IPES-3424DSFP-2P

24 10/100TX PoE + 4 DualSpeed SFP Industrial L2+ Switch w/ Enhanced G.8032 Ring

- *High-density 10/100TX L2+ managed PoE at/af switch*
- *Enhanced G.8032 ring protection < 20ms with auto mode, enhanced mode, train mode and basic mode; Enhanced G.8032 ring covers multicast packets; MSTP 16MSTI /RSTP*
- *Support LACP link aggregation, IGMP v3/router port, DHCP server & DHCP Option82 for Port&VLAN based DHCP distribution, Mac based DHCP server, QoS by VLAN, SSH/SSL, HTTPS, INGRESS/EGRESS ACL L2/L3, IPv6, SMS*
- *Support relay contact DIDO for real time voltage, current, total PoE load and case ambient temperature*
- *Miss-wiring avoidance & Repowered auto ring restore*
- *User friendly UI, including auto topology drawing and DDM threshold with dB values***, Complete CLI supported*
- *USB slot for edited restoration and auto backup*

OVERVIEW

Lantech IPES-3424DSFP-2P is a high performance L2 + PoE managed industrial switch which provides L2 wire speed and advanced security function for network aggregation and backbone deployment. It delivers ITU G.8032 enhanced ring recovery less than 20ms including dynamic coupling ring, enhanced mode for easy configuration, comprehensive QoS, QoS by VLAN, advanced security including INGRESS/EGRESS ACL L2/L3, SSH/SSL, Mac based DHCP server, DHCP Option 82, DHCP server, IGMPv1/v2/v3/router port, QinQ* (double tag VLAN) which are important features required in train and large network. It also supports Cisco Discovery Protocol (CDP) and LLDP for Ciscoworks to detect the switch info and show on L2 map topology.

Compliant with IEEE802.3at/af standard, the Lantech IPES-3424DSFP-2P is able to feed each PoE port up to 30Watts@54VDC providing the connected PD devices at Gigabit speed. It also supports advanced PoE management including PoE detection and scheduling. PoE detection can detect if the connected PD is still alive then sending power; PoE scheduling is to allow pre-set power feeding schedule upon routine time table. Per port PoE status explicits voltage, current, watt and poe temperature information.

Lantech IPES-3424DSFP-2P features enhanced G.8032 ring which can be self-healed in less than 20ms for single ring topology protection covering Multicast packets. It also supports various ring topologies that covers double ring, multi-chain (under enhanced ring), train ring, basic ring by easy setup than others. The innovative auto-Ring configurator (auto mode) can calculate owner and neighbor in one step. It supports MSTP that allows RSTP over Vlan for redundant links with 16 MSTI. The ITU G.8032 Ring and RSTP can be co-existed in the same switch with different ports for the most flexible protection.

The IPES-3424DSFP-2P also embedded several features for stronger and reliable network protection in an easy and intuitive way. When the pre-set ring configuration failed or looped by miss-wiring, Lantech IPES-3424DSFP-2P is able to alert with the LED indicator and send out an email, traps or a SMS text. Repowered auto ring restore function (node failure protection) ensures the switches in a ring to survive after power breakout is back. The status can be shown in NMS when each switch is back. This feature prevents the broken ring and keep ring alive without any re-configuration needed when power back. Loop protection is also available to prevent the generation of broadcast storm when a dumb switch is inserted in a closed loop connection.

DHCP option 82 and relay agent function (port&vlan based DHCP distribution) can offer the same IP address on port base or vlan base where there is need to replace the new device connecting to Lantech switches to avoid any network disruption. The built-in DHCP Option 82 server offers the convenience of policy setting on the switch. Mac based DHCP server function assigns an IP address according to its MAC address to include dumb switches in DHCP network.

