

TRA 26-01 - Supply and Delivery of School Buses - Specification - Base Bus Specifications: Body - Type C Electric

Line Item	Dynamic Specialty Vehicles		Ride Canada Company Ltd.		Velocity Truck Centres		Western Canada IC Bus Inc.	
	Submission 1		Submission 1		Submission 1		Submission 1	
	Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information
1	Yes		Yes		Yes		Yes	
2	Yes		Yes	Yes	Yes		Yes	
3	Yes		Yes	Yes	Yes		Yes	
4	Yes		Yes	Yes	Yes		Yes	
5	Yes		Yes	Yes	Yes	We do not have Range in the dash EV dash is similar to existing diesel with addition of SOC gauge	Yes	
6	Yes		Yes	Yes	Yes		Yes	
7	Yes	Reaching and sustaining the 15.5 degree C (+/- 2degrees) inside the vehicle when temperature is 0 is not a problem. Further testing is required to provide the achievable in-vehicle temperature when outside temp is -30C. The battery thermal management system typically uses less than 10% of useable power to maintain operating conditions. this does not account for cabin heat loads. When cabin heat is activated cabin heat will consume 6%-20% of useable power.	Yes	With auxiliary Diesel heater	Yes	"Yes standard heaters can meet the desired temp but not without more than -1% effect on range. We have 2 electric coolant heaters. 10kW heater for the batteries and 20kW heater for the cabin area"	Yes	Dual heating system included: electric and fuel fired. Both systems will operate on a closed loop. The electric heater (21kW) sustains heat between 18c to 23c (defined as comfort) down to -10C (14F) ambient temperature. In temperatures below -10C the fuel-fired heater will maintain comfort. Operation of heating systems has been taken into consideration in our range statement.
8	Yes	The thermal management system consists of three electric heaters of which one is dedicated to heating the propulsion batteries and two are dedicated to cabin heat. As a supplement to the electric heaters there is an optional Valeo diesel fuel-fired heater that can provide additional heat for the cabin. The electric heaters and/or fuel-fired heater are capable of preheating the cabin while the bus is charging. While the bus is charging the driver can turn on the charger to run the electric heaters and not affect the battery charge. With a Valeo heater the timer can be set on the EV no different than a diesel engine to pre-heat the cabin.	Yes	With auxiliary Diesel heater: Preheat by electric is the only optional using energy from the grid and recharge to 100%	Yes	TBB is currently testing to have Webasto Diesel Heater incorporated with chassis	Yes	When vehicle is not in use during cold temperatures it is recommended to keep battery temp above 0C by keeping the vehicle plugged in. When vehicle is in use the vehicle BMS will control temperature. There are no additional maintenance or operational requirements.
9	Yes	The Valeo diesel-fired heater is included in the base price	Yes	Yes	Yes		Yes	
10	Yes	LED Headlights	Yes	Yes	Yes		Yes	
11	Yes	Tinted Safety Glass	Yes	Front Windshield:7.76mm, laminated clear glass	Yes	Tinted safety glass 1- piece curved & bonded windshield provided for	Yes	Laminated and bonded in place windshield
12	Yes		Yes	Driver's window with no sliding	Yes		Yes	
13	Yes		Yes	Yes	Yes	As required by district	Yes	
14	No		Yes	Yes	Yes	As required by district	Yes	
15	Yes		Yes	Yes	Yes		Yes	
16	Yes		Yes		Yes	we use screws only	Yes	
17	Yes		Yes	Vandal lock for Emergency	Yes		Yes	
18	Yes		Yes		Yes	Air and Electrical entrance door controls available	Yes	
19	Yes		Yes		Yes	One windshield mounted and one above driver's	Yes	
20	Yes		Yes	Yes	Yes	LED Driver's Dome	Yes	
21	Yes		Yes		Yes	Front & rear half of dome lights on separate switches	Yes	
22	Yes		Yes	Standard radio with no CD	Yes		Yes	
23	Yes		Yes		Yes		Yes	
