Fiber Optic Connector & Mechanical Splice
Global Market Forecast & Analysis
2016-2026

Study Release Date: March 15, 2017

This ElectroniCast report provides the review of last year (2016) and a 10-year global market forecast (2017-2026) of the use of fiber optic connectors and mechanical splices.
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2016-2026

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Report Description

This is the ElectroniCast forecast of global consumption and technology trends of fiber optic connectors and mechanical splices. We believe clients will find this report useful for planning of product and market development.

Historical estimated data are presented for 2016, plus the year-by-year forecast through 2026.

This analysis and forecast and of America, EMEA and APAC regional consumption is presented for each significant fiber optic connector and mechanical splice used in selected communication applications. The forecast for each connector type, in turn, is segmented into each geographical region.

The information is presented in easy-to-follow illustrations and text. The reasons for the forecast trends are discussed. A global summary also is provided. The report also outlines the market research methodology followed. There are over 90 vendors competing for the global fiber optic connector/ mechanical splice market, which ElectroniCast tracks in a product matrix showing participation in the following: connectors, cable assemblies, optical backplanes, and fiber optic installation apparatus; however, is dominated by a few companies that have a broad base in various interconnect products.

Connectors and Applications Covered in this Study

The ElectroniCast connector market forecast is built up from specific segments. The three major categories: single-mode, multimode and mechanical splices are further broken down as shown in Table 1.

The end applications for the selected fiber optic connectors discussed in this study report are itemized in Table 2.
Table 1
Fiber Optic Connector Product Category List

<table>
<thead>
<tr>
<th>Category</th>
<th>Product Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-mode Fiber Optic Connectors</td>
<td>ST Simplex, FC Simplex, SC Simplex, Small Form Factor (SFF) Simplex Connector, LC Simplex, MU Simplex, E-2000 and F-3000 and Related, SFF Other Simplex, In-series Adapter, Between-series Adapter, MT Based (includes MT, MPO/MTP), MXC ™, SFF Duplex Connector, SFF Duplex MT-RJ, SFF Other Duplex, Other Multifiber Connector, MIL-SPEC, Other Single-mode Fiber Optic Connectors</td>
</tr>
<tr>
<td>Multimode Fiber Optic Connectors</td>
<td>ST Simplex, SC Simplex, Small Form Factor (SFF) Simplex Connector, SFF LC Simplex, SFF MU Simplex, E-2000™ and F-3000 ™ and Related, SFF Other Simplex, In-series Adapter, Between-series Adapter, MT (includes MT, MPO/MTP), MXC ™, SFF Duplex Connector, SFF Duplex MT-RJ, SFF VF-45 (SG) Duplex, SFF Other Duplex, Other Multifiber Connector, MIL-SPEC, Other Multimode Fiber Optic Connectors</td>
</tr>
<tr>
<td>Mechanical Splices</td>
<td></td>
</tr>
</tbody>
</table>

Note: All LC connectors are counted as simplex
### Table 2
Fiber Optic Connector Application Category List

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecommunications</td>
<td>Apparatus, Modules/Components</td>
</tr>
<tr>
<td>Private Data LAN/WAN</td>
<td>Apparatus, Modules/Components</td>
</tr>
<tr>
<td>Cable TV</td>
<td>Apparatus, Modules/Components</td>
</tr>
<tr>
<td>Military/Aerospace</td>
<td>Commercial-Off-The-Shelf (COTS) and Value-Added Connectors</td>
</tr>
<tr>
<td></td>
<td>Military Specified/Standard (MIL-SPEC)</td>
</tr>
<tr>
<td></td>
<td>Aircraft/Spacecraft</td>
</tr>
<tr>
<td></td>
<td>Shipboard</td>
</tr>
<tr>
<td></td>
<td>Other Military/Aerospace (Base Stations, Tactical Ground, Vehicles, Missile Systems, Other)</td>
</tr>
<tr>
<td>Specialty</td>
<td>The Specialty applications category, which includes automotive/vehicle, medical, sensors, industrial, energy/oil/gas, and harsh-environment, as well as non-specified (miscellaneous uses)</td>
</tr>
</tbody>
</table>