The user friendly UI, innovative auto topology drawing and topology demo makes IPES-3424DSFP-2P much easier to get

hands-on. The IPES-3424DSFP-2P supports DMI interface that can correspond with DDM SFPs (Digital diagnostic monitor) to display the five parameters in Lantech's UI, including optical output power, input power, temperature, laser bias current and transceiver supply voltage***. The TX power/RX power raw data is automatically converted to dB values for installer, making it easier to calculate the fiber distance. The complete CLI support allows professional setting.

Lantech IPES-3424DSFP-2P configuration can be exported and editable which makes the mass deployment easier. Also, it designs with a factory reset button where user can reset all settings to factory default. The built-in watch dog design can reboot switch automatically when CPU is found dead. The USB slot allows user to backup/ restore configuration.

QoS by VLAN can allow switch to tag QoS by VLAN regardless the devices acknowledge QoS or not in which greatly enhance the bandwidth management in a network.

The IPES-3424DSFP-2P DIDO function can support additional open/close physical contact for designate applications besides Port / Power events, for example, DIDO function can trigger alarm if the switch was moved or stolen. In case of events, the IPES-3424DSFP-2P will immediately send an email, SMS text to pre-defined addresses as well as SNMP Traps out. It provides 2DI and 2DO while disconnection of the specific port was detected; DO will activate the signal LED to alarm. DI can integrate the sensors into the auto alarm system and transfer the alarm information to IP network with email, text and SNMP.

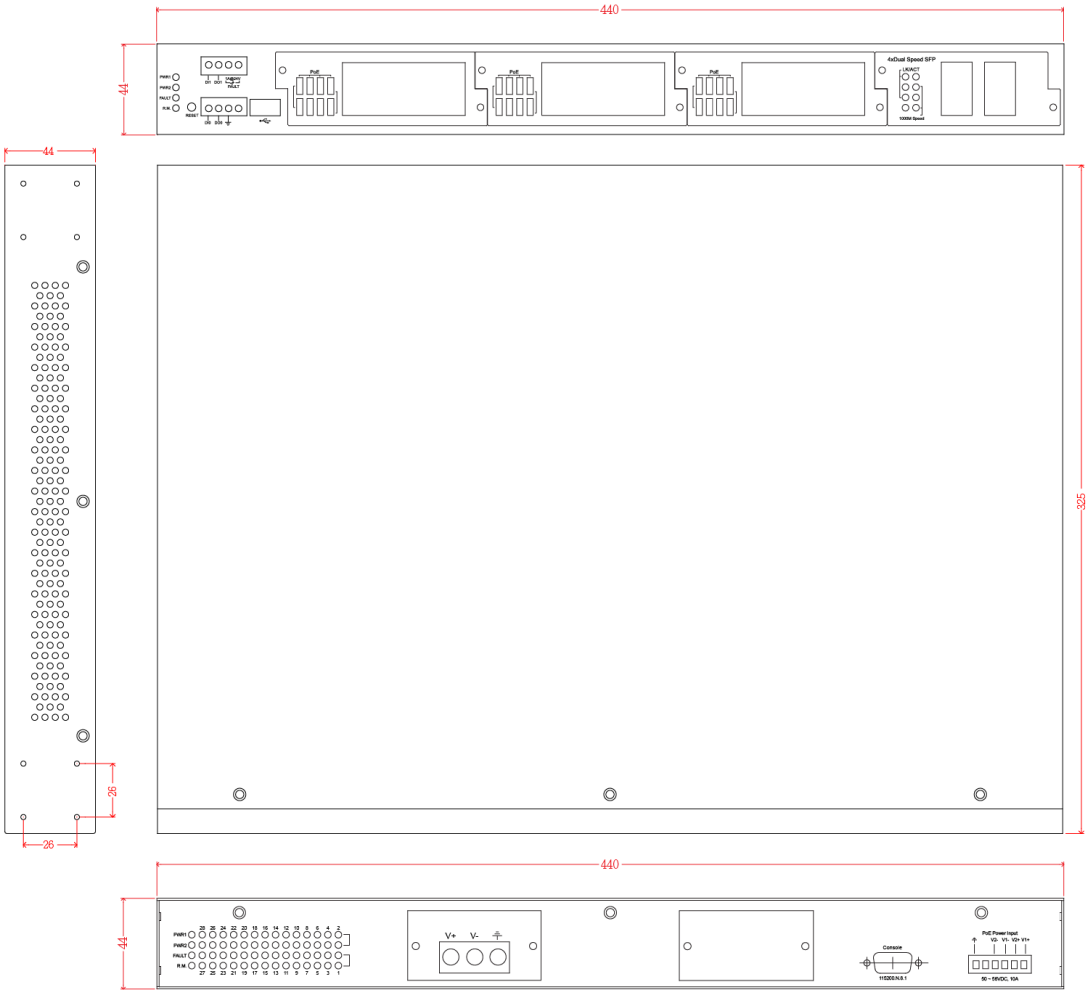
Lantech IPES-3424DSFP-2P supports PoE power inputs from DC45~56V with dual system power. It features high reliability and robustness withstanding extensive EMI/RFI phenomenon, lighting surge, inductive load switching, high ESD, high fault current environment usually found in Substation, Steel automation, Mining and Process control etc. Supporting the latest EEE (Efficient Energy Ethernet) standard, IPES-3424DSFP-2P can run under widely operational temperature (-40°C~75°C) in the harsh environment.

