



Certificate of Compliance

Certificate: 2519238

Master Contract: 187981

Project: 2519238

Date Issued: November 2, 2012

Issued to: **Beghelli North America**
3250 Corporate Way, Unit B
Miramar, FL 33025
USA
Attention: Bill Dixon

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.



Scott Wallace

Issued by: Scott Wallace

PRODUCTS

- CLASS 3428 03** - FIXTURES AND FITTINGS - For Hazardous Locations
- CLASS 3428 83** - FIXTURES AND FITTINGS - For Hazardous Locations-Certified to U.S. Standards

Class I, Division 2, Groups ABCD

Acciaio series luminaires, models HZ920, HZ940, HZ950 and HZ960; Wet location; rated 120-480V, 60Hz, 210 Watts Max. Temperature code T5. Ambient temperature range -20 to +40°C. IP66

Model Code:

HZ920abcde	HZ940abcde	HZ950abcde	HZ960abcde
a = Length: (2=2ft or 4=4ft)	a = Length: (4=4ft)	a = Length: (2=2ft)	a = Length: (2=2ft)
b = Operation:	b = Operation:	b = Operation:	b = Operation:
HT =AC only	HT =AC only	HT =AC only	HT =AC only
c = Lamps:	c = Lamps:	c = Lamps:	c = Lamps:
217WT8 (2x17W 2ft)	432WT8 (4x32W)	236WCF (2x36W)	236WCF (2x36W)



**CSA
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214WT5 (2x14W 2ft)	428WT5 (4x28W)	255WCF (2x55W)	255WCF (2x55W)
224WT5HO (2x24W 2ft)	454WT5HO (4x54W)	436WCF (4x36W)	436WCF (4x36W)
232WT8 (2x32W 4ft)		455WCF (4x55W)	455WCF (4x55W)
228WT5 (2x28W 4ft)		A 4 lamp fixture is two 2 lamp fixtures mounted on one bracket (HZ950 Duo)	
254WT5HO (2x54W 4ft)			
d = Input: 120/277V, 347V or 480V	d = Input: 120/277V, 347V or 480V	d = Input: 120/277V, 347V or 480V	d = Input: 120/277V, 347V or 480V
e = Mounting:	e = Mounting:	e = Mounting:	e = Mounting:
None =std. surface mount	None =std. surface mount	None =std surface mount	None =std surface mount
CH =chain mount	CH =chain mount	PK =pendant mount	PK =pendant mount
AC =aviation cable	AC =aviation cable	CH =chain mount	CH =chain mount
		AC =aviation cable	AC =aviation cable

Notes:

- HZ920 & HZ940, 480Vac only available for the 2x54WT5HO or 4x54W T5HO options
- HZ950, HZ950Duo & HZ960 480Vac only available for the 2x55WCF or 4x55WCF options.
- Any optional markings, such as "Zone" marking on Class/Division equipment are detailed in the markings section only.
- Wiring to or from this device, which enters or leaves the luminaire, must utilize wiring methods suitable for Class I, Division 2 and Class I, Zone 2 Hazardous Locations, as appropriate for the installation.

APPLICABLE REQUIREMENTS

CAN/CSA C22.2 No. 0-10	General Requirements - Canadian Electrical Code, Part II
CSA C22.2 No. 250.0-08	Luminaires
CSA C22.2 No. 137-M1981	Electric Luminaires for Use in Hazardous Locations
UL 1598, 3rd Ed., Dated September 17, 2008	Luminaires
UL 844, 13th Ed., Dated June 29, 2012	Luminaires for Use in Hazardous (Classified) Locations



Supplement to Certificate of Compliance

Certificate: 2519238

Master Contract: 187981

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
2519238	November 2, 2012	Original Certification - Acciaio HZ900 series Luminaires For Use in Hazardous Locations



**CSA
Group**

Descriptive Report and Test Results

MASTER CONTRACT: 187981

REPORT: 2519238

PROJECT: 2519238

Edition 1: November 2, 2012; Project 2519238 – Cleveland
Issued by Scott Wallace; Reviewed by Pete Schimmoeller

Contents: Certificate of Compliance - Page 1 to 2
Supplement to Certificate of Compliance – Page 1
Description and Tests – Pages 1 to 17
Descriptive Documents – *Engineering files only*

PRODUCTS

CLASS 3428 03 FIXTURES AND FITTINGS - For Hazardous Locations

CLASS 3428 83 FIXTURES AND FITTINGS - For Hazardous Locations-Certified to U.S. Standards

Class I, Division 2, Groups ABCD

Acciaio series luminaires, models HZ920, HZ940, HZ950 and HZ960; Wet location; rated 120-480V, 60Hz, 210 Watts Max. Temperature code T5. Ambient temperature range -20 to +40°C. IP66

Model Code:

HZ920abcde	HZ940abcde	HZ950abcde	HZ960abcde
a = Length: 2=2ft or 4=4ft	a = Length: 4=4ft	a = Length: 2=2ft	a = Length: 2=2ft
b = Operation: HT=AC only	b = Operation: HT=AC only	b = Operation: HT=AC only	b = Operation: HT=AC only
c = Lamps: 217WT8 (2x17W 2ft) 214WT5 (2x14W 2ft) 224WT5HO (2x24W 2ft) 232WT8 (2x32W 4ft) 228WT5 (2x28W 4ft) 254WT5HO (2x54W 4ft)	c = Lamps: 432WT8 (4x32W) 428WT5 (4x28W) 454WT5HO (4x54W)	c = Lamps: 236WCF (2x36W) 255WCF (2x55W) 436WCF (4x36W) 455WCF (4x55W) A 4 lamp fixture is two 2 lamp fixtures mounted on one bracket (HZ950 Duo)	c = Lamps: 236WCF (2x36W) 255WCF (2x55W) 436WCF (4x36W) 455WCF (4x55W)
d = Input: 120/277V 347V 480V	d = Input: 120/277V 347V 480V	d = Input: 120/277V 347V 480V	d = Input: 120/277V 347V 480V
e = Mounting: None=std surface mount CH=chain mount AC=aviation cable	e = Mounting: None=std surface mount CH=chain mount AC=aviation cable	e = Mounting: None=std surface mount PK=pendant mount CH=chain mount AC=aviation cable	e = Mounting: None=std surface mount PK=pendant mount CH=chain mount AC=aviation cable

Notes:

1. HZ920 & HZ940, 480Vac only available for the 2x54WT5HO or 4x54W T5HO options
2. HZ950, HZ950Duo & HZ960 480Vac only available for the 2x55WCF or 4x55WCF options.

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3. Any optional markings, such as "Zone" marking on Class/Division equipment are detailed in the markings section only.
4. Wiring to or from this device, which enters or leaves the luminaire, must utilize wiring methods suitable for Class I, Division 2 and Class I, Zone 2 Hazardous Locations, as appropriate for the installation.

APPLICABLE REQUIREMENTS

CAN/CSA C22.2 No. 0-10	General Requirements - Canadian Electrical Code, Part II
CSA C22.2 No. 250.0-08	Luminaires
CSA C22.2 No. 137-M1981	Electric Luminaires for Use in Hazardous Locations
UL 1598, 3 rd Ed., Dated September 17, 2008	Luminaires
UL 844, 13 th Ed., Dated June 29, 2012	Luminaires for Use in Hazardous (Classified) Locations

MARKINGS

Product markings shall be in accordance with the related standards. In addition, it shall be the responsibility of the manufacturer to provide additional markings on the product to comply with the requirements of the local regulatory authorities. For example, in Canada, any caution and warning markings must be provided in French and English.

Each Model is permanently and legibly marked with the markings specified below. A permanent marking shall be molded, die-stamped, paint-stenciled, stamped or etched on metal that is permanently secured, embossed, or indelibly stamped lettering on CSA Certified (Class 7921-01) and UL Recognized (PGDQ2) adhesive label. When CSA/UL adhesive label is used, the label shall be suitable for the surface, normal operating conditions, and environment to which it is subjected and the color of the text shall be contrasting with the color of the background. When molded, die-stamped, or embossed lettering is used characters shall be minimum 0.25 mm in depth.

Marking	Models	Format/Location
The CSA Mark with or without "C" and "US" indicators as shown on the Certificate of Conformity.	All	S16-L2
Manufacturer's name or CSA Master Contract Number "187981", adjacent to the CSA Mark in lieu of manufacturer's name.	All	S16-L2
Model number: As specified in the PRODUCTS section above.	All	S16-L2
Manufacturing date in MMYYYY format, or serial number, traceable to month of manufacture.	All	S16-L2
Complete Electrical ratings: As specified in the PRODUCTS section above.	All	S24-L3
Ambient temperature rating: As specified in the PRODUCTS section above.	All	S24-L2
Hazardous Location designation: As specified in the PRODUCTS section above (may be abbreviated).	All	S24-L1
Temperature code: As specified in the PRODUCTS section above, T5 or T6 optional	All	S32-L2
Type and Lamp Wattage	All	S24-L1
Factory Identification, if more than one location	All	S16-L2
"WARNING – EXPLOSION HAZARD - Substitution of components may impair suitability for Class I, Division 2."	All	S32-L3
"WARNING – EXPLOSION HAZARD – Do not connect while circuit is live unless area is known to be nonhazardous."	All	S32-L3

“CAUTION: TO REDUCE THE RISK OF FIRE, USE MAX ___ W, TYPE ___”	All	S24-L1
“CAUTION – RISK OF FIRE” AND “NOT FOR CONNECTION TO 208, 240 OR 600V IN CANADA”	All	S24-L3
“BALLAST DISCONNECT”	All	S24-L6
“ SUITABLE FOR WET LOCATIONS”	All	S24-L2
“ATTENTION- BRANCH-CIRCUIT CONDUCTORS MUST BE RATED 90°C. CONSULT A QUALIFIED ELECTRICIAN BEFORE INSTALLING” where applicable.	All	S24-L3
THIS LUMINAIRE IS PROVIDED WITH A FACTORY-INSTALLED EMERGENCY LIGHTING BATTERY PACK	See Note 1	S24-L2

Table 1: Product Markings

Notes:

1. When installed with Emergency Battery Pack. See also the additional marking for Emergency lighting when equipped.
2. In addition to the required marking above, markings clarifying the suitable area classification (as per the CEC, Part I and the NEC) may also be included, such as: Class I, Zone 2, IIC; T5 and

Form and Location Designations

Location designation	Description	Label exposed to a dry/damp environment	Label exposed to a wet environment
L1	Visible during relamping, and after installation	Type P	Type P
L2	Visible during installation	Type N	Type P
L3	Visible during installation and inspection of wire connections, located near the supply connections	Type N	Type P
L4	On the smallest unit package or carton	Type T	Type T
L5	On an instruction sheet or tag	Type T	Type T
L6	Visible during component replacement	Type P	Type P

Type P designates a permanent label or nameplate that is intended to remain in the applied position for the lifetime of the luminaire under conditions of normal use. It provides information required for user maintenance over the expected life of the product. It is made of metal, plastic, or other material that complies with Clause 20.1.7.