24	Yes		Yes	Yes	Yes	FAK & fire extinguisher in overhead compartment. Triangles on vestibule floor	Yes	
25	Yes		Yes	Yes	Yes		Yes	
26	Yes		Yes	Yes	Yes		Yes	

27 Two (2) FULLY ILLUMINATED Stop arms with stop signs (red octagon with white lettering) strobe lights (red) and both with wind guards. One (1) front mounted (1) rear mounted. *Please state if electric or pneumatic*	Yes	Electric or Pneumatic available	Yes	Yes	Yes	Yes
28 ILLUMINATED SCHOOL BUS SIGN (front and rear) approved by BC Ministry of Transportation	Yes		Yes	Yes	Yes	Yes
29 Wet arm windshield wipers intermittent / delay preferred	Yes		Yes	Yes	Yes	Yes
30 Light coloured rubber floor covering and entrance steps. Specify colour.	Yes	Grey	Yes	Yes Black	Yes	Grey colour flooring Yes Gray
31 Seat spacing minimum 24" knee clearance Frame seat belt ready	Yes		Yes	Yes	Yes	Yes
32 Aluminized side panelling	Yes		Yes	Yes	Yes	Galvalume interior side walls Yes
33 77" minimum interior headroom at highest point. Please state Headroom	Yes	77"	Yes	Yes	Yes	78 inch headroom standard Yes 78"
34 Interior mirror - minimum 6" up to 10" x 30" Sun visor - Plexiglas 6" x 30"	Yes		Yes	Yes	Yes	6 x 30 inch mirror provided Yes
35 Two (2) roof emergency hatches / vents	Yes		Yes	Yes	No	Yes
36 Body fully undercoated for noise and enhanced rust protection	Yes	Asphalt emulsion undercoating included. Option: Premium Undercoat Sulfonate Enhanced DTM Modified Wax coating. Replaces the standard asphalt emulsion. Provides approximately twice the performance in highly corrosive environments where de-icing	Yes	Yes	Yes	Not available Yes Water Based Asphalt Emulsion installed post body-drop is included. Chemguard metal treatment is available optionally.
37 Each unit shall be equipped with a Sound Generator that complies with FMVSS and CMVSS 141	Yes		Yes	Yes	Yes	Asphalt emulsion undercoating for maximum corrosion resistance. Corashield high performance undercoating is available at an additional Yes

TRA 26-01 - Supply and Delivery of School Buses - Specification - Base Bus Specifications: Chassis - Type C Electric

Line Item	Chassis Specifications	Dynamic Specialty Vehicles		Ride Canada Company Ltd.		Velocity Truck Centres		Western Canada IC Bus Inc.	
		Submission 1	Submission 1	Submission 1	Submission 1	Submission 1	Submission 1		
Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information
1	Chassis and Body Year	Yes	2027 Blue Bird	Yes	Ride Creator Type C 2026	Yes	Freightliner Custom Chassis - Model Year 2026/2027	Yes	2026/2027
2	Propulsion system - vehicle performance include: A sustained speed of 70 kph on a 2.5% grade; and 20 kph on a 20% grade. An ability to accelerate to 20 kilometers per hour (kph) in four seconds; to 40 kph in 10 seconds; 50 kph in 20 seconds and 70 kph in 35 seconds. Expectations are that the school bus shall be cable of a minimum of 200 kilometer range on a single battery charge on route measured with 50% city miles and 50% highway miles. Vehicles should be capable of operating at minus 30 degrees Celsius (-30C) to 35C with limited loss of range (no more than 10% reduction of documented range) in these variable conditions. This range rating must be tested with all normal accessories running in the conditions described including terrain encountered in BC.	