This report presents the ElectroniCast market forecast of the use of fiber optic cleavers and strippers. This report provides the consumption by the following functions:

- Value (US$, million)
- Quantity (number/units in thousands)
- Average Selling Prices (ASP $, each)
Information Base for the Market Forecast

Primary Research This study is based on analysis of information obtained continually since 1985, but updated through the middle of March of 2017. During this period, ElectroniCast analysts performed interviews with authoritative and representative individuals in the fiber optics industry plus telecommunications, datacom, military/aerospace and other communication industries, instrumentation/laboratory—R&D and factory/manufacturing, from the standpoint of both suppliers and users of 40/100GbE MPO (and other) fiber optic connectors. The interviews were conducted principally with:

- Engineers, marketing personnel and management at manufacturers of fiber optic connectors, couplers/splitters, isolators, OADMs, DWDM, photonic/Ethernet switches, modulators, collimators, mechanical splice, attenuators, transceivers and receivers, as well as laser diodes and photodiodes, application-specific ICs, packages, ferrules and cables, substrate materials, AWGs/optical waveguide and other components used in the fabrication of optoelectronic transceivers, cable assemblies, test/measurement equipment, splice equipment and installation apparatus

- Design group leaders, engineers, marketing personnel and market planners at major users and potential users of cable, cable assemblies, connectors, installation apparatus, passive devices and transceivers, such as telecommunication transmission, switching and distribution equipment producers, data communications equipment producers (switches, hubs, routers), computer and workstation producers, weapon system, aircraft and spacecraft electronic equipment producers, optical instrumentation system producers and others

- Other industry experts, including those focused on standards activities, trade associations, and investments

The interviews covered issues of technology, R&D support, pricing, contract size, reliability, documentation, installation/maintenance crafts, standards, supplier competition and other topics. Customers of Fiber optic connectors & splices also were interviewed, to obtain their estimates of quantities received and average prices paid, as a crosscheck of vendor estimates. Customer estimates of historical and expected near term future growth of their application are obtained. Their views of use of new technology products were obtained.

The analyst then considered customer expectations of near term growth in their application, plus forecasted economic payback of investment, technology trends and changes in government regulations in each geographical region, to derive estimated growth rates of quantity and price of each product subset in each application. These forecasted growth rates are combined with the estimated baseline data to obtain the long-range forecasts at the lowest detailed level of each product and application.
Secondary Research  A full review of published information was also performed to supplement information obtained through interviews. The following sources were reviewed:

- Professional technical journals and papers; Trade press articles
- Technical conference proceedings; Product literature
- Company profile and financial information
- Additional information based on previous ElectroniCast market studies
- Personal knowledge of the research team

In analyzing and forecasting the complexities of the North American market for optical interconnect products, it is essential that the market research team have a good and a deep understanding of the technology and of the industry. ElectroniCast members who participated in this report were qualified.

Bottom-up Methodology  ElectroniCast forecasts, as illustrated in the forecast data base structure are developed initially at the lowest detail level, then summed to successively higher levels. The background market research focuses on the amount of each type of product used in each application in the base year (last year), and the prices paid at the first transaction from the manufacturer. This forms the base year data.

ElectroniCast analysts then forecast the growth rates in component quantity use in each application, along with price trends, based on competitive, economic and technology forecast trends, and apply these to derive long term forecasts at the lowest application levels. The usage growth rate forecasts depend heavily on analysis of overall end user trends toward communication equipment usage and economic payback.

Cross-Correlation Increases Accuracy  The quantities of network switches, optical fiber/cable, connectors, transceivers, transport terminals, optical add/drop MUX, VCSELs, couplers/splitters, isolators, photonic switches and other products used in a particular application are interrelated. Since ElectroniCast conducts annual analysis and forecast updates in each fiber optic related product field, accurate current quantity estimates in each application are part of this corporate database. These quantities are cross-correlated as a “sanity check.”

