

## OptiTIM Mechanical Durability

The purpose of this test is to characterize:

1. The durability of the OptiTIM solution after 500 hrs of insertions.
2. Using QSFP-DD module to preform 500 mechanical insertions after pre-heating at 80 °C for 30 mins.

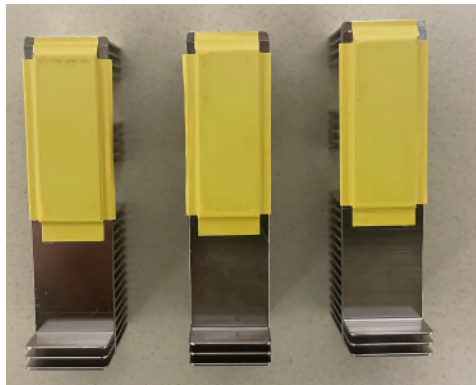
### Test Equipment:

Description	Manufacturer
QSFP-DD Heatsinks (3)	Custom, Customer designed
QSFP-DD Optical Module	Multilane
Insert test setup	"In house"

### Test Procedure:

#### Prepare 3 heat sinks for testing.

1. Scribe identification numbers on each of the 3 heatsinks.
2. Prepare 3 heat sink samples



3 heat sink samples, HS1, HS2 and HS3

#### Perform Insertion Tests

1. Perform Insertion tests where the module temperature is kept at 50 °C.
2. Take pictures of the sample at every 100 insertions cycles