FEATURES & BENEFITS

- **System Interface/Performance**
  - *24x10/100TX PoE at/af+ 4 100M/1000M SFP L2+*
  - *16K MAC Address Table*
  - *Dual Power Supply Design for DC(9.5V~60VDC), AC(85V~265VAC) or 100V~370VDC*
  - *PoE power input with budget up to 720W*
  - *-40to 75C operation temperature(-E model)*
- **User friendly UI, Auto topology drawing, topology demo, Complete CLI for professional setting**
- **IP v6/v4 supported**
- **Enhanced G.8032 Ring protection in 20ms < 256 switches**
  - *Support various ring/chain topologies, including dynamic coupling ring*
  - *Enhanced G.8032 ring configuration with ease*
  - *Auto ring configuration(auto mode) for single ring*
  - *Co-exist with RSTP on different ports*
- **DDM to support SFP diagnostic function*****
  - *Automatically convert the raw data into dB values for TX power/RX power, making it easier to measure the fiber distance*
- **256 groups MSTP over VLAN**
- **VLAN**
  - *4K 802.1Q Vlan, Port Based VLAN,GVRP**, QinQ**
- **Port Trunk with LACP 14 trunks with automatic link failover**
- **LACP link aggregation to add bandwidth**
- **QoS (Quality of Service)**
  - *Supports IEEE 802.1p CoS*
  - *Per port provides 8 priority queues*
  - *Port-base,Tag-base and TOS Priority*
  - *Strict priority and WRR*
- **Security**
  - *SSL/SSH/INGRESS/EGRESS ACL L2/L3*
  - *Port Security: MAC address entries/Filter/MAC-Port binding*
  - *IP Security: IP address security management to prevent unauthorized intruder.*
  - *Management access control with priority*
  - *Login Security: IEEE802.1X/RADIUS*
  - *HTTPS for secure access to the web interface*
- **Miss-wiring avoidance**
  - *LED indicator*
  - *Email, traps, or SMS notification*
- **Repowered auto ring restore(node failure protection)**
  - *Ensure the switches in a ring to survive after power breakout is back*
  - *The status can be shown in NMS when each switch is back*
- **IGMP v1,v2,v3 and Proxy** for Multimedia Application; GMRP****
- **IGMP router to select another Query mode and support IGMP static routing for reversed IGMP flow (MVR) to bind with port for IP surveillance application**
- **Supports IEEE802.1ab LLDP, Cisco CDP**
- **DHCP server / client / DHCP Option 82 relay / DHCP Option 82 server for Port&Vlan based DHCP distribution**
- **Mac based DHCP server to assign IP address that includes dumb switches in DHCP network**
- **Bandwidth Control**
  - *Ingress Packet Filter and Egress Rate Limit*
  - *Broadcast/Multicast Packet Filter Control*
- **System Event Log, Email alert, SMS(mobile text) and SNMP Trap for alarm support**
- **Environmental sensor built-in to detect temperature, voltage, current and total PoE load and send out SNMP traps , SMS and emails if there is abnormal events**
- **TFTP/HTTP firmware upgrade; LantechTM**