ElectroniCast, each year since 1985, has conducted extensive research and updated their forecasts of each fiber optic component category. As technology and applications have advanced, the number of component subsets covered by the forecasts has expanded impressively. The calculation and analysis data spreadsheet technique is based upon input/output analysis, leveraging the quantitative consumption quantity, price and value of each item in each application at all levels to achieve reasonable quantitative conclusions; this interactive analysis concept, first applied on a major scale by Leonteff, of the US Department of Commerce, in the mid 1950s, was then adopted successfully by analyst/forecasting firms Quantum Science, Gnostic Concepts and (in 1981) by ElectroniCast.
About ElectroniCast

ElectroniCast, founded in 1981, specializes in forecasting technology and global market trends in fiber optics communication components and devices, as well providing market data on light emitting diodes used in lighting.

As an independent consultancy we offer multi-client and custom market research studies to the world's leading companies based on comprehensive, in-depth analysis of quantitative and qualitative factors. This includes technology forecasting, markets and applications forecasting, strategic planning, competitive analysis, customer-satisfaction surveys and marketing/sales consultation. ElectroniCast, founded as a technology-based independent consulting firm, meets the information needs of the investment community, industry planners and related suppliers.

Director of Study

Stephen Montgomery, MBA in Technology Management, President at ElectroniCast Consultants. He joined ElectroniCast in 1990 and has specialized in fiber optic components market & technology forecasting at ElectroniCast for over 25-years. He has given numerous presentations and published a number of articles on optical communication markets, technology, applications and installations. He is a member of the Editorial Advisory Board of LIGHTWAVE magazine (PennWell Publishing) and writes a monthly article covering the optical communication industry for OPTCOM Magazine in Japan (Kogyo Tsushin Co., Ltd.).

Proprietary Statement

All data and other information contained in this data base are proprietary to ElectroniCast and may not be distributed or provided in either original or reproduced form to anyone outside the client’s internal employee organization, without prior written permission of ElectroniCast.

ElectroniCast, in addition to multiple-client programs, conducts proprietary custom studies for single clients in all areas of management planning and interest. Other independent consultants, therefore, are considered directly competitive. ElectroniCast proprietary information may not be provided to such consultants without written permission from ElectroniCast Consultants.
Table of Contents

1. Executive Summary
2. Fiber Optic Connectors/Mechanical Splices
3. Market Forecast, by Connector Type
   3.1 Global Market Forecast, by Connector Type
   3.2 American Market Forecast, by Connector Type
   3.3 EMEA Market Forecast, by Connector Type
   3.4 APAC Market Forecast, by Connector Type
4. Market Forecast, By Application
   4.1 Fiber Optic Networks
   4.2 Market Forecast Data Tables, by Application
5. Competition – Fiber Optic Connectors
   5.1 Competitive Market Share (2016) and List of Selected Vendors
   5.2 Company Profiles of Selected Competitors
6. Optical Communication Trends
   6.1 Fiber Network Technology Trends
   6.2 Components
      6.2.1 Overview
      6.2.2 Transmitters and Receivers
      6.2.3 Optical Amplifiers
      6.2.4 Dispersion Compensators
      6.2.5 Fiber Cable
   6.3 Devices and Parts
      6.3.1 Overview
      6.3.2 Emitters and Detectors
      6.3.3 VCSEL & Transceiver Technology Review
      6.3.4 Optoelectronic Integrated Circuits / Photonic Integrated Circuits (PIC)
      6.3.5 Modulators
7. ElectroniCast Research Methodology
8. Definitions: Acronyms, Abbreviations, and General Terms
9. Market Forecast and Analysis Database Introduction/Explanation

Addendum  Market Forecast Data Base – Excel Spreadsheet (2016-2026)
Addendum  Data Figures – PowerPoint (2016-2026)