Type N designates a non-permanent label or nameplate that is intended to remain in place only for the purpose of installation. It shows the certification mark, manufacturer's identification, and product identification. It is made of paper with an adhesive backing.

Type T designates a temporary label, instruction sheet, or tag that is not required after installation. It provides installation instructions, and information not required after installation. It is made of printed matter with or without adhesive and/or attachment, and is intended to be included with, or attached to, the product.

Table 2: Form and Location Designations

Size designation	Letter Height		Font size (points)	Font typeface upper case
S16	1.6mm	0.062"	6	Not specified
S24	2.4mm	0.094"	10	Univers bold Arial bold Helvetica bold Zurich BT bold
S32	3.2mm	0.125"	12	Not specified
S48	4.8mm	0.188"	19	Univers bold Arial bold Helvetica bold Zurich BT bold

Table 3: Format minimum size designation for marking height and typeface

An installation manual or data sheet shall be supplied with each unit, containing the following minimum marking information:

- Manufacturers name and address
- Complete Electrical ratings.
- Specification for ambient temperature rating.
- Mounting and installation instructions, including dimensions, and the following words, or equivalent:
 - Wiring to or from this device, which enters or leaves the luminaire, must utilize wiring methods suitable for Class I, Division 2 Hazardous Locations, as appropriate for the installation.
- The following words, or suitable equivalent:
 - This equipment is suitable for installation in Class I, Division 2, Group A, B, C, D hazardous locations or nonhazardous locations only.
 - WARNING - Explosion Hazard. Do not connect or disconnect this equipment unless power has been removed or the area is known to be nonhazardous.
 - WARNING - Explosion Hazard. Substitution of components may impair suitability for Class I, Division 2.
- Wiring instruction that specify the proper method of connecting the grounding means and maintaining polarity shall be included with the luminaire in a manner that will require the installer to handle the instructions during installation, or the luminaire carton shall be marked to require installation by a qualified electrician.

EMERGENCY LIGHTING EQUIPMENT MARKINGS

The wording "THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE INSTALLATION CODE BY A PERSON FAMILIAR WITH CONSTRUCTION AND OPERATION OF THE PRODUCT AND THE HAZARDS INVOLVED" shall be min. 2.4 mm high and on the smallest unit package or carton.

In addition to marking required as above, the subject emergency unit equipment shall be plainly marked in a permanent manner, in a place where the details will be readily visible after installation, with the following:

- Rated output voltage (i.e. the nominal voltage of the battery). "Output: Operates the internal lamps for 90 minutes"
- The rated output of the equipment in watts.
- The time base for the rating.

Unit equipment shall be provided with a list of the lamps that are suitable for use with it, in a form that includes at least the following:

- Their catalogue numbers or similar identifying designations.
- For each of the lamps listed, a watt rating, so that for any of the emergency periods for which the unit equipment is rated, the user can readily select a combination of lamps that will not require more power than permitted for that period.

The unit shall be marked with the following, or equivalent: "REPLACE EMERGENCY BALLAST PACK EVERY 10 YEARS COMMENCING _____".

The ballast unit shall be permanently marked with the month and year of its replacement date.

Instructions necessary for the intended installation, operation, and maintenance of equipment shall be provided and shall be permanently attached to the equipment.

The emergency ballast pack shall be permanently marked with the model number adjacent to the emergency ballast pack identifying the replacement type.

Emergency Lighting Fixture having more than one power source that might represent a risk of electric shock shall be marked, where visible after installation with the following:

"CAUTION - This Unit Has More Than One Power Supply Connection Point. To Reduce The Risk Of Electric Shock, Disconnect Both The Branch Circuit Breakers or Fuses And Emergency Power Supplies Before Servicing"

A fluorescent fixture inverter/charger pack that is limited to specific ballasts shall be provided with a marking that specifies the type and wattage of lamps and ballasts to which the unit is intended to be connected.

"CAUTION - This is a sealed unit. Integral battery is not replaceable. Replace entire unit when necessary", and "REPLACE EMERGENCY BALLAST PACK ONLY WITH BODINE LP600"

The word "CAUTION" shall be permanent and not less than 3.2 mm high

When equipment with polymeric enclosures is intended for connection only to a non-rigid wiring system, the installation instructions shall state, adjacent to the respective diagrams shown below that the equipment must be installed with such a wiring system. "No rigid Conduit" or "flexible conduit only".

ALTERATIONS

N/A

FACTORY TESTS

Dielectric Voltage-Withstand

(Routine on production line: 100% production test)

The equipment at the conclusion of manufacture, before shipment, shall withstand the application of 2 time the rated voltage plus 1000Vac (40-70 Hz) for a period of 1 sec. alternately, where the damage of the solid state components may be caused by AC potential, the DC test potential of 1.414 time the test potential of that for Vac may be applied for 1 sec.

No dielectric breakdown shall be between:

- a. Primary wiring and accessible dead metal parts that may become energized.
- b. Primary wiring and accessible LOW-voltage (42.4 Volts peak or less) metal parts, including terminals (uninsulated live parts in the secondary circuit)

The factory test may be made at existing room temperature. The test shall be performed on a fully assembled Luminaire. Isolated non-current-carrying metal parts or decorative parts not likely to become energized need not be in place.

WARNING: The factory test described herein may present a hazard of injury to personnel and/or property and should only be performed by persons knowledgeable of such hazards and under conditions designed to minimize the possibility of injury.

