executive Officer,
Investment Management
Date: March 17, 2017

BNY MELLON, NATIONAL ASSOCIATION

By: /S/ DONALD HEBERLE
Donald Heberle
Chief Executive Officer
Date: September 16, 2015

BNY MELLON, NATIONAL ASSOCIATION

By: /S/ THOMAS J. DICKER
Thomas J. Dicker
Chief Operating Officer
Date: October 9, 2015

THE BANK OF NEW YORK MELLON SA/NV

By: /S/ LAURA AHTO
Laura Ahto
Chief Executive Officer
Date: May 17, 2016

THE BANK OF NEW YORK MELLON

By: /S/ MITCHELL E. HARRIS
Mitchell E. Harris
Senior Executive Vice President
Date: September 18, 2015

THE BANK OF NEW YORK MELLON

By: /S/ CURTIS ARLEDGE
Curtis Arledge
Vice Chairman
Date: August 26, 2015

THE BANK OF NEW YORK MELLON TRUST COMPANY, NATIONAL ASSOCIATION

By: /S/ ANTONIO PORTUONDO
Antonio Portuondo
President
Date: October 20, 2015

THE BANK OF NEW YORK MELLON TRUST COMPANY, NATIONAL ASSOCIATION

By: /S/ KURTIS R. KURIMSKY
Kurtis R. Kurimsky
Executive Vice President
Date: March 8, 2016

BNY MELLON TRUST OF DELAWARE

By: /S/ JAMES P. AMBAGIS
James P. Ambagis
President

Date: October 21, 2015

BNY MELLON TRUST OF DELAWARE

By: /S/ LEE JAMES WOOLLEY
Lee James Woolley
Chairman and
Chief Executive Officer
Date: October 19, 2015

Investment Advisers and/or Broker-Dealers

PERSHING LLC

By: /S/ CLAIRE SANTANIELLO
Claire Santaniello
Chief Administrative Officer
and Chief Risk Officer
Date: May 24, 2016

BNY MELLON CAPITAL MARKETS, LLC

By: /S/ JEFF GEARHART
Jeff Gearhart
Chief Operating Officer

Date: October 19, 2016

ARX INVESTIMENTOS LTDA

By: /S/ CAMILA SOUZA
Camila Souza
Director
Date: January 4, 2016

ARX INVESTIMENTOS LTDA

By: /S/ GUILHERME ABRY
Guilherme Abry
Director
Date: January 4, 2016

BNY MELLON SERVICOS FINANCEIROS DISTRIBUIDORA DE TITULOS E VALORES MOBILIARIOS S.A.

By: /S/ CARLOS ALBERTO SARAIVA
Carlos Alberto Saraiva
Director
Date: May 5, 2016

BNY MELLON SERVICOS FINANCEIROS DISTRIBUIDORA DE TITULOS E VALORES MOBILIARIOS S.A.

By: /S/ MARCUS VINICIUS MATHIAS PEREIRA
Marcus Vinicius Mathias Pereira
Director
Date: May 5, 2016

BNY MELLON ADMINISTRACAO DE ATIVOS LTDA

By: /S/ CARLOS ALBERTO SARAIVA
Carlos Alberto Saraiva
Director
Date: May 5, 2016

BNY MELLON ADMINISTRACAO DE ATIVOS LTDA

By: /S/ MARCUS VINICIUS MATHIAS PEREIRA
Marcus Vinicius Mathias Pereira
Director
Date: May 5, 2016

BNY MELLON ALOCACAO DE PATRIMONIO LTDA

By: /S/ GUSTAVO CASTELLO BRANCO
Gustavo Castello Branco
Director
Date: January 4, 2016

BNY MELLON ALOCACAO DE PATRIMONIO LTDA

By: /S/ CAMILA SOUZA
Camila Souza
Director
Date: January 4, 2016

THE DREYFUS CORPORATION

By: /S/ JAMES BITETTO
James Bitetto
Secretary
Date: July 30, 2015

INSIGHT INVESTMENT MANAGEMENT (GLOBAL) LIMITED

By: /s/ CHARLES FARQUHARSON
Charles Farquharson
Chief Risk Officer
Date: February 16, 2016

LOCKWOOD ADVISORS, INC.

