Certificate of Compliance

Certificate:	1333271	**Master Contract:**	161241
Project:	80288724	**Date Issued:**	2026-05-07
Issued to:	**Chemelex LLC** **899 Broadway Street** **Redwood City, California** **94063** **United States** **Attention:** Amanda White	**Issued by:**	*Ethan Poopalasingam* Ethan Poopalasingam

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

C US

PRODUCTS

Class 2878 01 HEATERS - Cable and Cable Sets - For Hazardous Locations
Class 2878 81 HEATERS - For Hazardous Locations-Certified to U.S. Standards

Ex 60079-30-1 IIC T* Gb

Ex 60079-30-1 IIIC T* Db

Class I Zone 1 AEx eb IIC T* Gb

Zone 21 AEx tb IIIC T* Db

Electrical Heat Tracing Systems for Hazardous Locations

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Parallel self-regulating heating cables for heating of pipe or vessel tracing, **BTV*-CT and **BTV*-CR where ** indicates watts per foot (min. 3, max 10)@10°C (50°F) and * indicates 1 for 120V ac products and 2 for 208-277V ac; max continuous temperature 65ºC (150°F); max intermittent exposure temperature 85°C (185°F), T-Code Rating T6; min recommended installation temperature (-60°C) (-76°F); usage –WS for **BTV*-CT and -W for **BTV*-CR; the maximum steady state current is 32A.

Parallel self-regulating heating cables for heating of pipe or vessel tracing, **QTVR*-CT where ** indicates watts per foot (min. 10, max 20)@10°C (50°F) and * indicates 1 for 120V ac products and 2 for 208-277V ac; max continuous operating and exposure temperature 110ºC (225°F), T-Code Rating T4; min recommended installation temperature (-60°C) (-76°F); usage -WS; the maximum steady state current is 32A.

Parallel self-regulating heating cables for heating of pipe or vessel tracing, Type **XTV*-CT where ** indicates watts per foot (4, 5, 8, 10, 12, 15, 20)@10°C (50°F) and * indicates 1 for 120V ac products and 2 for 208-277V ac products; Usage -WS. Maximum continuous operating temperature (trace heater energized) is 121°C, and Min installation temperature is -60°C; the maximum steady state current is 32A.

Electrical Resistance Trace Heater	Temperature Class
4XTV2-CT	T3
5XTV1-CT, 5XTV2-CT	T3
8XTV2-CT	T3
10XTV1-CT, 10XTV2-CT	T3
12XTV2-CT	T3
15XTV1-CT	230°C (T2)
15XTV2-CT	T3
20XTV1-CT	230°C (T2)

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20XTV2-CT	240°C (T2)

Parallel self-regulating heating cables for heating of pipe or vessel tracing, Type **XTVR*-CT where ** indicates watts per foot (3, 5, 8, 10, 12, 15, 20)@10°C (50°F), * indicates 1 for 120V ac products and 2 for 208-277Vac products; Usage -WS. Maximum continuous operating temperature (trace heater energized) is 150°C, and Min installation temperature is -60°C; the maximum steady state current is 32A.

Note: Type "XTVR"-CT is part of "XTV" series family with an addition of a new low wattage model 3XTVR2-CT and higher maximum continuous operating temperature . XTVR models has the same mechanical specification and jacket material as the existing "XTV" models.

Electrical Resistance Trace Heater	Temperature Class
3XTVR2-CT	T3A
5XTVR1-CT, 5XTVR2-CT	T3A
8XTVR2-CT	T3A
10XTVR1-CT, 10XTVR2-CT	T3
12XTVR2-CT	T3
15XTVR1-CT	T2D
15XTVR2-CT	T3
20XTVR1-CT	215 (T2D)
20XTVR2-CT @ Max. 277V	215°C (T2D)

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20XTVR2-CT @ Max. 240V	200°C (T3)

Parallel self-regulating heating cable for heating of pipe or vessel tracing, LBTV2-CT; 5W/ft @10ºC (50°F); max continuous operating temperature 65ºC (150°F); max intermittent exposure temperature 85°C (185°F), T-Code Rating T6; 208-277V ac; min recommended installation temperature (-60°C) (-76°F); usage -WS; the maximum steady state current is 56A.

Variable Power Limiting cables for heating of pipe or vessel tracing, **VPL*-CT where ** indicates watts per foot (min. 15, max 15)@10°C (50°F) and * indicates 120-480V ac; max continuous exposure temperature 260ºC (500°F), T-Code Rating T2; min. recommended installation temperature (-60°C) (-76°F); usage -WS; the maximum steady state current is 32A.