Grounding Continuity Test

(Minimum one per quarter per design)

A fixture design provided with a grounding means is tested for grounding continuity between grounding means and the accessible dead metal of the fixture that is required to be grounded. Any indicating instrument may be used to determine the resistance between the grounding means and the accessible dead metal of the fixture. The results are acceptable if the resistance does not exceed 0.10 ohm.

Ground Screw Torque

(Minimum once per quarter per production run)

One sample of each luminaire design provided with a screw for securing the branch circuit equipment grounding conductor shall be tested with a 12 AWG solid-copper, insulated conductor stripped to a length of 2.5 cm (1 inch) minimum. The wire shall be wrapped around the screw under the screw head so that it makes a minimum 180° turn. The ground screw is tightened with a calibrated torque screwdriver to 1.6 N-m (14 lb-in).

There shall not be damage to the head of the ground screw which would prevent the 1.6 N-m (14 lb-in) of tightening torque to be achieved or stripping of the ground screw assembly.

Factory Test Records

Test records shall be retained for a period of at least 12 months, and shall include test quantity, test dates, catalogue or model numbers, test results, and disposition of any non-complying products.

SPECIAL INSTRUCTIONS FOR FIELD SERVICES

1. Component descriptions marked with either the “(INT)” or “(INT*)” identifiers may be substituted with other components providing the requirements specified under the notes in the “Description” are complied with.
2. This report contains reference to certain construction and engineering documents that have been deemed critical to ensuring continued compliance with applicable construction and performance requirements. A list of these documents, with drawing numbers and the appropriate revision levels is summarized in this report. Documents detailed herein are subject to inspection by CSA International personnel and shall be made available in the manufacturing location upon request. Failure to produce these documents in a timely manner constitutes noncompliance and is subject to the actions outlined in the CSA Product Service Agreement.

COMPONENT SPECIAL PICKUP

1. Component descriptions marked with the identifier “(CT)” are subject to annual pickup and Conformity Testing.

DESCRIPTION

Notes:

1. Component Substitution

- a) Critical components (those identified by mfr name, cat no), which are NOT identified with either "INT" or "INT*" are not eligible for substitution without evaluation and report updating.
- b) The term "INT" means a "Certified" and/or "Listed" (or a "Recognized" and/or "Accepted") component may be replaced by one "Certified" and/or "Listed" by an organization (accredited by OSHA/SCC), for the same application; providing the applicable country identifiers are included and requirements in item "d" below are complied with.
- c) The term "INT*" means a "Recognized" and/or "Accepted" component may be replaced by one "Recognized" and/or "Accepted" by an organization (accredited by OSHA/SCC), for the same application, providing the applicable country identifiers are included, the component is **also** CSA Certified, the requirements in item "d" below are complied with and any "conditions of suitability" for the component (as recorded in this descriptive report) are complied with.
- d) Components which have been substituted, must be of an equivalent rating, configuration (size, orientation, mounting) and the applicable minimum creepage and clearance distances are to be maintained from live parts to bonded metal parts and secondary parts.
- e) Substitution of a "Certified" and/or "Listed" component with a component that is "Recognized" or "Accepted" is not permitted without evaluation and report updating.

General: The construction of the HZ900 series luminaires are the same as the construction as the BX900 series luminaires in the ordinary locations file 1248370. The only difference is the housing was changed from aluminum to either steel or stainless steel.

1. **Model HZ920 & HZ940**

1.1. Housing – Painted steel or stainless steel, minimum 0.8mm thick.

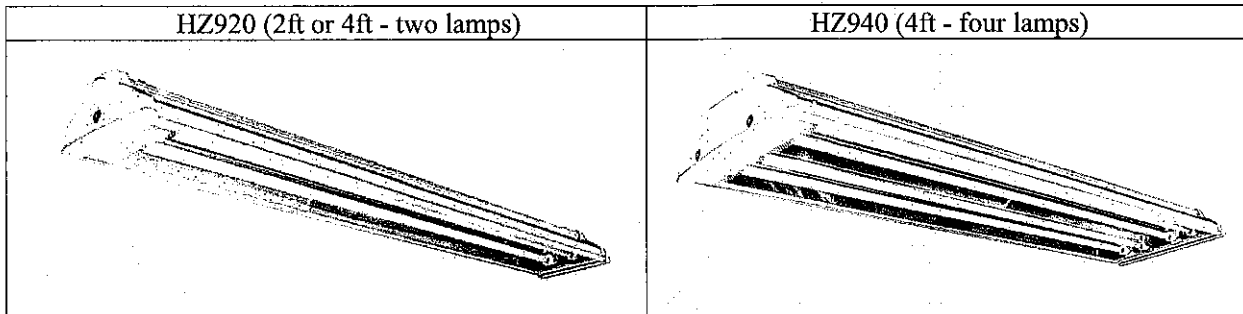
Overall approximate sizes:

2 ft 2 lamp version: 705mm long by 170mm wide by 89mm high

4 ft 2 lamp version: 1315mm long by 170mm wide by 89mm high

4 ft 4 lamp version: 1315mm long by 315mm wide by 89mm high

Provided with welded brackets for securement of Housing Bracket and Lamp/Ballast Tray. Provided with integral slot at top on both sides for securement of Lens, overlaps Lens by 6 mm. See pictures below for reference:



1.2. End Caps: Two provided. Composed of the following

1.2.1. Housing – Die Cast Aluminum, min 0.5mm thick. 2 lamp version: overall approx. 168 mm by 89 mm by 20 mm deep. 4 lamp version: overall approx. 315 mm by 89 mm by 20 mm deep. One End

Cap provided with one 21 mm hole for Strain Relief Bushing, two 6 mm holes for securement to Housing Bracket with two screws. Other End Cap only provided with two 6 mm holes for securement to Housing Bracket with two screws.