By: /S/ JOHN J. BRETT
John J. Brett
Chairman

Date: July 30, 2015

BNY MELLON ASSET MANAGEMENT JAPAN LIMITED

By: /S/ SHIZU KISHIMOTO
Shizu Kishimoto
Representative Director
and President
Date: August 5, 2015

BNY MELLON ASSET MANAGEMENT

MBSC SECURITIES CORPORATION

NORTH AMERICA CORPORATION

By: /S/ JENNIFER CASSEDY
Jennifer Cassedy
Chief Compliance Officer
Date: February 14, 2018

By: /S/ KENNETH J. BRADLE
Kenneth J. Bradle
President
Date: April 29, 2016

NEWTON INVESTMENT MANAGEMENT LIMITED

By: /S/ JAMES HELBY
James Helby
Director
Date: July 17, 2015

NEWTON INVESTMENT MANAGEMENT (NORTH AMERICA) LIMITED

By: /S/ JAMES HELBY
James Helby
Chief Risk Officer
Date: June 30, 2016

WALTER SCOTT & PARTNERS LIMITED

By: /S/ RODGER NISBET
Rodger Nisbet
Executive Chairman
Date: July 15, 2015

INSIGHT INVESTMENT INTERNATIONAL LIMITED

By: /S/ LEE PALMER
Lee Palmer
Chief Compliance Officer
Date: February 14, 2018

BNY MELLON WEALTH MANAGEMENT, ADVISORY SERVICES, INC.

By: /S/ MARIE-CLAUDE LEPAGE
Marie-Claude Lepage
Chief Compliance Officer
Date: May 9, 2016

BNY MELLON INVESTMENT MANAGEMENT CAYMAN LTD

By: /S/ BRENDON J. DONNELLAN
Brendon J.Donnellan
Director
Date: August 22, 2016

BNY MELLON TRUST COMPANY (CAYMAN) LIMITED

By: CANELLA SECRETARIES (CAYMAN) LTD, SECRETARY
By: /S/GILLIAN NELSON
Gillian Nelson
Authorized Person
Date: May 17, 2016

BNY MELLON TRUST COMPANY (CAYMAN) LIMITED

By: CANELLA SECRETARIES (CAYMAN) LTD, SECRETARY
By: /S/ PATRICIA BRUZIO
Patricia Bruzio
Authorized Person
Date: May 17, 2016

INSIGHT NORTH AMERICA LLC

By: /S/ JOHN ARIOLA
John Ariola
Head of Financial Analysis
Date: December 7, 2016

| Parent Holding Companies/Control Persons |

B.N.Y. HOLDINGS (DELAWARE) CORPORATION

By: /S/ JAMES P. AMBAGIS
James P. Ambagis
President

Date: October 21, 2015

PERSHING GROUP LLC

By: /S/ CLAIRE SANTANIELLO
Claire Santaniello
Chief Administrative Officer
and Chief Risk Officer

Date: May 11, 2016

BNY MELLON INVESTMENT MANAGEMENT (APAC) HOLDINGS LIMITED

By: /S/ EMILY CHAN
Emily Chan
Director

Date: April 19, 2016

BNY MELLON INVESTMENT MANAGEMENT (APAC) HOLDINGS LIMITED

By: /S/ DONI SHAMSUDDIN
Doni Shamsuddin
Director

Date: April 19, 2016

BNY MELLON INTERNATIONAL ASSET MANAGEMENT GROUP LIMITED

By: /S/ GREG BRISK
Greg Brisk
Director

Date: October 21, 2015

NEWTON MANAGEMENT LIMITED

By: /S/ HELENA MORRISSEY
Helena Morrissey
Director

Date: July 17, 2015

BNY MELLON IHC, LLC

By: /S/ KURTIS R. KURIMSKY
Kurtis R. Kurimsky
Vice President and
Controller
Date: March 29, 2017