List of Figures

1.1 Global Fiber Optic Connector/Mechanical Splice Market Forecast, by Region ($, Million)
1.2 Global Fiber Optic Connector/Mechanical Splice Market Forecast, by Type ($, Million)
1.3 Global Fiber Optic Connector/Mechanical Splice Market Forecast, by Application ($, Million)
2.1 Connector Sales/Distribution Product Flow
2.2 Fiber Distribution Hub (FDH)
2.3 Fiber Distribution Terminal
2.4 12-Channel Rack Mount Media Converter
2.5 Pre-Terminated MTP with Cable and Panel
2.6 1x32 PLC Splitter Module with SC Connectors
2.7 1x32 PLC Splitter Module with Connectors
2.8 Rack-Mount Enclosure
2.9 Pre-Terminated Connector/Cabling Platforms
2.10 Fiber Optic Patch Cords in Core Switch
2.11 Selected Fiber Optic Connectors
2.12 Anaerobic-Cured Fiber Optic Connector
2.13 Fiber Optic FC connectors and Adapters
2.14 MU Optical Connector System
2.15 Selected Small Form Factor Connector Options
2.16 E-2000™ Connector Series
List of Figures - Continued

2.17 The LC Uniboot Patch Cord
2.18 LC-XD Connector
2.19 MT Ferrule Based Connectors
2.20 MT Ferrule Based Connectors
2.21 MAC II (Multichannel Array Connector)
2.22 MPO Connector & Connector Assembly
2.23 Pre-Terminated MTP with Cable and Panel
2.24 MPO female / MPO female OM3 multimode 12F – Ribbon cable 10m
2.25 MPO Pre-Terminated Cable Assembly
2.26 Schematic of MPO connector/single fiber connector(s) “Fan-Out”
2.27 10x10Gb/s Parallel Optics and MPO Connector
2.28 Weatherproof IP-MPO Connector
2.29 Multiple Fiber Connector Equipment Interface (MTP and MXC)
2.30 MXC Optical Interconnect Solution
2.31 MXC Optical Connector Technology
2.32 New Multi-Fiber Optical Connector
2.33 Optical Fiber Interconnect in Connector
2.34 Multi-Fiber Optical Connector Mounted to Board
2.35 Parallel Optical Device Module Cable Assemblies / Board Interconnect
2.36 Parallel Optical Device Module Cable Assemblies / Board Interconnect
2.37 Multiple Fiber Connector with Prism Optics
2.38 Plastic Optical Fiber (POF) Cable and POF Connector
2.39 Plastic Optical Fiber (POF) Cable and POF Connector
2.40 Topology for Media-Oriented Systems Transport (MOST)
2.41 SMA Fiber Optic Connector (Medical Grade)
2.42 Assorted Medical Connectors
2.43 Assorted Harsh Environment Fiber Optic (and Hybrid) Connectors
2.44 Fiber Optic Terminus (Shown Loose and Fitted in Connector)
2.45 Fiber Optic Terminus
2.46 Ruggedized Fiber Optic Connector System
2.47 Tactical Fiber Optic Cable Assembly
2.48 Pierside Fiber Optic Cables & Connectors - 12 Channel
2.49 M28876 Fiber Optic Connectors
2.50 Military Fiber Optic ST Connectors
2.51 4X Optical Connector/Transceiver
2.52 QSFP40G (Quad Small Form-Factor Pluggables)
2.53 CFP, CXP and QSFP Form Factors
2.54 Quad Small Form-Factor Pluggable (QSFP) MSA Solution
2.55 Fiber Optic Connector Dry Cloth Cleaner
2.56 Cleaners (Devices) for Single Fiber Connections
2.57 Pre-Polished Field Installable Fiber Optic Connectors
2.58 MPO Fusion Spliced Field-Terminated Fiber Optic Connectors
2.59 SC Multimode Field Installable Fiber Optic Connectors
2.60 Fiber Optic Mechanical Splice
2.61 Mechanical Splice
2.62 Fusion Splice
2.63 Comparative Cost, Mechanical vs. Fusion Splicing
2.64 Reusable Mechanical Splice
2.65 Mechanical Fiber Optic Splice
2.66 Fiber Optic Connector Ferrules Polish Styles (PC, UPC, APC)
2.67 Fiber Optic Connector Ferrules Polish: 8 Degrees of Separation
2.68 Assorted Fusion Splice-on Field-Terminated Connectors
2.69 Small and Light Portable Fusion Splicer
2.70 Ribbon Fiber Cable Flat Sheath Cable with 8.3/125 micron Single-mode Fiber (12-Fiber)
2.71 Ribbon Fiber Cable Flat Sheath Cable with 50/125 micron Multimode Fiber (12-Fiber)
2.72 Ribbon Fiber Cable
2.73 Fiber Optic Loose Tube Plenum Cable
2.74 Single-Mode (OS2) Ribbon Fiber Cable
4.1.1 FTTP PON Architecture
List of Figures - Continued