1.2.2. Connector Mount – Up to two provided. Steel, 0.8mm thick. Overall approx. 58mm by 26mm by 22mm. Provided with cutout for Connectors.

1.2.3. Connector – CSA (LR19980)/UL (E29179). Manufactured by Molex Incorporated, model 42475. Rated V-0, 600V, 8A max. Secures to Connector Mount with integral tabs. Mates with Lamp/Ballast Tray Connector.

1.2.4. Gasket – Manufactured by Nevicolor P/N PA6 (trade name Nevimid), rated for a maximum service temperature of 110°C (based on other manufactures of PA6), UL94 HB and a softening point of 215°C.

1.3. Lens – Tempered Glass, 3 mm thick.

Overall approximate sizes:

2 ft 2 lamp version: 680mm long by 155mm wide

4 ft 2 lamp version: 1290mm long by 155mm wide

4 ft 4 lamp version: 1290mm long by 300mm wide

Len is secured by physical fit to Housing with Lens Gasket.

1.4. Lens Gasket – Silicone Rubber, manufactured by Shanghai Mingsheng Rubber factory P/N 58W. Approx. 1 mm thick. Wraps around outer edge of Lens on two sides.

1.5. Strain Relief Bushing – CSA (93876C) and UL (File E51579). Manufactured by Heyco Products Inc. P/N M3217 (gray) or M3216 (black). Rated “water tight” IP68. Mechanically secured to Enclosure by threaded nipple and nut.

1.6. Supply Cord (INT) – CSA/UL. Min 18 AWG, type SEOW or equivalent (must be of extra hard usage type), rated 600V, 105°C, FT1, FT2, VW1.

1.7. Housing Bracket – Steel, min 1.8mm thick. 4 lamp version: overall approx. 285mm long by 10mm by 20mm, 2 lamp version: 142mm long by 10mm by 20mm. Provided with integral clips for securement to Enclosure by physical fit.

1.8. Lamp/Ballast Tray – composed of the following:

1.8.1. Ballast Bracket – Steel, min 0.6mm thick. 2ft version: overall approx. 530mm long, 55mm wide, ‘U’ shaped. 4ft version: overall approx. 1140mm long, 55mm wide, ‘U’ shaped. Provided with up to two welded on Steel brackets, overall approx. 28mm by 95mm by 9mm for securement of the Reflector with screws.

1.8.2. Reflector – Aluminum, min 0.3 mm thick. 2ft version: overall approx. 145 mm by 620 mm by 35 mm. 4ft version: overall approx. 145 mm by 1232 mm by 35 mm. Secures to Ballast Bracket with up to four screws.

1.8.3. Lampholder Bracket – Steel, min 0.7 mm thick. Two provided, overall approx. 96 mm by 65 mm by 17 mm deep. Provided with cut-out for snap-fit lampholders appropriate for size.

- 1.8.4. Lampholders – cUL_{us} listed E26798 (OKCT & OKCT7). Four provided. Recessed Miniature bi-pin type, rated 660W, 600V, 90°C, “A.A.G. Stucchi”, Cat No 1232/S (Type G13). Snaps into Lampholder Bracket. Lamps locked in place by 90° twist lock.
- 1.8.5. Connector – CSA (LR19980)/UL (E29179). Manufactured by Molex Incorporated, model 42474. Rated V-0, 600V, 8A max. Secures to Lampholder Bracket with integral tabs. Mates with End Cap Connector.
- 1.8.6. Internal Wiring – CSA/UL (INT). Type AWM, solid 18 AWG, rated 600V, 75°C. Provided between Ballast input and Connectors, and Ballast output and Lampholders.
- 1.8.7. Ballast:
- 1.8.7.1. Rated 120V/277V, Programmed Rapid Start, Class P, Type 1 outdoor, inherently protected. Secured to Ballast Bracket with two screws and nuts. CSA certified and/or UL listed– Manufactured by Osram Sylvania Inc., models: QTP2x32T8/UNV ISN-SC (49943), QTP2x28T5/UNV PSN (49180), QHE2x39-24T5HO/UNV PSN (51478) and QTP2x54T5HO/UNV PSN HT (49135).
- 1.8.7.2. Rated 347V, Programmed Rapid Start, Class P, Type 1 Outdoor, Inherently protected. Secures to Ballast Bracket with two screws and nuts. CSA certified and/or UL listed– Manufactured by Osram Sylvania Inc., models: QTP2x32T8/347 ISN-SC (49713) and QTP2x28T5/347 PS95-SC (49185)
- 1.8.7.3. Rated 347-480V Programmed Rapid Start, Class P, Type 1 Outdoor, Inherently protected. Secures to Ballast Bracket with two screws and nuts. CSA certified and/or UL listed– Manufactured by Osram Sylvania Inc., model: QHE2x54T5HO/347-480 PSN-HT-MCL (51485)
- 1.8.8. Grounding/Bonding – Provided with CSA/UR (INT), type AWM, solid 18 AWG pigtail lead terminated at Lamp/Ballast Tray Connector and Ballast Bracket with CSA/UR (cUS, INT) insulated, crimp-type ring terminal which secures to Ballast Bracket with screw and nut or equivalent. Additionally provided with pigtail lead terminated at one end on End Cap with CSA/UR (cUS, INT) insulated, crimp-type ring terminal or equivalent, other side terminated at splice of Input Supply means. Grounding per Connector makes first and breaks last.
- 1.8.9. Mounting Means – Two provided. Composed of the following:
- 1.8.9.1. Surface Mount Bracket – Metal, min 0.5 mm thick. Overall approx. 206 mm long, 31 mm wide, 34 mm deep. Secures to Enclosure with integral tabs.
- 1.8.9.2. Chain Mount – Provided with 2.5 mm steel chain and 1.7 mm thick hooks and Surface Mount Bracket
- 1.8.9.3. Cable Mount – Composed of Surface Mount Bracket and the following:
- 1.8.9.3.1. Spring Loaded Mount – Metal, min 1 mm thick. Overall approx. 42.4 mm long, 10 mm OD, provided with 5 mm hole in bottom for securement to Enclosure with one screw.
- 1.8.9.3.2. Cable – Metal, 1.5 mm thick. 50 inches to 250 inches long.