MBC INVESTMENTS CORPORATION

By: /S/ PAUL A. GRIFFITHS
Paul A. Griffiths
Chairman, President and
Chief Executive Officer

Date: April 29, 2016

MELLON OVERSEAS INVESTMENT CORPORATION

By: /S/ KURTIS R. KURIMSKY
Kurtis R. Kurimsky
Vice President and Controller

Date: October 7, 2015

INSIGHT INVESTMENT MANAGEMENT LIMITED

By: /S/ CHARLES FARQUHARSON
Charles Farquharson
Chief Risk Officer

Date: February 16, 2016

BNY INTERNATIONAL FINANCING CORPORATION

By: /S/ KURTIS R. KURIMSKY
Kurtis R. Kurimsky
President and Comptroller

Date: May 12, 2016

BNY INTERNATIONAL FINANCING CORPORATION

By: /S/ JOHN M. ROY
John M. Roy
Vice President

Date: August 15, 2016

BNY MELLON INVESTMENT MANAGEMENT

BNY MELLON INVESTMENT MANAGEMENT

EUROPE HOLDINGS LIMITED

By: /S/ GREG BRISK
Greg Brisk
Director
Date: October 21, 2015

(EUROPE)LIMITED

By: /S/ GREG BRISK
Greg Brisk
Director
Date: October 21, 2015

BNY MELLON INVESTMENT MANAGEMENT (JERSEY)LIMITED

By: /S/ GREG BRISK
Greg Brisk
Director
Date: October 21, 2015

BNY CAPITAL MARKETS HOLDINGS, INC.

By: /S/ THOMAS P. GIBBONS
Thomas P. Gibbons
Vice Chairman and Chief Financial Officer
Date: October 24, 2015

BNY MELLON INTERNATIONAL ASSET MANAGEMENT (HOLDINGS) LIMITED

By: /S/ GREG BRISK
Greg Brisk
Director
Date: October 21, 2015

BNY MELLON INTERNATIONAL ASSET MANAGEMENT (HOLDINGS) No. 1 LIMITED

By: /S/ GREG BRISK
Greg Brisk
Director
Date: October 21, 2015

MELLON CANADA HOLDING COMPANY

By: /S/ KELLY SCHWARTZ
Kelly Schwartz
President and Director
Date: May 3, 2016

BNY MELLON PARTICIPACOES LTDA

By: /S/ CARLOS ALBERTO SARAIVA
Carlos Alberto Saraiva
Director
Date: May 5, 2016

BNY MELLON PARTICIPACOES LTDA

By: /S/ MARCUS VINICIUS MATHIAS PEREIRA
Marcus Vinicius Mathias Pereira
Director
Date: May 5, 2016

BNY MELLON INVESTMENT MANAGEMENT APAC LP
By: BNY MELLON INVESTMENT MANAGEMENT HOLDINGS, LLC, GENERAL PARTNER
By: /S/ PAUL A. GRIFFITHS
Paul A. Griffiths
President
Date: April 29, 2016

MELLON GLOBAL INVESTING CORPORATION

By: /S/ LEO P. GROHOWSKI
Leo P . Grohowski
President
Date: June 29, 2018

| Fund Administrators |

BNY MELLON SERVICE KAPITALANLAGE-GESELLSCHAFT mbH

By: /S/ KATARINA MELVAN
Katarina Melvan
Managing Director(Chairman)
Date: August 19, 2016

BNY MELLON SERVICE KAPITALANLAGE-GESELLSCHAFT mbH

By: /S/ CAROLINE SPECHT
Caroline Specht
Managing Director
Date: August 19, 2016

JOINT FILING AGREEMENT

In accordance with Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), the undersigned hereby agree to any and all joint filings required to be made on their behalf on Schedule 13G (including amendments thereto) under the Exchange Act, with respect to securities which may be deemed to be beneficially owned by them under the Exchange Act, and that this Agreement be included as an Exhibit to any such joint filing. This Agreement may be executed in any number of counterparts all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the undersigned hereby execute this Agreement effective as of the date set forth below.