- **InstaConfig** for multiple upgrade; USB for edited restoration and auto backup**
- **Reset / Factory default button to restore factory setting**
- **Watch dog design to reboot switch if CPU is found dead**
- **Provides EFT protection ±4K VDC for power line**
- **Supports ±8KV contact & ±15KV air Ethernet ESD protection**
- **2 DI/DO and 1 relay contact alarm**

DIMENSIONS (unit=mm)



SPECIFICATION

Hardware Specification

IEEE Standards	IEEE 802.3 10Base-T Ethernet
	IEEE 802.3u 100Base-TX Ethernet
	IEEE 802.3ab 1000Base-T Ethernet
	IEEE 802.3z Gigabit Fiber
	IEEE 802.3x Flow Control Capability
	ANSI/IEEE 802.3 Auto-negotiation
	IEEE 802.1Q VLAN
	IEEE 802.1p Class of Service
	IEEE 802.1X Access Control
	IEEE 802.1D Spanning Tree
	IEEE 802.1w Rapid Spanning Tree
	IEEE 802.1s Multiple Spanning Tree
	IEEE 802.3ad Link Aggregation Control Protocol (LACP)
	IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
	IEEE 802.1x User Authentication (Radius)
	IEEE 802.3t/af Power Over Ethernet
Switch Architecture	Back-plane (Switching Fabric): 10.4Gbps
Transfer Rate	14,880pps for Ethernet port
	148,800pps for Fast Ethernet port
	1,488,000pps for Gigabit Ethernet / Gigabit Fiber port
CPU	Marvell 800Mhz
RAM	256M Byte

Flash	128M Byte
MAC Address	16K MAC address table
Jumbo frame	10KB on all ports
PoE pin assignment	RJ-45 port # 1~# 24 support PoE at/af End-point, Alternative A mode. Per port provides up to 30W@54V capability. Positive (VCC+): RJ-45 pin 1,2. Negative (VCC-): RJ-45 pin 3,6.
PoE input voltage & Power feed voltage	Input V / Active Mode A /Output V 45~56V(af) / 48V@15W 54~56V(at) / 54V@30W
Connectors	24 10/100TX RJ-45 with auto MDI/MDI-X function 4 100M / 1000M Mini-GBIC : SFP sockets RS-232 console: Female DB-9 USB for automatic backup and restore
DDM	Conform to SFF-8472 to show diagnostic SFP with temperature, current, voltage, input and output power
Protocol	CSMA/CD
LED	Per unit: Power 1 (Green), Power 2 (Green), Alarm (Red) ,R.M (Green) Link/Activity (Green), Full duplex/collision(Yellow)), MINI GBIC (Link/Activity)(Green)
Power Supply	Two power sockets for switch system, 9.5~60VDC input IEC320 85~265VAC conversion (-AC model) AC/DC 85~265VAC/100V~370VDC conversion (-HV model) 48VDC for PoE
Power Consumption	Full load: 30W/ Unload: 13W
PoE Power Budget	720W
Relay Alarm	Provides one relay output for port breakdown, power fail and alarm. Alarm Relay current carry ability: 1A @ DC24V
DI/DO	2 Digital Input (DI) : Level 0: -30~2V / Level 1: 10~30V Max. input current:8mA 2 Digital Output(DO): Open collector to 40 VDC, 200mA
RTC	RTC(Real Time Clock) to keep track of time always
Factory reset button & watch dog design	Factory reset button to restore back to factory default settings. Watch dog design can reboot switch automatically when CPU is found dead
Case Dimension	19" Metal case,IP-30; 440mm(W)x325mm(D)x44mm(H)
Operating Humidity	5%~95% (Non-condensing)
Operating Temperature	Standard: -20˚C ~60˚C Extended temperature : -40˚C ~75˚C
Storage Temperature	-40˚C ~85˚C
EMI	FCC Class A, CE EN61000-4-2 (ESD), CE EN61000-4-3 (RS), CE EN-61000-4-4 (EFT), CE EN61000-4-5 (Surge), CE EN61000-4-6 (CS), CE EN61000-4-8, CE EN61000-4-11, CE EN61000-4-12, CE EN55022 Class A, CE EN55024
Stability Testing	IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration), IEC60870-2-2, IEC60068-2-30
Warranty	5 years