- 1.8.9.3.3. Canopy Mount – Metal, min 1 mm thick. Overall approx. 11.6 mm OD, 25.4 mm long. Provided with 5.2 mm threaded hole in top, and 3 mm hole in bottom for passage of Cable.

2. Model HZ950 & HZ960

2.1. Housing – Painted steel or stainless steel, minimum 0.8mm thick.

Overall approximate sizes:

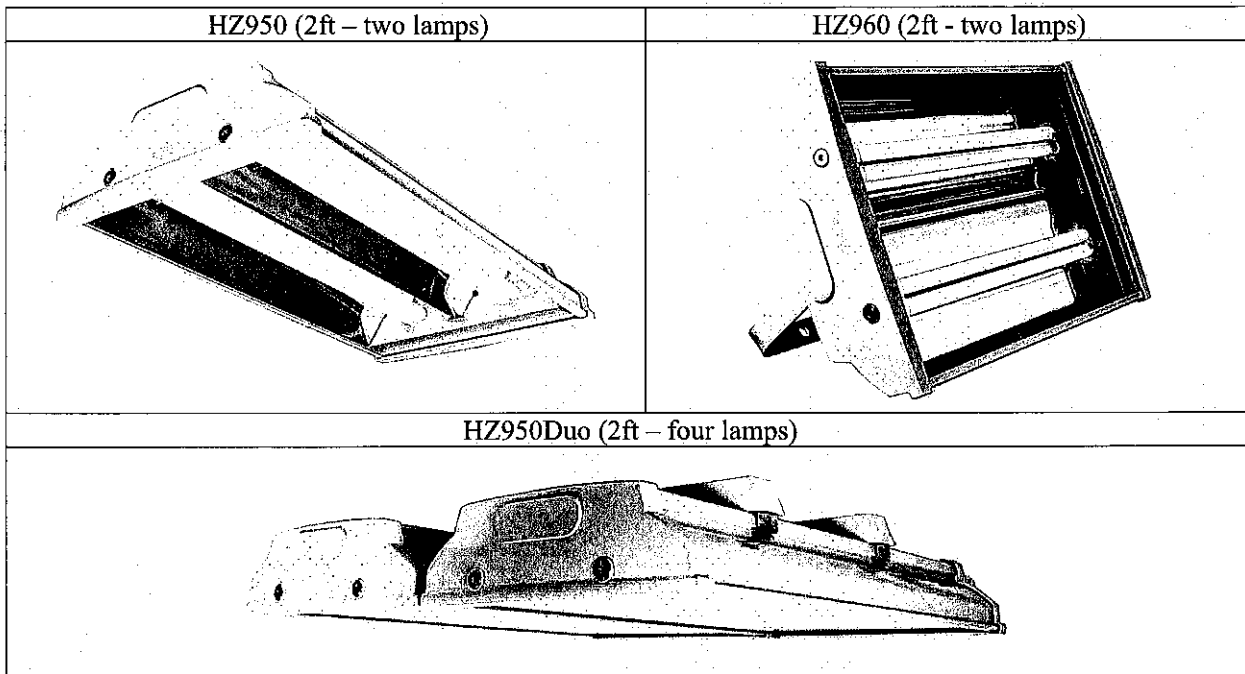
2 ft 2 lamp (36W) version: 495mm long by 315mm wide by 89mm high

2 ft 2 lamp (55W) version: 600mm long by 315mm wide by 89mm high

2 ft 4 lamp (36W) version: 495mm long by 633mm wide by 117mm high

2 ft 4 lamp (55W) version: 600mm long by 633mm wide by 117mm high

Provided with two welded plates on each side, for securement of Housing Bracket and Lamp/Ballast Tray. Provided with integral slot at top on each side, one provided with two holes 39 mm by 16 mm for passage of lamps and two 5 mm threaded holes for securement to End Caps with screws, other provided with two 5 mm threaded holes and two 6 mm holes for Lamp Supports. Provided with integral slot at top on each side for securement of Lens, overlaps Lens by 6 mm. See pictures below for reference:



2.2. Lamp Supports (Guiding Cone) – Two provided. UR (File E178485, US) (NI) (Accepted). Manufactured by Bayer Material Science Ltd, mtl dsg. 1800. Rated min 1.5mm thick, HB, HWI: 2, HAI: 4, 130°C. Overall approx. 40mm deep, 55mm wide, 30mm tall. Secures to Housing with one screw each.