Banks/Bank Holding Companies

THE BANK OF NEW YORK MELLON CORPORATION

By: /S/ MITCHELL E.HARRIS
Mitchell E. Harris
Chief Executive Officer,
Investment Management
Date: March 17, 2017

BNY MELLON, NATIONAL ASSOCIATION

By: /S/ DONALD HEBERLE
Donald Heberle
Chief Executive Officer
Date: September 16, 2015

BNY MELLON, NATIONAL ASSOCIATION

By: /S/ THOMAS J. DICKER
Thomas J. Dicker
Chief Operating Officer
Date: October 9, 2015

THE BANK OF NEW YORK MELLON SA/NV

By: /S/ LAURA AHTO
Laura Ahto
Chief Executive Officer
Date: May 17, 2016

THE BANK OF NEW YORK MELLON

By: /S/ MITCHELL E. HARRIS
Mitchell E. Harris
Senior Executive Vice President
Date: August 27, 2015

THE BANK OF NEW YORK MELLON

By: /S/ CURTIS ARLEDGE
Curtis Arledge
Vice Chairman
Date: August 26, 2015

THE BANK OF NEW YORK MELLON TRUST COMPANY, NATIONAL ASSOCIATION

By: /S/ ANTONIO PORTUONDO
Antonio Portuondo
President
Date: October 20, 2015

THE BANK OF NEW YORK MELLON TRUST COMPANY, NATIONAL ASSOCIATION

By: /S/ KURTIS R. KURIMSKY
Kurtis R. Kurimsky
Executive Vice President
Date: March 8, 2016

BNY MELLON TRUST OF DELAWARE

By: /S/ JAMES P. AMBAGIS
James P. Ambagis
President
Date: October 21, 2015

BNY MELLON TRUST OF DELAWARE

By: /S/ LEE JAMES WOOLLEY
Lee James Woolley
Chairman and
Chief Executive Officer
Date: October 19, 2015

Investment Advisers and/or Broker-Dealers

PERSHING LLC

By: /S/ CLAIRE SANTANIELLO
Claire Santaniello
Chief Administrative Officer
and Chief Risk Officer
Date: May 24, 2016

BNY MELLON CAPITAL MARKETS, LLC

By: /S/ JEFF GEARHART
Jeff Gearhart
Chief Operating Officer

Date: October 19, 2016

ARX INVESTIMENTOS LTDA

By: /S/ CAMILA SOUZA
Camila Souza
Director
Date: January 4, 2016

ARX INVESTIMENTOS LTDA

By: /S/ GUILHERME ABRY
Guilherme Abry
Director
Date: January 4, 2016

BNY MELLON SERVICOS FINANCEIROS DISTRIBUIDORA DE TITULOS E VALORES MOBILIARIOS S.A.

By: /S/ CARLOS ALBERTO SARAIVA
Carlos Alberto Saraiva
Director
Date: May 5, 2016

BNY MELLON SERVICOS FINANCEIROS DISTRIBUIDORA DE TITULOS E VALORES MOBILIARIOS S.A.

By: /S/ MARCUS VINICIUS MATHIAS PEREIRA
Marcus Vinicius Mathias Pereira
Director
Date: May 5, 2016

BNY MELLON ADMINISTRACAO DE ATIVOS LTDA

By: /S/ CARLOS ALBERTO SARAIVA
Carlos Alberto Saraiva
Director
Date: May 5, 2016

BNY MELLON ADMINISTRACAO DE ATIVOS LTDA

By: /S/ MARCUS VINICIUS MATHIAS PEREIRA
Marcus Vinicius Mathias Pereira
Director
Date: May 5, 2016

BNY MELLON ALOCACAO DE PATRIMONIO LTDA

By: /S/ GUSTAVO CASTELLO BRANCO
Gustavo Castello Branco
Director
Date: January 4, 2016

BNY MELLON ALOCACAO DE PATRIMONIO LTDA

By: /S/ CAMILA SOUZA
Camila Souza
Director
Date: January 4, 2016

THE DREYFUS CORPORATION

By: /S/ JAMES BITETTO
James Bitetto
Secretary
Date: July 30, 2015

INSIGHT INVESTMENT MANAGEMENT (GLOBAL) LIMITED

By: /s/ CHARLES FARQUHARSON
Charles Farquharson
Chief Risk Officer
Date: February 16, 2016

LOCKWOOD ADVISORS, INC.

