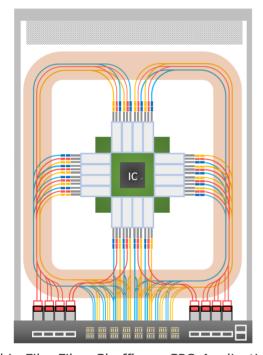


### High Bandwidth Fiber Shuffle Solution with Pre-terminated Multi-Fiber Connectivity

Optec is a leading JDM and ODM of Fully Customized High Bandwidth Fiber Shuffle Solution in Co-Packaged Optics (CPO) related industry. Over the last decade, Optec is well-experienced in seamless collaboration with multi-national GPU-Focus brands, CPO switch partners with applications in Artificial Intelligence or Machine Learning and high performance computing hardware manufacturers, in order to deliver a various form factors of Ultra High Density (1000+) Fiber Count Shuffle to meet and exceed customer's expectation.



Thin Film Fiber Shuffle on CPO Application



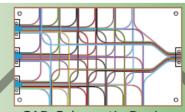
Stackable Thin Film Layers Design

# Optec's Core Capabilities as CPO enabler:

- **1. Customizability:** Co-developed thin film shuffle design through customer centricity focus and capable to offer 1000+ Fiber Counts shuffle circuitry.
- **2. Flexibility:** Integrated bend insensitive fibers and substrates material make CPO design and assembly process easy.
- **3. Compatibility:** Available for various shuffle sizes, lamination substrate materials, multiple fiber types, fiber arrays and interconnects.
- **4. Manufacturability:** Utilized fully automated high precision fiber routing technology to maximize the production efficiency.
- **5. Scalability:** In-house developed fiber routing machine can optimize the productivity to meet increased demands.
- **6. Durability:** Fiber crossovers are designed to minimize stress across optical fibers
- **7. Reliability:** Complied with precised fiber mapping inspection by customized test fixture.
- **8. Traceability:** Implemented a serial code tracing system on each ex-factory fiber shuffle.



Semi Automated Fiber Laying



CAD Schematic Design



Fully Automated Fiber Laying







## High Bandwidth Fiber Shuffle Solution with Pre-terminated Multi-Fiber Connectivity

# **Field Applications in Different Scenarios:**

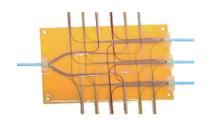
Chips to Chips (CPO)

Optical Cross-Connect (OXC)

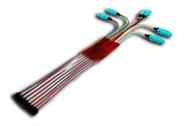
High Bandwidth Optical Switching Customized Cable Management

System Interconnect

#### **Customized Shuffle Form Factors:**







Thin Film Shuffle

Shuffle Box

Breakout Shuffle

Parameter	MIN	Typical	MAX	Unit
Storage Temperature	-55		+125	°C
Operating Temperature	-40		+100	°C
Optical Fiber Nominal OD		250		μm
Circuit Thickness	0.6		1.2	mm
Matched Length Tolerance		<+/-4		mm

Remarks: Refer to the specification of Thin Film Shuffle

# **Pre-terminated Interconnect Options:**

2D Fiber Array MPO/MT Ferrule Expanded Beam I/O VSFF I/O Single Channel I/O











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