2.3. End Caps – Two provided. Composed of the following:

2.3.1. Housing – Die Cast Aluminum, min 1 mm thick. Overall approx. 315mm by 89mm by 20mm deep. One End Cap provided with up to two 21mm holes for Strain Relief Bushing (when dual luminaire mount is used), two 6 mm holes for securement to Housing Bracket with two screws. Other End Cap only provided with two 6mm holes for securement to Housing Bracket with two screws.

2.3.2. Connector Mount – One provided. Steel, 0.8mm thick. Overall approx. 130mm by 40mm by 22mm. Provided with cutout for Connector.

- 2.3.3. Connector – CSA (LR19980)/UL (E29179). Manufactured by Molex Incorporated, model 42475. Rated V-0, 600V, 8A max. Secures to Connector Mount with integral tabs. Mates with Lamp/Ballast Tray Connector.
- 2.3.4. Gasket – Manufactured by Nevicolor P/N PA6 (trade name Nevimid), rated for a maximum service temperature of 110°C (based on other manufactures of PA6), UL94 HB and a softening point of 215°C.
- 2.4. Lens – Tempered Glass, 3 mm thick.
Overall approximate sizes:
2 ft 2 lamp version: 570mm long by 300mm wide
Secures by physical fit to Housing with Lens Gasket.
- 2.5. Strain Relief Bushing – CSA (93876C) and UL (File E51579). Manufactured by Heyco Products Inc. P/N M3217 (gray) or M3216 (black). Rated “water tight” IP68. Mechanically secured to Enclosure by threaded nipple and nut.
- 2.6. Supply Cord (INT) – CSA/UL. Min 18 AWG, type SEOW or equivalent (must be of extra hard usage type), rated 600V, 105°C, FT1, FT2, VW1.
- 2.7. Lamp/Ballast Tray – composed of the following:
- 2.7.1. Lampholder/Ballast Bracket – Steel, min 0.6mm thick. Overall approx. 340mm long, 55mm wide, ‘U’ shaped. Provided with up to two welded on Steel brackets, overall approx. 18mm by 46mm by 10mm for securement of the Reflector with screws. Provided with welded Steel plate, overall approximately 212mm wide, 36mm tall at one side for securement of Lampholders.
- 2.7.2. Reflector – Aluminum, min 0.3 mm thick. Overall approx. 490 mm by 290 mm by 35 mm deep. Secures inside Housing by physical fit.
- 2.7.3. Lampholders – cUL_{us} listed E26798 (OKCT & OKCT7). Two provided. Compact fluorescent type, rated 660W, 600V, 90°C, “A.A.G. Stucchi”, Cat No 444/VA (Type 2G11). Snaps into Lampholder Bracket.
- 2.7.4. Connector – CSA (LR19980)/UL (E29179). Manufactured by Molex Incorporated, model 42474. Rated V-0, 600V, 8A max. Secures to Lampholder Bracket with integral tabs. Mates with End Cap Connector.
- 2.7.5. Internal Wiring – CSA/UL (INT). Type AWM, solid 18 AWG, rated 600V, 75°C. Provided between Ballast input and Connectors, and Ballast output and Lampholders.
- 2.7.6. Ballast:
- 2.7.6.1. Rated 120V/277V, Programmed Rapid Start, Class P, Type 1 outdoor, inherently protected. Secured to Ballast Bracket with two screws and nuts. CSA certified and/or UL listed– Manufactured by Osram Sylvania Inc., models: QHE2x39-24T5HO/UNV PSN (51478) and QTP2x54T5HO/UNV PSN HT (49135).
- 2.7.6.2. Rated 347-480V Programmed Rapid Start, Class P, Type 1 Outdoor, Inherently protected. Secures to Ballast Bracket with two screws and nuts. CSA certified and/or UL listed– Manufactured by Osram Sylvania Inc., model: QHE2x54T5HO/347-480 PSN-HT-MCL (51485)

2.7.7. Grounding/Bonding – Provided with CSA/UR (cUS, INT), type AWM, solid 18 AWG pigtail lead terminated at Lamp/Ballast Tray Connector and Ballast Bracket with CSA/UR (cUS, INT) insulated, crimp-type ring terminal which secures to Ballast Bracket with screw and nut or equivalent. Additionally provided with pigtail lead terminated at one end on End Cap with CSA/UR (cUS, INT) insulated, crimp-type ring terminal or equivalent, other side terminated at splice of Input Supply means. Grounding per Connector makes first and breaks last.

2.7.8. Mounting Means – Two provided. Composed of the following:

2.7.8.1. Surface Mount Bracket – Metal, min 0.5 mm thick. Overall approx. 206 mm long, 31 mm wide, 34 mm deep. Secures to Enclosure with integral tabs.

2.7.8.2. Chain Mount – Provided with 2.5 mm steel chain and 1.7 mm thick hooks and Surface Mount Bracket

2.7.8.3. Cable Mount – Composed of Surface Mount Bracket and the following:

2.7.8.3.1. Spring Loaded Mount – Metal, min 1 mm thick. Overall approx. 42.4 mm long, 10 mm OD, provided with 5 mm hole in bottom for securement to Enclosure with one screw.

2.7.8.3.2. Cable – Metal, 1.5 mm thick. Approx. 3 ft long.

2.7.8.3.3. Canopy Mount – Metal, min 1 mm thick. Overall approx. 11.6 mm OD, 25.4 mm long. Provided with 5.2 mm threaded hole in top, and 3 mm hole in bottom for passage of Cable.