Parallel self-regulating heating cables for heating of pipe or vessel tracing, **HTV*-CT where ** indicates watts per foot (min. 3, max 28) @10°C (50°F) and * indicates 1 for 90-130V ac products and 2 for 190-277V ac; max continuous operating temperature 205°C (401°F); max intermittent exposure temperature 260°C (500°F), T-Code Rating T* (refer to the table below); min recommended installation temperature -60°C (-76°F); usage -WS; the maximum steady state current is 32A.

Model	T –Code (Varied by design per system approach stabilized condition)
3HTV1-CT, 3HTV2-CT	T6 ~T3A
5HTV1-CT, 5HTV2-CT 8HTV1-CT, 8HTV2-CT 10HTV1-CT, 10HTV2-CT 12HTV1-CT, 12HTV2-CT 15HTV1-CT, 15HTV2-CT	T6~ T3
20HTV1-CT, 20HTV2-CT	T6~ 215°C (T2D)
28HTV2-CT	T6~ 240°C (T2B)

Conditions of Acceptability

Please refer to the following IECEx certificates for Conditions of Acceptability detailed in:

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IECEx Certificate Number	IECEx_BAS_20.0012X, Issue No: 2 XTV Tmin=-60°C IECEx_BAS_20.0008X, Issue No: 2 VPL Tmin=-60°C IECEx_BAS_20.0013X, Issue No: 2 QTVR Tmin=-60°C IECEx_BAS_20.0011X, Issue No: 3 BTV Tmin=-60°C IECEx PTB 21.0007X Issue No.:3 HTV Tmin=-60°C

Refer to the Instruction Manual for the conditions of acceptability which are stated explicitly therein.

Class I Division 2 Group A, B, C, D; Class II / III Division 2 Group E, F, G

Ex 60079-30-1 IIC T* Gb

Ex 60079-30-1 IIIC T* Db

Class I Zone 1 AEx eb IIC T* Gb

Zone 21 AEx tb IIIC T* Db

Integral Components:

E-20 and E-40 heat shrink end seal kits, to be used with the above heaters as shown below (highlighted with an 'X'):

Heater	Integral components	
	E-20	E-40
XTV IECEx_BAS_20.0012X, Issue No: 2	-	X (Usage code -WS)
VPL IECEx_BAS_20.0008X, Issue No: 2	-	X (Usage code -WS)
QTVR IECEx_BAS_20.0013X, Issue No: 2	X (Usage code -WS)	-
BTV IECEx_BAS_20.0011X, Issue No: 3	X (Usage code -WS)	

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HTV IECEx PTB 21.0007X Issue No:1	-	X (Usage code -WS)

Conditions of Acceptability

1. Min. installation temperature for E-20 is -20°C, for E-40 is -60°C

2. Limiting temperatures for E-20 is 110°C, for E-40 is 260°C

3. Ambient temperatures for both E-20 and E-40 is -60°C to +56°C

Termination Kits:

Ex eb IIC Gb; Class I Zone 1 AEx eb IIC Gb; IP66

E-100-E and E-100-A End Seal Kits and E-100-LBTV2 End Seal Kit, JBM-100-LBTV2 Power Connection Kit *C75-100-A, C25-100 and C25-21 Connection Kits.

Note: *C75-100-A is to be used for ambient temperature range is -55°C to 56°C. Maximum service temperature for Grommet is 152.4°C and Gland body is 93.8°C. When the C75-100-A connection kit is used, it shall be mounted to an enclosure in accordance with the manufacturer's instructions.

Ex eb mb IIC Gb; Class I Zone 1 AEx eb mb IIC Gb; IP66

E-100-L-A, E-100-L-E Lighted End Seal Kits.

Ex eb mb IIC Gb; Class I Zone 1 Aex eb mb IIC Gb

JBL-100-G and JBL-100-R Light Modules.

-Rated voltage: 100 – 277 V AC

-Rated current: 17 mA

Conditions of Acceptability (for JBL-100-G and JBL-100-R Light Modules):

1. The supply circuit shall be protected by a fuse capable of withstanding a prospective short-circuit current of

1500. A.

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2. These Type Light Modules are limited to a service temperature range of -40°C to +90°C.