Yes	A sustained speed of 70 kph on a 2.5% grade Exceed: and 20 kph on a 20% grade. Capable of starting on a 20% grade but have not tested at the listed sustained low speed operation. An ability to accelerate to 20 kilometers per hour (kph) in four seconds; to 40 kph in 10 seconds; 50 kph in 20 seconds and 70 kph in 35 seconds. We are capable of 0-96.5 kph in 45 seconds. While we have not tested to the scale in the spec with logic applied we would meet this spec. Expectations are that the school bus shall be capable of a minimum of 200 kilometer range on a single battery charge on route measured with 50% city miles and 50% highway miles. We are capable of meeting or exceeding. Vehicles should be capable of operating at minus 30 degrees Celsius (-30C) to 35 C with limited loss of range (no more than 10% reduction of documented range) in these variable conditions. This range rating must be tested with all normal accessories running in the conditions described including terrain encountered in BC. This condition has the best	Yes	Performance Under GVWR: A sustained speed of 70 kph on a 2.5% grade: YES A sustained speed of 20 kph on a 20% grade: Yes. An ability to accelerate to 20 kilometers per hour (kph) in four seconds: YES An ability to accelerate to 40 kph in 10 seconds: YES An ability to accelerate to 50 kph in 20 seconds: YES An ability to accelerate to 70 kph in 35 seconds: YES The bus is able to achieve a minimum range of 200 km at GVWR with all accessories on under a driving condition of 50% city miles and 50% highway miles.	Yes	Cummins ISB 6.7L 250HP 660LB/FT with VGT Brake	Yes	
3	Describe vehicle performance while fully loaded in terms of maximum operating speed grade-ability and acceleration. Please provide documentation of for verifying submitted vehicle performance claims to meet above performance specifications.	Yes	Available based on vehicle configuration.	Yes	Yes. 100km/h max speed and up to 21 degree gradeability	Yes	"7 year warranty on 2500 series transmission 6 Speed option available"	Yes	Range: 200km in bid stated conditions. Acceleration: All acceleration times will comply with bid stated conditions. Max Speed: 100km/h 2 0% grade 0-100km/h in <40 sec Peak Power: 250kW (335 hp) Continuous Power 160 kW (215 hp) Peak Torque: 15700Nm (11570 ft-lbs) Continuous Torque: 2100Nm (1549 ft-lbs) See Attachment
4	The manufacturer shall provide a vehicle equipped with a complete propulsion system capable of operating across mountainous city and highway routes without premature battery depletion. The manufacturer shall state whether this capability is achieved through an electric-motor-based system mechanical gearing or a combination of both.	No	We offer an axle ratio that is optimized for the full range of operation of a typical route bus all climates terrain and 0-100 kph. We are certainly open to exploring additional options if the operating condition would benefit from it.	Yes	Yes; 2 gear ratio Ride school buses can change the powertrain different ratio to maximize range performance in mountain routes city routes highway routes or a combination of mountain city and highway routes automatically.	Yes	47p & 53p = 199" 59p = 219" 65p = 238" 71p = 259" 77p = 279"	Yes	Differential axle ratios are determined by the axle on the vehicle which are semipermanent components. Changing the ratio would require a different axle. The axle differential ratio is designed to achieve an overall performance that is suitable for most environments.
5	Wheelbase up to 280" - Specify for Each body size	Yes	273" Wheelbase with 3303 body size (71 passenger) 273" Wheelbase with 3310 body size (76 passenger)	Yes	Yes; 260in/280in	Yes		Yes	276"
6	Remote air tank drains	Yes	Heated automatic drains for all reservoirs included. If remote manual drains are required then they must be on	Yes		Yes		Yes	
7	Rear tow hooks	Yes		Yes	Yes	Yes		Yes	
8	Wheels - Disc hub piloted	Yes		Yes	Yes	Yes		Yes	
9	Tires - Six (6) -11R22.5 Michelin XZE 2 preferred	Yes	Kumho equivalent supplied. Michelin XZE 2 available as an option.	No	Good year S2000+	Yes	23000lb Rear axle standard 21000lb Rear axle available if desired by district	Yes	Hankook AH 37 Load Range H Steer Tires Hankook DH 37 Load Range H Drive Tires Additional tire brand quotes are available on request.