2.7.8.4. Dual Luminaire Mount – Two provided. Composed of two Surface Mount Brackets, steel bracket, 'U' shaped, overall approx. 500 mm long, 34 mm wide, 20mm tall and metal cover, overall approximately 576mm long, 36mm wide, 30mm tall.

DESCRIPTIVE DOCUMENTS LIST:

Documents detailed herein are subject to inspection by CSA International personnel and shall be made available in the manufacturing location upon request.

Drawing Number	Revision	Title
001	0	ACCIAO HZ920 2x32W Wiring Assembly
002	0	ACCIAO HZ920 2x54W Wiring Assembly
003	0	ACCIAO HZ920 PARTS (Assembly)
004	0	ACCIAO HZ940 4x32W Wiring Assembly
005	0	ACCIAO HZ940 4x54W Wiring Assembly
006	0	ACCIAO HZ940 PARTS (2ft)
007	0	ACCIAO HZ940 PARTS (4ft)
008	0	ACCIAO HZ950 - HZ960 CF lamp Wiring Assembly
009	0	HZ960 Mounting Bracket
010	0	HZ950 Mounting Bracket DUO Series
011	0	HZ950-HZ960 Parts

TEST RESULTS:

Edition 1: (Project 2519238)

Ordinary locations:

All ordinary locations test were conducted on similar models (BX900 series) listed in the ordinary locations report 1248370. Below is a list of the tests that were conducted in that report.

Test	Standard	Clause	Model Tested
Bonding Impedance	CSA 250 / UL 1598	17.2	BX900X
Normal Temperature	CSA 250 / UL 1598	14.2	BX900X
Dielectric Voltage Withstand	CSA 250 / UL 1598	17.1	BX900X
Strain Relief	CSA 250 / UL 1598	16.21.1	BX900X
Mounting Means Evaluation	CSA 250 / UL 1598	5.11, 16.15	BX900X
Rain	CSA 250 / UL 1598	16.5.2	BX900X
Sprinkler	CSA 250 / UL 1598	16.5.3	BX900X

Hazardous locations:

The following tests were conducted by CSA Cleveland under this report with satisfactory results.

Vibration Test – CSA C22.2 No. 137 clauses 3.6.6 and UL 844 section 30 – HZ940 was mounted as it would be in normal operating conditions (by mounting brackets) and attached to the test fixture with the cable gland. At the end of the tests there was no loosening of any parts.

Corrosion Protection/Rust Resistance – per UL 844 section 31 – HZ920 (2ft) was placed into the salt fog chamber for a minimum period of 24 hours. Upon completion the sample was inspected and did not show any signs of corrosion.

Means of Mounting – CSA C22.2 No 137 clause 3.4.4 – waived; was conducted on similar models (BX900 series) listed in the ordinary locations report 1248370 in accordance to CSA 250/UL 1598.

Flame Test – CSA C22.2 No. 137 clause 3.6.2 – waived; enclosure is not made of a polymeric material.

Temperature Test – CSA C22.2 No. 137 clauses 3.6.2 & 5.2.4 and UL 844 section 42 – HZ940 (4x54W) was considered worst case for this test. The sample was operated so that the internal components would heat up. A thermal imaging camera was used to identify the hottest components. Below is a table indicating the temperature recorded.

Location	TC #	Temperature <i>adjusted to maximum rated ambient</i> (°C)	Temperature <i>adjusted for Haz. Loc.</i> (°C)
Ambient (1" below UUT)	1	40.0	40.0
Ballast component L2	2	85.5	90.5
Ballast power supply connector	3	58.0	63.0
Lamp/bulb surface	4	92.8	97.8
Lamp holder	5	46.2	51.2
Lens center	6	53.5	58.5
Backside of housing above ballast location	7	44.2	49.2

Luminaire end cap/non-power supply end	8	43.7	48.7
Luminaire end cap/power supply end	9	42.5	47.5
Lens seal midpoint	10	52.3	57.3

The hottest temperature recorded with 5°C added for Hazloc was 97.8°C (lamp). The assigned temperature code for the luminaire is a T5. A T5 temperature code is optionally marked.

Weather proofness – CSA C22.2 No. 137 clause 3.6.4 and UL 844 section 24 & 40.3 – waived; was conducted on similar models (BX900 series) listed in the ordinary locations report 1248370 in accordance to CSA 250/UL 1598.

Dielectric Strength Test – CSA C22.2 No. 137 clause 3.6.5 – immediately following the temperature test, a dielectric strength of 1240Vac 60Hz was applied to the input leads and ground for a period of 1 minute without breakdown.

Thermal Shock Test – CSA C22.2 No. 137 clause 3.6.6 and UL 844 section 30 – immediately following the temperature and dielectric strength tests, water at a temperature of 0.9°C was splashed onto the lens at 53°C without any adverse damage.

Division 2 – arcing and sparking components

All internal wiring connections are made with pressure type terminal connections, terminal block and/or wire nuts. The T5 and T8 lamps are secured into the holders by a 90° twist locking type of holder. The CF bulbs are secured by mechanical means incorporated into the construction (lamp supports and end cap). None of these connections came loose and the luminaire was fully functional following the vibration test.

No internal temperature was measured higher than 100°C. See the temperature tests above.

Environmental:

The submitter supplied test data in the form of an IECExTR, report number 04AJ00284 dated 2009/12/14 from IMQ.

All ingress protection testing was conducted to the IEC 60598-2-1 for an IP66 rating (in accordance to IEC 60529) and will be permitted to be marked on the luminaire.

Based on the above test results, no further testing was deemed necessary.

End of Report