4.1.2 TIA-942 Standard: Basic Data Center Topology
4.1.3 Multi-Tier Data Center Architecture
4.1.4 HFC Distribution System
4.1.5 Fiber Map
4.1.6 Fiber-to-the-Home Service Provider Pricing Comparison
4.1.7 Fiber Hut, Telecom Cabinets, and FTTH Network Configuration
4.1.8 Fiber Optic Equipment Building – Fiber Hut
4.1.9 Types of Metro Networks
4.1.10 Optical Fiber in an Aircraft
4.1.11 Optical Fiber Sensor Locations in an Aircraft
4.1.12 Africa: Subocean Fiber Cable
4.1.13 South-East Asia Japan Cable System
4.1.14 Data Centers in Japan
4.1.15 Data Centers in Asia
4.1.16 Distributed Continuous Fiber Optic Sensor System Components
5.2.1 Splice-On Connectors - Variety
5.2.2 Splice-On Connectors - MPO
5.2.3 MPO-Based Fiber Optic Cable Assemblies
5.2.4 TFOCA Multi-Channel Fiber Optic Connector
5.2.5 TFOCA-II® 12-Channel Fiber Optic Connectors
5.2.6 Fiber Optic Expanded Beam Connector Explanation Illustration
5.2.7 Harsh Environment Fiber Optic Expanded Beam Miniature Connector
5.2.8 Aerospace Fiber Optic Connector
5.2.9 Mechanical Splice
5.2.10 Fusion Splice/ Specialty Single-Mode Connector
5.2.11 Field installable, fusion splice, angled, single-mode connector
5.2.12 MTP® Fiber Optic Adapter
5.2.13 Field Installable Fiber Optic Connector
5.2.14 MTP® Compatible Splice-On Connector
5.2.15 Field Terminated Fusion Splice Connectors
5.2.16 SOC (Splice On Connector) Parts
5.2.17 MPO Patch Cord / Fan-out Cord and Adapter
5.2.18 Field Terminated Fusion Splice Connectors
5.2.19 Schematic of MPO connector/single fiber connector(s) “Fan-Out”
5.2.20 Comparison of FTTH Fusion Splice on Connectors (SOCs)
5.2.21 Comparison of FTTH Fusion Splice on Connectors (SOCs)
5.2.22 Comparison of FTTH Fusion Splice on Connectors (SOCs)
5.2.23 LC Splice-On Connectors (SOC), Singlemode UPC 0.9mm
5.2.24 Splice-On-Connectors – Variety
5.2.25 SC PC Single-mode Fusion Splice On Fiber Connector
5.2.26 8-Fiber MPO Splice-On Connector for 40G/100G Data Centers
5.2.27 Field Terminated Fusion Splice Connectors
5.2.28 Harsh Environment Expanded Beam Cable Assemblies
5.2.29 Harsh Environment SFF Multi-Channel Expanded Beam Connector
5.2.30 Fusion Splice on Connector
5.3.31 Field Installable Fiber Optic Connector (Mechanical Splice-Type)
5.2.32 Fiber Optic Patch Cord
5.2.33 Fiber Distribution Solutions
5.2.34 Active Optical Cable (AOC) Assembly
6.1.1 CFP2 ACO Transceiver for Beyond 100G Optical Networks
6.2.2.1 OTDR-SFP Optical Transceiver Block Diagram
6.2.2.2 Transceiver with Built-In Micro OTDR
6.2.2.3 Monitoring Optical Fiber Faults With SFP Transceiver Micro-OTDR
6.3.3.1 CWDM SFP 1G 80km Transceiver
6.3.3.2 VITA 66 Fiber Optic Backplane Connector Module
6.3.3.3 VPX Board Utilizes VITA 66.4 Optical Backplane
6.3.3.4 Typical Intra-Office Interconnections
6.3.3.5 1-Port OC-768c/STM-256c Tunable WDMPOS Interface Module
6.3.4.1 Monolithic Indium Phosphide Photonic Integrated Circuit (PIC)
List of Figures - Continued

