

RoHS (Restriction of Hazardous Substances)

Certificate of Compliance

MKS Instruments, Inc. hereby certifies that the products listed in the table below are compliant with the European Union's RoHS directive 2011/65/EU (effective 22 July 2017) regarding the restriction of the use of certain hazardous substances in electrical and electronic equipment. The products listed below are compliant to RoHS requirements for concentration limitations, by weight of homogeneous material, of the following six substances:

| M-OTS-SST-510-8-I |
|----------------------------|
| RoHS Compliant Part Number |
| |
| <0.1% (1000 PPM) |
| <0.1% (1000 PPM) |
| <0.1% (1000 PPM) |
| <0.01% (100 PPM) |
| <0.1% (1000 PPM) |
| <0.1% (1000 PPM) |
| |

The above thresholds are not in place for any legally allowable exemptions per Annex III of the aforementioned directive. If such exemptions are in use, they are noted on the attached table. If no exemptions are in use, then no further information is provided.

All information provided in this Certificate of Compliance is accurate to MKS' knowledge as of the date of this certification. This confirmation is made based our internal engineering risk analysis of the individual items possibly being present along with the best technical information made available to MKS from its material suppliers.

Mark M. Gitin, Ph.D. Vice-President and General Manager Photonics Business Unit

MKS Instruments, Inc.

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_6/6/18___

Date

MKS CONFIDENTIAL

Revision: B

MKS RoHS2 PRODUCT EXEMPTION LISTING

| MKS Product | MKS Product | Annex III | Annex III |
|-------------|-------------|-------------|-----------------------|
| Number | Description | Exemption # | Exemption Description |
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MKS Instruments, Inc.

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