3. These Light Modules shall be installed in such a manner that they are not exposed to light.

Ex eb mb IIC Gb; Class I Zone 1 Aex eb mb IIC Gb

Ex mb tb IIIC Db; Zone 21 Aex mb tb IIIC Db

$-55^{o}C < T_{amb} < 56^{o}C$ applied for standard version

$-40^{o}C < T_{amb} < 40^{o}C$ applied for version with pilot lamp

Type JBx-100-xx-xx and T-100 Power Connection Kits

Nomenclature

JB	x	-	100	-	xx	-	xx
	1		2		3		4

1	S	JBS – For connection of one heating cable
	M	JBM – For connection up to three heating cables
	U	JBU – Universal
2	100	Above installation
3	A	Version with unthreaded holes
	L	Model with optional Light module (‘mb’ only applicable to this lighted model)
	E	Version with threaded metric holes
	P	Model with optional off shore plate
	D	Model with optional drain plug
	STB	Model with certified Phoenix or Weidmuller screw type terminals
4	E	Version with threaded metric holes

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A Version with unthreaded holes

P Model with optional off shore plate

(Refer to IECEx PTB 20.0014U Annex retained in Supporting Documents folder for this project for Description, Rating and Technical data of the JBM, JBS, JBU and T-100 Power connection Kits)

Conditions of Acceptability:

1. Alternative strip heaters must not be used, unless the manufacturer's approval has been obtained.
2. For certified cable gland used for entries into enclosure, clamping (strain relief) by filling compound is not an acceptable method in Canada.
3. The temperature accepted as a maximum for the surface to be heated (tube temperature) shall be determined on the basis of the specific performance category, the maximum admissible operating temperature of the parallel strip heaters, the voltage rating and the maximum admissible current carrying capacity.
4. Applications for which heat-resistant incoming cables include cable glands made from metal must be used, they must be specified by the manufacturer and the installer/user must comply with.
5. Restrictions regarding the use of type JBS-100-L-xx, JBM-100-L-xx, JBU-100-L-xx, JBS-100-L-xx must be Specified by the manufacturer and the installer/user must comply with.
6. The parallel strip heaters, type VPL, must be installed so that their cold ends start outside the Terminal box.
7. The JBU-100-xx-xx with voltage infeed is installed, an adequate heat-resistant feeder and screwed metal glands, including gasket, must be used at $40^{o}C < Ta < 56^{o}C$. For the screwed metal glands, including gasket, a separate IECEx certificate must be issued and they must be verified by Chemelex.
8. For heating cables, certified Raychem glands of type C25-100-Metal must be used at $40^{o}C < Ta < 56^{o}C$.
9. The version of the connection box with a drain plug must be suspended on the pipe to ensure proper function.

Ex eb IIC Gb; Class I Zone 1 Aex eb IIC Gb

Ex tb IIIC Db ; Zone 21 Aex tb IIIC Db

$-55^{o}C < T_{amb} < 56^{o}C$

C-150-E, S-150, and E-150 Kits

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Nomenclature

C – 150 – E

a b c

a – Function: C for Power Connection Kit

S for Low Profile Splice Kit

E for Low Profile End Seal Kit

b - Type: 150 for RAYCHEM Low Profile termination components

c – Option: For parallel Trace Heaters option for C-150 only

Conditions of Acceptability:

1. C-150-E, S-150, and E-150 Kits are suitable for use with following Raychem self-regulating parallel Trace Heaters BTV, QTVR, XTV.
2. Rated voltage is 277Vac, maximum nominal current rating of over-current protection is 40 A.

Ex 60079-30-1 IIC T* Gb

Ex 60079-30-1 IIIC T* Db

Class I Zone 1 AEx eb IIC T* Gb

Zone 21 AEx tb IIIC T* Db

Integral Components:

S-20 and S-40 heat shrink splice kits, to be used with the above heaters as shown below (highlighted with an 'X'):

Heater	Integral components	
	S-20	S-40

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XTV IECEx_BAS_20.0012X, Issue No: 2	-	X (Usage code -WS)
VPL IECEx_BAS_20.0008X, Issue No: 2	-	X (Usage code -WS)
QTVR IECEx_BAS_20.0013X, Issue No: 2	X (Usage code -WS)	-
BTV IECEx_BAS_20.0011X, Issue No: 3	X (Usage code -WS)	
HTV IECEx PTB 21.0007X Issue No.:1	-	X (Usage code -WS)

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Conditions of Acceptability

1. Min. installation temperature for S-20 is -20°C, for S-40 is -60°C

2. Limiting temperatures for S-20 is 110°C, for S-40 is 260°C

3. Ambient temperatures for the S-20 is -20°C to +56°C and S-40 is -60°C to +56°C

APPLICABLE REQUIREMENTS

Standards Used	Description
CSA C22.2 No. 60079-0:19 - Fourth Edition	Explosive atmospheres - Part 0: Equipment - General requirements
CAN/CSA C22.2 No. 60079-7:16 - Second Edition	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

