




Certificate Number  
QPS 20ATEX1000X  
Issue:01

## EU Type Examination Certificate

### Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

Manufacturer **Tornado Spectral Systems Inc.**  
 Address 5155 Spectrum Way, Unit# 6  
 Mississauga, ON  
 L4W 5A1  
 Canada  
 Equipment OPIS 35 monochromatic IR laser accessory

Markings

 II (1)G  
 [Ex ia op is IIC T4 Ga], -10°C ≤Ta≤+35°C

Description

The OPIS 35 monochromatic IR laser accessory is an associated apparatus 'op is' output device for use only with the HyperFlux PRO Plus 785 Raman spectroscopy system or "PRO Plus". When used properly together with a PRO Plus, the OPIS 35 makes the PRO Plus instrument compatible with Intrinsically Safe requirements for a Zone 0 hazardous potentially explosive environment.

The OPIS 35 cannot be used as a stand-alone unit, independent of a PRO Plus.

The laser power limiting circuit design was assessed per EN 60079-11:2012, clause 5.2, Level of protection "ia" as it applies to EN 60079-28:2015.

The 'ia' markings that are part of the Ex protection method relate to the IS barriers installed as part of the end device.

**Electrical parameters:**

120Vac / 240Vac 8W 50/60Hz  
 MTL7728+  
 Uo = 28Vdc, Io = 93mA, Co = 0.083µF ,Lo = 3.05mH  
 MTL7787+  
 Uo = 28Vdc, Io = 93mA, Co = 0.083µF, Lo = 3.05mH

**Optical output:**

<35mW



<b>Certificate Number</b>
QPS 20ATEX1000X
Issue:01

Conditions of manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

1. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.

Special Conditions for Safe Use (Conditions of Certification)

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.

Certificate Issue #

01

Certificate History

00 - Initial release

01 - address change of applicant and manufacturer

Associated Report

ATX35640-3R1

The equipment is specified in the description of this certificate and the documents to which it refers.

QPS Europe BV, Berg en Dalseweg 122, 6522BW Nijmegen, Notified Body Number 2876, The Netherlands,, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use.

This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacturer of the equipment or component and are separately certified.

Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

Standard	Edition
EN IEC 60079-0	2018
EN 60079-11	2012
EN 60079-28	2015

The following documents describe the equipment or component defined in this certificate:  
Issue 00

Title:	Drawing No.:	Rev. Level:	Date:
OPIS 35 HARDWARE INSTALLATION AND OPERATION MANUAL	RS-010	2	May 11, 2021
OPIS Assembly Instructions	WPI-010	0	21-Nov-2019
785nm FP-LD TO-CAN QLF073x series C00066-07.pdf	C00066-07	---	April 2017



AC Line in and OnOff Button KMF	KMF	---	---
0978000-00 Opis Case - MASTER ASSEMBLY	0978000-00	00	20 Dec 2018
0978001-01 Base	0978001-01	01	08 Aug 2019
0978002-01 Base Assembly	0978002-01	01	08 Aug 2019
0978003-00 Fin	0978003-00	00	19 Dec 2018
0978004-00 Fin Assembly	0978004-00	00	19 Dec 2018
0978005-00 Divider	0978005-00	00	19 Dec 2018
0978006-00 Divider Assembly	0978006-00	00	19 Dec 2018
0978007-00 Shell	0978007-00	00	19 Dec 2018
0978008-00 Shell Assembly	0978008-00	00	19 Dec 2018
0978009-00 Spine Wall Assembly	0978009-00	00	19 Dec 2018
0978010-00 Aluminum Wall LH	0978010-00	00	19 Dec 2018
0978011-00 Aluminum Wall RH	0978011-00	00	19 Dec 2018
0978012-00 Laser Heatsink	0978012-00	00	19 Dec 2018
0978013-00 Laser Assembly	0978013-00	00	19 Dec 2018
0978014-00 Interface PCB	0978014-00	00	19 Dec 2018
0978015-00 Laser Plug Bracket	0978015-00	00	19 Dec 2018
0978016-00 Aluminum Wall LH - Finish	0978016-00	00	16 Dec 2018
0978017-00 Aluminum Wall RH - Finish	0978017-00	00	16 Dec 2018
0978018-00 Shell - Finish	0978018-00	00	16 Dec 2018
0978019-01 Base - Labels	0978019-01	01	08 Aug 2019
OPIS 35 (v2.3) BoM (Full) - 20190903.xlsx	QC-059	2.3	14 Feb 2020
800101-002 Label Laser Safety, OPIS 35 2.25x1.75in.pdf	800101-002	1.0	22 Feb 2019
OPIS 35 Label File	QC-060	3	14 April 2021
192-14395-D TEST PROCEDURE FOR ATEX BOXES	192-14395-D	D	10 Dec 2019
195-14396-A ATEX BOX FINISHED GOODS	195-14396-A	A	26 Apr 2019
117-14211-B, ATEX BOX PC BOARD SET ASSY DWG	117-14211-B	B	01 Dec 2018
117-14211-B, ATEX BOX PC BOARD SET SCHEMATIC	117-14211-C	C	4 Dec 2019
117-14211-C, ATEX BOX PC BOARD SET FAB STACKUP	117-14211-C	C	21 Jan 2020
117-14211-E, ATEX BOX PC BOARD SET BOM	117-14211-E	E	5 Dec 2019
17-14211-B, ATEX BOX PC BOARD SET – CADCAM.zip	117-14211-B	B	31 Oct 2018
GER-OPIS 35-R1.zip		1	16 Jan 2019
6048-6053 (Horizontal Test Point)	6048-6053	B	14 Feb 2001
opis 35 interface board	---	2.0	6 May 2021
OPIS 35 Interface PCB - PCB Layout Instructions	---	2.0	6 May 2021
OPIS 35 INTERFACE PCB BOM	---	2.0	11 May 2021
119-14030-A Epoxy Tracon 2151 Blue P000034	---	---	June 2010



**Certificate Number**  
QPS 20ATEX1000X  
Issue:01

170-13776-B QTI QTMB-14C3 10K OHM THERMISTOR FOR SLM BOXX	170-13776-B	B	5 Dec 2019
170-13776-B R-T CALCULATOR ADDENDUM	170-13776-B	B	5 Dec 2019

**Instructions for installation and use**

Document	Sheets	Rev	Title
Instructions	27	2	OPIS User Installation Operation and Maintenance Manual

Issued By: Rob Kohuch

Signature: *Rob Kohuch*

Date: July 28, 2021