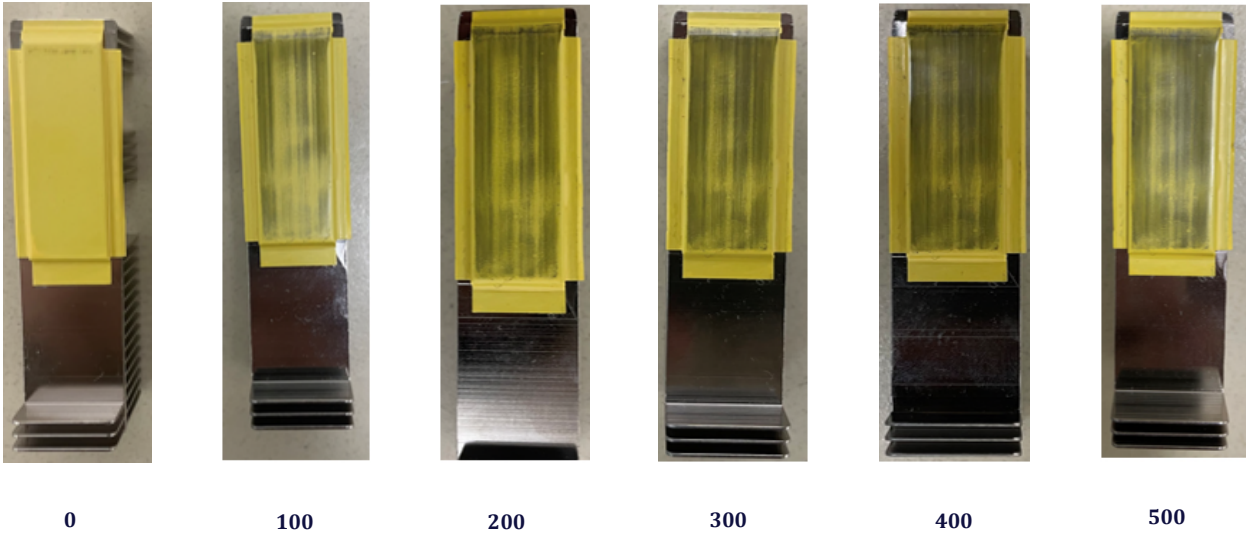
**Insertion Test Setup:**



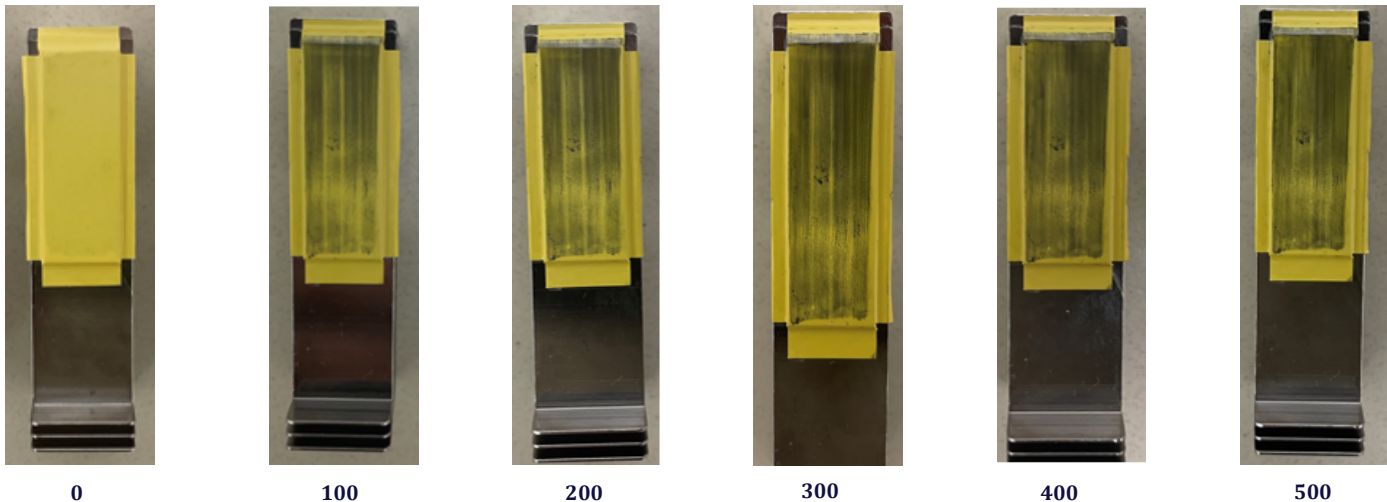
Insertion test run while module is operating at 50 °C

**Insertion Test Results:**

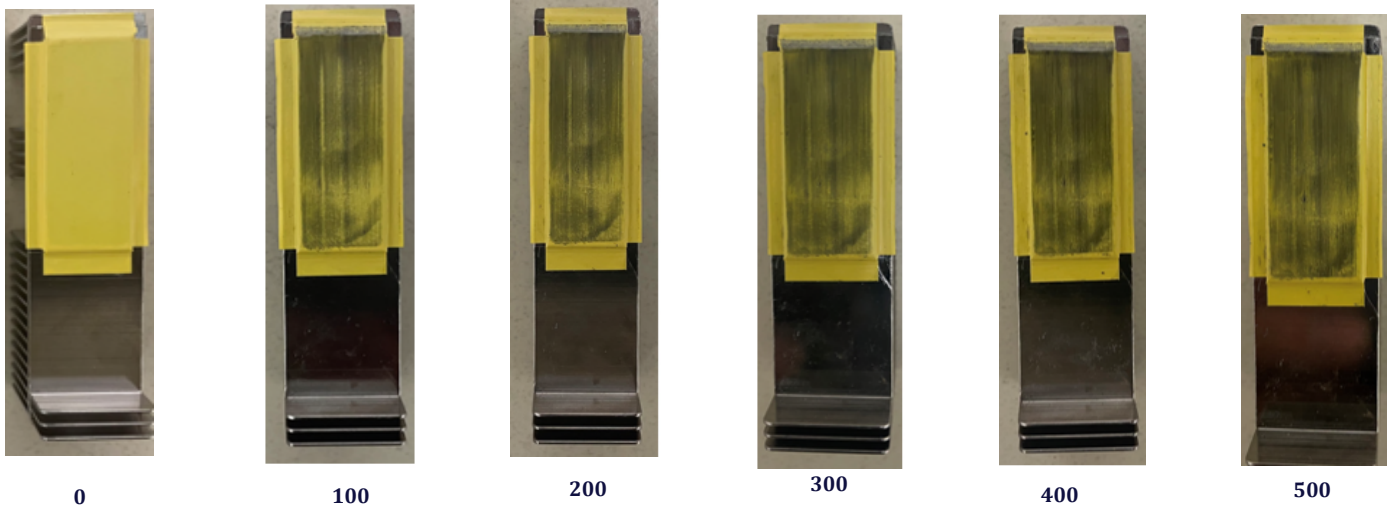
**Heat Sink 1**



**Heat Sink 2**



**Heat Sink 3**



**Conclusion:**

No obvious damage was observed after 500 insertions for all 3 samples. All 3 samples passed the 500 insertions test.

	100 insertions	200 insertions	300 insertions	400 insertions	500 insertions
Heat Sink 1	pass	pass	pass	pass	pass
Heat Sink 2	pass	pass	pass	pass	pass
Heat Sink 3	pass	pass	pass	pass	pass