By: /S/ JOHN J. BRETT
John J. Brett
Chairman

Date: July 30, 2015

BNY MELLON ASSET MANAGEMENT JAPAN LIMITED

By: /S/ SHIZU KISHIMOTO
Shizu Kishimoto
Representative Director
and President
Date: August 5, 2015

BNY MELLON ASSET MANAGEMENT NORTH AMERICA CORPORATION

By: /S/ JENNIFER CASSEDY
Jennifer Cassedy
Chief Compliance Officer
Date: February 14, 2018

MBSC SECURITIES CORPORATION

By: /S/ KENNETH J. BRADLE
Kenneth J. Bradle
President
Date: April 29, 2016

NEWTON INVESTMENT MANAGEMENT LIMITED

By: /S/ JAMES HELBY
James Helby
Director
Date: July 17, 2015

NEWTON INVESTMENT MANAGEMENT (NORTH AMERICA) LIMITED

By: /S/ JAMES HELBY
James Helby
Chief Risk Officer
Date: June 30, 2016

WALTER SCOTT & PARTNERS LIMITED

By: /S/ RODGER NISBET
Rodger Nisbet
Executive Chairman
Date: July 15, 2015

INSIGHT INVESTMENT INTERNATIONAL LIMITED

By: /S/ LEE PALMER
Lee Palmer
Chief Compliance Officer
Date: February 14, 2018

BNY MELLON WEALTH MANAGEMENT,

BNY MELLON INVESTMENT MANAGEMENT

ADVISORY SERVICES, INC.

By: /S/ MARIE-CLAUDE LEPAGE
Marie-Claude Lepage
Chief Compliance Officer
Date: May 9, 2016

CAYMAN LTD

By: /S/ BRENDON J. DONNELLAN
Brendon J.Donnellan
Director
Date: August 22, 2016

BNY MELLON TRUST COMPANY (CAYMAN) LIMITED

By: CANELLA SECRETARIES (CAYMAN) LTD, SECRETARY
By: /S/GILLIAN NELSON
Gillian Nelson
Authorized Person
Date: May 17, 2016

BNY MELLON TRUST COMPANY (CAYMAN) LIMITED

By: CANELLA SECRETARIES (CAYMAN) LTD, SECRETARY
By: /S/ PATRICIA BRUZIO
Patricia Bruzio
Authorized Person
Date: May 17, 2016

INSIGHT NORTH AMERICA LLC

By: /S/ JOHN ARIOLA
John Ariola
Head of Financial Analysis
Date: December 7, 2016

Parent Holding Companies/Control Persons

B.N.Y. HOLDINGS (DELAWARE) CORPORATION

By: /S/ JAMES P. AMBAGIS
James P. Ambagis
President
Date: October 21, 2015

PERSHING GROUP LLC

By: /S/ CLAIRE SANTANIELLO
Claire Santaniello
Chief Administrative Officer and Chief Risk Officer
Date: May 11, 2016