6.3.4.2 Photonic Integrated Circuit (PIC)
6.3.5.1 400 Gbit/sec Dual Polarisation IQ Modulator
6.3.5.2 40 to 60Gbps Silicon-Based Optical Modulator
6.3.5.3 Integrated silicon optical transceiver for large-volume data transmission
7.1 ElectroniCast Market Research & Forecasting Methodology

List of Tables

1.1 Fiber Optic Connector Product Category List
1.2 Fiber Optic Connector Application Category List
1.3 Global Fiber Optic Connector/Mechanical Splice Market Forecast, by Region ($, Million)
1.4 Global Fiber Optic Connector/Mechanical Splice Market Forecast, by Type ($, Million)
1.5 Global Fiber Optic Connector/Mechanical Splice Market Forecast, by Application ($, Million)
2.1 40G / 100G Transceiver Form Factors
2.2 QSFP40G Portfolio Data Sheet
3.1.1 Global Fiber Optic Connector/Mechanical Splice Market Forecast, by Region ($, Million)
3.1.2 Global Fiber Optic Connector/Mechanical Splice Market Forecast, by Region (Quantity Basis)
3.1.3 Fiber Optic Connector Product Category List
3.1.4 Global Fiber Optic Connector/Mechanical Splice Market Forecast, by Type ($, Million)
3.1.5 Global Fiber Optic Connector/Mechanical Splice Market Forecast, by Type (Quantity Basis)
3.1.6 Global Fiber Optic Connector/Mechanical Splice Market Forecast, by Type (Average Price)
3.1.7 Single Mode Fiber Optic Connector Global Market Forecast, by Type ($, Million)
3.1.8 Multimode Fiber Optic Connector Global Market Forecast, by Type ($, Million)
3.2.1 Fiber Optic Connector/Mechanical Splice American Market Forecast, by Type ($, Million)
3.2.2 Fiber Optic Connector/Mechanical Splice American Market Forecast, by Type (Quantity Basis)
3.2.3 Single Mode Fiber Optic Connector American Market Forecast, by Type ($, Million)
3.2.4 Multimode Fiber Optic Connector American Market Forecast, by Type (Quantity Basis)
3.3.1 Fiber Optic Connector/Mechanical Splice EMEA Market Forecast, by Type ($, Million)
3.3.2 Fiber Optic Connector/Mechanical Splice EMEA Market Forecast, by Type (Quantity Basis)
3.3.3 Single Mode Fiber Optic Connector EMEA Market Forecast, by Type ($, Million)
3.3.4 Multimode Fiber Optic Connector EMEA Market Forecast, by Type (Quantity Basis)
3.4.1 Fiber Optic Connector/Mechanical Splice APAC Market Forecast, by Type ($, Million)
3.4.2 Fiber Optic Connector/Mechanical Splice APAC Market Forecast, by Type (Quantity Basis)
3.4.3 Single Mode Fiber Optic Connector APAC Market Forecast, by Type ($, Million)
3.4.4 Multimode Fiber Optic Connector APAC Market Forecast, by Type (Quantity Basis)
4.1.1 IEEE 802.3ae and 802.3ba Standard: OM3- and OM4-Specified Distances for Ethernet
4.1.2 IEEE 802.3ba 40G/100G - Physical Layer Specifications
4.1.3 United States Broadband Plan – Goals
4.1.4 Number of Lines (FTTX) By Selected Operators in Mexico 2015-2016 Installation (Quantity/Thousand)
4.1.5 Licensed Local Fixed Carriers in Hong Kong
4.1.6 Key specifications of the PC-1 Trans-Pacific System
4.1.7 Features: Distributed Continuous Fiber Optic Sensor System Components
4.2.1 Fiber Optic Connector Application Category List
4.2.2 Fiber Optic Connector/Splice Global Market Forecast, by Application ($, Million)
4.2.3 Fiber Optic Connector/Splice Global Market Forecast, by Application (Quantity Basis)
4.2.4 Fiber Optic Connector/Splice Global Market Forecast, by Application (Average Price)
4.2.5 Fiber Optic Connector/Splice American Market Forecast, by Application ($, Million)
4.2.6 Fiber Optic Connector/Splice American Market Forecast, by Application (Quantity Basis)
4.2.7 Single Mode Fiber Optic Connector American Market Forecast, by Application ($, Million)
4.2.8 Single Mode Fiber Optic Connector American Market Forecast, by Application (Quantity Basis)
4.2.9 Multimode Fiber Optic Connector American Market Forecast, by Application ($, Million)
4.2.10 Multimode Fiber Optic Connector American Market Forecast, by Application (Quantity Basis)
4.2.11 Fiber Optic Mechanical Splice American Market Forecast, by Application ($, Million)
4.2.12 Fiber Optic Mechanical Splice American Market Forecast, by Application (Quantity Basis)
4.2.13 Fiber Optic Connector/Splice EMEA Market Forecast, by Application ($, Million)
4.2.14 Fiber Optic Connector/Splice EMEA Market Forecast, by Application (Quantity Basis)
4.2.15 Single Mode Fiber Optic Connector EMEA Market Forecast, by Application ($, Million)
List of Tables - Continued

