



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx QPS 20.0015X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 3	Issue 2 (2021-07-23)
Date of Issue:	2024-02-28		Issue 1 (2021-02-03)
Applicant:	Tornado Spectral Systems 5155 Spectrum Way, Unit# 6 Mississauga, ON L4W 5A1 Canada		Issue 0 (2021-01-29)
Equipment:	OPIS 35 monochromatic IR laser for use with HyperFlux PRO Plus 785 Raman (HFPP) or the Process Guardian Raman (PGR) spectroscopy systems and optional Integrated Fiber Switch (IFS)		
Optional accessory:			
Type of Protection:	"i" "op is"		
Marking:	IECEx QPS 20.0015X OPIS 35 [Ex ia op is IIC T4 Ga], [Ex ia op is IIIC Da] IFS [Ex ia IIC Ga], [Ex ia IIIC Da]		

Approved for issue on behalf of the IECEx
Certification Body:

D, Adams P.Eng.

Position:

Manager, Hazardous Locations Department [Ex Equipment]

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

QPS
Evaluation Services Inc.
81 Kelfield St
Unit 8
Toronto, Ontario M9W 5A3
Canada





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Manufacturer: **Tornado Spectral Systems**
5155 Spectrum Way, Unit# 6
Mississauga, ON L4W 5A1
Canada

Manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

[IEC 60079-28:2015](#) Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
Edition:2

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[CA/QPS/ExTR20.0007/00](#)
[CA/QPS/ExTR20.0007/03](#)

[CA/QPS/ExTR20.0007/01](#)
[CA/QPS/ExTR20.0007/04](#)

[CA/QPS/ExTR20.0007/02](#)

Quality Assessment Report:

[CA/QPS/QAR20.0003/02](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

OPIS 35 monochromatic IR laser for use with HyperFlux PRO Plus 785 Raman (HFPP) or the Process Guardian Raman (PGR) spectroscopy systems and optional Integrated Fiber Switch (IFS)

OPIS 35 [Ex ia op is IIC T4 Ga], [Ex ia op is IIIC Da]

IFS [Ex ia IIC Ga], [Ex ia IIIC Da]

120Vac / 240Vac 8W 50/60Hz

OPIS 35 IS barrier entity parameters:

MTL7728+

$U_o = 28V_{dc}$, $I_o = 93mA$, $C_o = 0.083\mu F$, $L_o = 3.05mH$

MTL7787+

$U_o = 28V_{dc}$, $I_o = 93mA$, $C_o = 0.083\mu F$, $L_o = 3.05mH$

IFS IS barrier entity parameters:

MTL7787P+

$U_o = 28V_{dc}$, $I_o = 119mA$, $C_o = 0.083\mu F$, $L_o = 2.51mH$

SPECIFIC CONDITIONS OF USE: YES as shown below:

The following conditions relate to safe installation and/or use of the equipment.

1. The OPIS 35 cannot be used as a stand-alone unit, independent of a PRO Plus. As such, the PRO Plus User Manual is a necessary companion to this document.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
addition of IFS Accessory