Software Specification

Management	SNMP v1 v2c, v3/ Web/Telnet/CLI Management
SNMP MIB	RFC 1215 Traps MIB*, RFC 1213 MIBII RFC 1158 MIBII RFC 1157 SNMP MIB*, RFC 1493 Bridge MIB*, RFC 1573 IF MIB RFC 2674 VLAN MIB, Partial RFC 1757 RMON, RFC 2674 Q-Bridge MIB*; Bridge MIB*, LLDP MIB* RSTP MIB* Private MIB
VLAN	Port based VLAN, up to 28 groups IEEE802.1Q Tag VLAN Static VLAN groups up to 256, Dynamic VLAN group up to 2048, VLAN ID from 1 to 4096 GVRP up to 256 groups** Multicast VLAN registration*, QinQ*
Port Trunk with LACP	LACP Port Trunk: 8 Trunk groups/Maximum 24 trunk members
LLDP	Support LLDP to allow switch to advise its identification and capability on the LAN
CDP	Cisco Discovery protocol for topology mapping
ITU G.8032	Support ITU G.8032 v2/2012 for Ring protection in less than 20ms for self-heal recovery (basic mode) Support various ring/chain topologies Includes dynamic coupling ring Enhanced G.8032 ring configuration with ease Co-exist with RSTP on different ports
PTP v2	Support hardware-based IEEE1588 PTPv2, End to End (2-step) and Peer to Peer (2-step) modes in Transparent Clock, with 4 Dual Speed SFP
User friendly UI	■ Auto topology drawing with detail node info ■ DDM threshold with dB values*** ■ Complete CLI for professional setting
Spanning Tree	Support IEEE802.1d Spanning Tree,IEEE802.1w Rapid Spanning Tree, IEEE 802.1s MSTP
Quality of Service	The quality of service determined by port, Tag and IPv4 Type of service, IPv4 Differentiated Services Code Points - DSCP
Class of Service	Support IEEE802.1p class of service, per port provides 8 priority queues
QoS by VLAN	Tagged QoS by VLAN for all devices in the network
Port Security	Support 50 entries of MAC address for static MAC and another 50 for MAC filter
Port Mirror	Support 3 mirroring types: "RX, TX and Both packet"
Multicast Filtering & IGMP	Support IGMP snooping v1,v2,v3; Supports IGMP static route IGMP query and router port 256 multicast groups and IGMP query GMRP**
MVR	Static multicast forwarding forward reversed IGMP flow (MVR) with multicast packets binding with ports for IP surveillance application
Bandwidth Control	Support ingress packet filter and egress packet limit. The egress rate control supports all of packet type,

	the limit rates are 0~100Mbps. Ingress filter packet type combination rules are Broadcast/Multicast/Flooded Unicast packet, Broadcast/Multicast packet, Broadcast packet only and all types of packet. The packet filter rate can be set from 0 to 100Mbps The packet filter rate can be set an accurate value through the pull-down menu for the ingress packet filter and the egress packet limit.
Network Security	Support 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder. 802.1X access control for port based and MAC based authentication/MAC-Port binding Management access control with priority Ingress/Egress ACL L2/L3 SSL/ SSH for Management HTTPS for secure access to the web interface TACACS+ for Authentication
Protection	■ Miss-wiring avoidance ■ Repowered auto ring restore (node failure protection) ■ Loop protection
PoE Management	■ PoE Detection to check if PD is hang up then restart the PD ■ PoE Scheduling to On/OFF PD upon routine time table ■ Per port PoE status including voltage, current, watt and PoE temperature
Flow Control	Support Flow Control for Full-duplex and Back Pressure for Half-duplex
System Log	Support System log record and remote system log server