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Standards Used	Description
CAN/CSA-C22.2 No. 60079-18:16 - Second Edition	Explosive atmospheres - Part 18: Equipment protection by encapsulation "m"
CSA C22.2 No. 60079-30-1:17 - Second Edition	Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements
CSA C22.2 No. 60079-31:15 - Second Edition	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
CSA C22.2 No. 130-16 + Upd.1 + Upd.2	Requirements for electrical resistance trace heating and heating device sets
ANSI/UL 60079-0-2019 Seventh Edition	UL Standard for Safety Explosive atmospheres – Part 0: Equipment – General requirements
UL 60079-7:2017 - Fifth Edition	Explosive Atmospheres - Part 7: Equipment Protection by Increased Safety 'e'
UL 60079-18 - Fourth Edition - Reprint with Revisions Through and Including February 7, 2019	Explosive atmospheres – Part 18: Equipment protection by encapsulation “m”
ANSI/UL 60079-30-1 (First Edition)	UL Standard for Safety Explosive Atmospheres – Part 30-1: Electrical Resistance Trace Heating – General and Testing Requirements
UL 60079-31:2015 - Second Edition	Standard for Safety Explosive Atmospheres – Part 31: Equipment Dust Ignition Protection by Enclosure “t”

Markings

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Heating Cable: The following legibly and durably ink printed on the outer jacket of the heating cable

The original carton, container, spool, or reel in or on which the heating device or heating device set leaves the factory shall be clearly marked with the following information:

a) the manufacturer’s name or CSA Master Contract Number “161241”, adjacent to the CSA Mark in lieu manufacturer’s name;
b) the catalogue number, reference number, or model; As specified in the PRODUCTS section, above;
c) the month and year of manufacture, date code, applicable serial number, or equivalent;
d) the words “Refer to installation instructions”, or equivalent wording, and any applicable notices, warnings, and directions to the installer;

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e) the warning “CAUTION: A ground-fault circuit-interrupter shall be used with this heating device” and “ATTENTION : Ce produit doit être utilisé avec un disjoncteur différentiel de fuite à la terre”, unless exempted by the *Canadian Electrical Code, Part I*;
f) the maximum voltage for which the heating device or heating device set is intended; As specified in the PRODUCTS section, above
g) the maximum rated current or, for factory-assembled heating device sets, the total wattage;
i) the rated output of the device expressed in total watts, watts per unit length, or watts per unit area at a reference temperature, if applicable;
j) the words, “trace heater”, “heating cable”, “heating cable set”, “surface heater”, “surface heating device”, “surface heater unit”, or “surface heating device set”, and usage marking and usage as shown in Table 1;
k) the manufacturer’s declared minimum installation temperature;
m) cCSAus Monogram, along with the year of Certification and Certificate/Project number (ie. CSA02CA1333271). The suffix ‘X’ follows the Certificate/Project number where applicable.
n) The symbol provided for the “type of protection used” for trace heating shall be “60079-30-1”, for example, typical Ex marking strings would be “Ex 60079-30-1 IIC T4 Gb” and “Ex 60079-30-1 IIIC T135°C Db”, which does not preclude the use of additional types of protection appropriate for the components intended to be supplied or recommended for use with the trace heaters;
o) For marking trace heaters for use with the Division method of area classification, trace heaters shall be clearly and permanently surface marked to indicate Class, Division, Group(s), and Temperature Class.

Components/Kits: The following legibly and durably marked on a Certified Adhesive Label or Metal Nameplate:

The cartons or containers and the instructions of all connection and termination kits shall be clearly marked with the following information:
a) the manufacturer’s name or CSA Master Contract Number “161241”, adjacent to the CSA Mark in lieu of manufacturer’s name;
b) the catalogue number, reference number, or model; As specified in the PRODUCTS section, above;
c) intended use (i.e., FOR USE WITH (Manufacturer) MODEL (type, series, or designation) TRACE HEATER/SURFACE HEATER DEVICE ONLY);
d) the words “SEE INSTALLATION INSTRUCTIONS” and any applicable notices, warnings, or directions to the user;
e) the maximum permissible steady-state current;
f) the rated voltage;
g) the warning “CAUTION: For industrial use only” and “ATTENTION: pour usage industriel seulement” on series heating device connection kits only;
h) maximum continuous exposure temperature;
i) when required by Clause 4.6.1, the words “Temperature at the point of connection to branch circuit conductors may exceed 60 °C”;
j) cCSAus** Monogram, along with the year of Certification and Certificate/Project number (ie. CSA02CA1333271); the suffix ‘X’* U follows the Certificate/Project number where applicable;
Note: * For the JBL-100 module the suffix ‘X’ shall be replaced with “U”.
k) applicable environmental requirements, such as IP (ingress protection) ratings, and area use requirements.

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Certificate: 1333271 **Master Contract**: 161241

Project: 80288724 **Date Issued**: 2026-05-07

Notes:

Products certified under Class(es) C287801, C287881 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca

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