BNY MELLON INVESTMENT MANAGEMENT (APAC) HOLDINGS LIMITED

By: /S/ EMILY CHAN
Emily Chan
Director
Date: April 19, 2016

BNY MELLON INVESTMENT MANAGEMENT (APAC) HOLDINGS LIMITED

By: /S/ DONI SHAMSUDDIN
Doni Shamsuddin
Director
Date: April 19, 2016

BNY MELLON INTERNATIONAL ASSET MANAGEMENT GROUP LIMITED

By: /S/ GREG BRISK
Greg Brisk
Director
Date: October 21, 2015

NEWTON MANAGEMENT LIMITED

By: /S/ HELENA MORRISSEY
Helena Morrissey
Director
Date: July 17, 2015

BNY MELLON IHC, LLC

By: /S/ KURTIS R. KURIMSKY

Kurtis R. Kurimsky
Vice President and
Controller
Date: March 29, 2017

MBC INVESTMENTS CORPORATION

By: /S/ PAUL A. GRIFFITHS

Paul A. Griffiths
Chairman, President and
Chief Executive Officer
Date: April 29, 2016

MELLON OVERSEAS INVESTMENT CORPORATION

By: /S/ KURTIS R. KURIMSKY

Kurtis R. Kurimsky
Vice President and Controller
Date: October 7, 2015

INSIGHT INVESTMENT MANAGEMENT LIMITED

By: /S/ CHARLES FARQUHARSON

Charles Farquharson
Chief Risk Officer
Date: February 16, 2016

BNY INTERNATIONAL FINANCING CORPORATION

By: /S/ KURTIS R. KURIMSKY

Kurtis R. Kurimsky
President and Comptroller
Date: May 12, 2016

BNY INTERNATIONAL FINANCING CORPORATION

By: /S/ JOHN M. ROY

John M. Roy
Vice President
Date: August 15, 2016

BNY MELLON INVESTMENT MANAGEMENT EUROPE HOLDINGS LIMITED

By: /S/ GREG BRISK

Greg Brisk
Director
Date: October 21, 2015

BNY MELLON INVESTMENT MANAGEMENT (EUROPE)LIMITED

By: /S/ GREG BRISK

Greg Brisk
Director
Date: October 21, 2015

BNY MELLON INVESTMENT MANAGEMENT (JERSEY)LIMITED

By: /S/ GREG BRISK

Greg Brisk
Director

Date: October 21, 2015

BNY CAPITAL MARKETS HOLDINGS, INC.

By: /S/ THOMAS P. GIBBONS

Thomas P. Gibbons
Vice Chairman and Chief
Financial Officer
Date: October 24, 2015

BNY MELLON INTERNATIONAL ASSET MANAGEMENT (HOLDINGS) LIMITED

By: /S/ GREG BRISK

Greg Brisk
Director
Date: October 21, 2015

BNY MELLON INTERNATIONAL ASSET MANAGEMENT (HOLDINGS) No. 1 LIMITED

By: /S/ GREG BRISK

Greg Brisk
Director
Date: October 21, 2015

MELLON CANADA HOLDING COMPANY

By: /S/ KELLY SCHWARTZ
Kelly Schwartz
President and Director
Date: May 3, 2016

BNY MELLON PARTICIPACOES LTDA

By: /S/ CARLOS ALBERTO SARAIVA
Carlos Alberto Saraiva
Director
Date: May 5, 2016

BNY MELLON PARTICIPACOES LTDA

By: /S/ MARCUS VINICIUS MATHIAS PEREIRA
Marcus Vinicius Mathias Pereira
Director
Date: May 5, 2016

BNY MELLON INVESTMENT MANAGEMENT APAC LP
By: BNY MELLON INVESTMENT MANAGEMENT HOLDINGS, LLC, GENERAL PARTNER
By: /S/ PAUL A. GRIFFITHS
Paul A. Griffiths
President
Date: April 29, 2016

MELLON GLOBAL INVESTING CORPORATION

By: /S/ LEO P. GROHOWSKI
Leo P . Grohowski
President
Date: June 29, 2018

Fund Administrators

BNY MELLON SERVICE KAPITALANLAGE-GESELLSCHAFT mbH

By: /S/ KATARINA MELVAN
Katarina Melvan
Managing Director(Chairman)
Date: August 19, 2016

BNY MELLON SERVICE KAPITALANLAGE-GESELLSCHAFT mbH

By: /S/ CAROLINE SPECHT
Caroline Specht
Managing Director
Date: August 19, 2016