SMTP/Text SMS	Supports SMTP Server and 8 e-mail accounts for receiving event alert; can send SMS text alert via mobile
SNMP Trap	Up to 10 trap stations; trap types including: ● Device cold start ● Authorization failure ● Port link up/link down ● DI/DO open/close ● Typology change(ITU ring) ● PoE ping failure ● Power failure ● Environmental abnormal
DHCP	Provide DHCP Client/ DHCP Server/DHCP Option 82/Port based&VLAN based DHCP distribution (DHCP relay agent)
Mac based DHCP Server	Assign IP address by Mac that can include dumb switch in DHCP network
DNS	Provide DNS client feature and support Primary and Secondary DNS server.
SNTP	Support SNTP to synchronize system clock in Internet
Firmware Update	Support TFTP /HTTP firmware update ; InstaConfig mass firmware upgrade**
Configuration backup and restore	Support text backup and restore; USB for edited restoration and auto backup

*Future Release

**Optional

***Optional DDM SFP required

ORDERING INFOMATION

- **IPES-3424DSFP-2P…….....P/N: 8380-602**
  24 10/100TX POE at/af + 4 Dual SFP L2 plus Industrial Switch
  Built-in 1x isolated DC 12~56VDC power supply + 1x additional power socket + 1x 48VDC PoE power input; -20˚C to 60˚C
- **IPES-3424DSFP-2P-E…….....P/N: 8380-603**
  24 10/100TX POE at/af + 4 Dual SFP L2 plus Industrial Switch
  Built-in 1x isolated DC 12~56VDC power supply + 1x additional power socket + 1x 48VDC PoE power input; -40˚C to 75˚C
- **IPES-3424DSFP-2P-AC…….....P/N: 8380-604**
  24 10/100TX POE at/af + 4 Dual SFP L2 plus Industrial Switch
  Built-in 1x isolated AC85~265VAC IEC320 power conversion + 1x additional power socket + 1x 48VDC PoE power input; -20˚C to 60˚C
- **IPES-3424DSFP-2P-AC-E…….....P/N: 8380-605**
  24 10/100TX POE at/af + 4 Dual SFP L2 plus Industrial Switch
  Built-in 1x isolated AC85~265VAC IEC320 power conversion + 1x additional power socket + 1x 48VDC PoE power input; -40˚C to 75˚C
- **IPES-3424DSFP-2P-HV…….....P/N: 8380-606**
  24 10/100TX POE at/af + 4 Dual SFP L2 plus Industrial Switch
  Built-in 1x isolated AC/DC 85~265VAC/100V~370VDC power conversion + 1x additional power socket + 1x 48VDC PoE power input; -20˚C to 60˚C
- **IPES-3424DSFP-2P-HV-E…….....P/N: 8380-607**
  24 10/100TX POE at/af + 4 Dual SFP L2 plus Industrial Switch
  Built-in 1x isolated AC/DC 85~265VAC/100V~370VDC power conversion + 1x additional power socket + 1x 48VDC PoE power input; -40˚C to 75˚C

OPTIONAL ACCESSORIES

55VDC DIN Rail Power for 802.3at Applications

- **AD1240-48S-5** 48~56VDC, 4.3A, Wide AC Input, Build-in fan Cooled, DIN Rail or Wall Mounted, RoHS, Operating Temp. -20°C~50°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C)
- **AD1360-48S-5** 48~56VDC, 6.5A, Wide AC Input, Build-in fan Cooled, DIN Rail or Wall Mounted, RoHS, Operating Temp. -20°C~50°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C)
- **AD1500-48S-5** 48~56VDC, 9A, Wide AC Input, Build-in fan Cooled, DIN Rail or Wall Mounted, RoHS, Operating Temp. -20°C~50°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C)