4.2.16 Single Mode Fiber Optic Connector EMEA Market Forecast, by Application (Quantity Basis)
4.2.17 Multimode Fiber Optic Connector EMEA Market Forecast, by Application ($, Million)
4.2.18 Multimode Fiber Optic Connector EMEA Market Forecast, by Application (Quantity Basis)
4.2.19 Fiber Optic Mechanical Splice EMEA Market Forecast, by Application ($, Million)
4.2.20 Fiber Optic Connector/Splice APAC Market Forecast, by Application (Quantity Basis)
4.2.21 Fiber Optic Connector/Splice APAC Market Forecast, by Application ($, Million)
4.2.22 Multimode Fiber Optic Connector APAC Market Forecast, by Application (Quantity Basis)
4.2.23 Single Mode Fiber Optic Connector APAC Market Forecast, by Application ($, Million)
4.2.24 Single Mode Fiber Optic Connector APAC Market Forecast, by Application (Quantity Basis)
4.2.25 Multimode Fiber Optic Connector APAC Market Forecast, by Application ($, Million)
4.2.26 Multimode Fiber Optic Connector APAC Market Forecast, by Application (Quantity Basis)
4.2.27 Fiber Optic Mechanical Splice APAC Market Forecast, by Application ($, Million)
4.2.28 Fiber Optic Mechanical Splice APAC Market Forecast, by Application (Quantity Basis)
5.1.1 Selected Global Fiber Optic Connector Suppliers and Product Matrix
5.1.2 Fiber Optic Connector/Mechanical Splice Global Competitive Market Share Estimates, 2016
5.2.1 Fusion Splice Connectors – Compatible Splice Machines
5.2.2 Fusion Splice Connectors – Product Offering
5.2.2 Fusion Splice Connectors – Product Offering
5.2.3 Fusion Splice Connectors – Product Offering
9.1 Fiber Optic Connector Product Category List
9.2 Fiber Optic Connector Application Category List