Mini GBIC (SFP)

- **8330-162X** MINI GBIC 1000SX (LC/MM/0.5KM) Transceiver
- **8330-163X** MINI GBIC 1000SX2 (LC/MM/2KM) Transceiver
- **8330-165X** MINI GBIC 1000LX (LC/SM/10KM) Transceiver
- **8340-0591** MINI GBIC 1000LHX (LC/SM/40KM) Transceiver
- **8330-166** MINI GBIC 1000XD (LC/SM/50KM) Transceiver
- **8330-169** MINI GBIC 1000XD (LC/SM/60KM) Transceiver
- **8330-167** MINI GBIC 1000ZX (LC/SM/80KM) Transceiver
- **8330-170** MINI GBIC 1000EZX (LC/SM/120KM) Transceiver
- **8330-168** MINI GBIC 10/100/1000T (100m) Transceiver
- **8330-060** MINI GBIC 100Base (LC/MM/2KM) Transceiver
- **8330-065** MINI GBIC 100Base (LC/MM/5KM) Transceiver
- **8330-061** MINI GBIC 100Base (LC/SM/30KM) Transceiver
- **8330-197** 1.25Gbps BiDi SFP 0.5KM Transceiver (WDM 1310)
- **8330-198** 1.25Gbps BiDi SFP 0.5KM Transceiver (WDM 1550)
- **8330-195** 1.25Gbps BiDi SFP 2KM Transceiver (WDM 1310)
- **8330-196** 1.25Gbps BiDi SFP 2KM Transceiver (WDM 1550)
- **8330-188** 1.25Gbps BiDi SFP 10KM Transceiver (WDM 1310)
- **8330-189** 1.25Gbps BiDi SFP 10KM Transceiver (WDM 1550)
- **8330-186** 1.25Gbps BiDi SFP 20KM Transceiver (WDM 1310)
- **8330-187** 1.25Gbps BiDi SFP 20KM Transceiver (WDM 1550)
- **8330-180** 1.25Gbps BiDi SFP 40KM Transceiver (WDM 1310)
- **8330-182** 1.25Gbps BiDi SFP 40KM Transceiver (WDM 1550)
- **8330-181** 1.25Gbps BiDi SFP 60KM Transceiver (WDM 1310)
- **8330-183** 1.25Gbps BiDi SFP 60KM Transceiver (WDM 1550)
- **8330-184** 1.25Gbps BiDi SFP 80KM Transceiver (WDM 1490)
- **8330-185** 1.25Gbps BiDi SFP 80KM Transceiver (WDM 1550)
- **8330-071** 125Mbps BiDi SFP 2KM (WDM 1310) Transceiver
- **8330-072** 125Mbps BiDi SFP 2KM (WDM 1550) Transceiver
- **8330-069** 125Mbps BiDi SFP 20KM (WDM 1310) Transceiver
- **8330-068** 125Mbps BiDi SFP 20KM (WDM 1550) Transceiver
- **8330-080** 125Mbps BiDi SFP 40KM (WDM 1310) Transceiver
- **8330-082** 125Mbps BiDi SFP 40KM (WDM 1550) Transceiver
- **8330-081** 125Mbps BiDi SFP 60KM (WDM 1310) Transceiver
- **8330-083** 125Mbps BiDi SFP 60KM (WDM 1550) Transceiver
- **8330-084** 125Mbps BiDi SFP 80KM (WDM 1310) Transceiver
- **8330-085** 125Mbps BiDi SFP 80KM (WDM 1550) Transceiver
- **8330-191** Dual Speed SFP 100M/1000M-LX 10KM Transceiver

All SFP part no. with D are with DDM function

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