10	Rear Axle - Capacity: 19 500 lb Maximum speed required: 110 kmh Cruise control set at 100 kmh 21 000 lb air ride suspension.	Yes	Max rear axle capacity is 23000 lb. Maximum speed is 104.6 kmh. Cruise control is not available. If air suspension is used then it will have a rating of 23000	No	28660 lb Air suspension rear.	Yes	Lighter axle available at reduced cost depending on bus size	Yes	

11 FRONT AXLE 10 000 lb minimum 10 000 lb spring suspension	Yes		Yes	Yes	Yes		Yes
12 AIR BRAKES 5 cam W/ABS Min. 13.2 cfm compressor Spring brakes for emergency and parking Auto slack adjustors long stroke Air dryer 16-1/2 x 5 Front 16-1/2 x 7 Rear backing plates	Yes		Yes	Yes	Yes	Delco Remy 200amp	Yes Bendix Spicer ADB22X Air Disc Brakes Extended Service Size 22.5"
13 Regenerative braking to charge batteries must meet all Canadian Motor Vehicle Safety Standards in regards to braking systems	Yes	Ble Birds regenerative braking systems to charge batteries meets all Canadian Motor Vehicle Safety Standards in regards to braking system.	Yes	Ride school buses regenerative braking system to charge batteries meets all Canadian Motor Vehicle Safety Standards in regards to braking system	Yes		Yes
14 BATTERY - *200 kwh minimum* - Vendors should describe their proposed energy storage/battery system including the number of battery packs and battery chemistry. "Battery efficiency (kilometers per kWh) "Time (in minutes) to charge batteries from 20% to 100% state of charge on a level 2 charger. "Time (in minutes) to charge batteries from 20% to 80% state of charge on a level 2 charger. "Battery capacity (amps per hour per cell) "Battery storage capacity (kWh) "Total usable battery energy storage capacity (kWh) "Total battery pack C-rate. "Total battery pack E-rate "Battery Cycle Life in number of charge-discharge cycles at a specific depth of discharge (DOD) "Battery thermal management type (describe battery maintenance and operational requirements when vehicle is in use and not in use	Yes	1.*200kWh minimum*Exception currently at 194 kWh useable (170 kWh). 2.Vendors should describe proposed energy storage/battery system including the number of battery packs: Two (2) 3.and battery chemistry: Li-ion NMC 4."Battery efficiency (kilometers per kWh)" a.Time (in minutes) to charge batteries from 20% to 100% state of charge on level 2 charger: 420-840 minutes. b.Time (in minutes) to charge batteries from 20% to 80% state of charge on level 2 charger: 319-612 minutes. 5.Battery Capacity (amps per hour per cell) 6. Battery Storage capacity kWh:194 kWh 7.Total useable battery energy storage capacity (kWh) 170 kWh 8.Total battery pack C-rate. Exception but available upon request from the battery supplier 9.Total battery pack E-rate Exception but Available upon request from the battery supplier. 10.Battery Cycle Life in number of Charge-discharge cycles at a specific depth of discharge (DOD): Exception 8 year or 390 Megawatt/Hour gross discharge warranty maintaining 70% of useable capacity 11.Battery thermal management type (describe battery maintenance and operational requirements when vehicle is in use not in use): Circulating DexCool and distilled water mix with resistance heat and R134A compressor	Yes	Total capacity is 288kwh lithium ion (LFP) with Lithium iron phosphate chemistry. 16.5 hours to charge from 0% to 100% 12.5 hours to charge from 20% to 100%. Total usable battery energy storage capacity is 260 kWh. Battery capacity will be 60% after warranty period 12years or The gross discharging kWh limitation throughout warranty period is 800000 kWh. Please try to full capacity until automatically stops each time to maintain SOC accuracy and battery consistency. If the vehicle must be stored for a long period park it preferably in a cool area protected from freezing. To optimise the longevity of the battery it is recommended to always keep the charge at 50%. A heated mat is used to warm the batteries. No maintenance is required.	Yes	Yes	"The battery system consists of 2 strings of 3 battery packs each achieving a total capacity of 210kWh and a nominal voltage of 608V. Each pack has a 1P63S cell configuration. The cells are prismatic and use LFP chemistry. Lithium-Ion Batteries (6) 210kWh total 608V 345Ah total. Vehicle efficiency 0.84 kWh/km Level 2 Charge time: 20kW x T = 60% x 210kWh T = 378 Mins Useable capacity = 70% x 210kWh = 147 kWh Pack C Rate = 1 (continuous discharge) Pack C Rate = 0.7 (continuous charge) Attachment"
15 Back-up alarm 97 dB minimum	Yes		Yes	Yes	Yes		Yes
16 Battery Management System	Yes	Blue Birds Battery Management System (BMS) facilitates smart charging by monitoring battery State of Charge (SOC) and other parameters associated with State of Health (SOH) and communications to the system controller (SCM). The SCM will then determine how much charge should be provided to the battery based on the current state of the battery and control the on-board	Yes	Yes	Yes	750 Watt Per Cummins	Yes Each battery pack is equipped with a battery management system to monitor battery life state of charge and other proprietary variables.
17 On-Board Charging Systems Vendors should describe their preferred charging/discharging systems including EVSE noting that the expectation is that vehicles will be fitted with on board AC (19.2 kW) bidirectional charging/discharging systems that conform to the most recent SAE J1772 standards and/or other relevant standards for V2B bi-directional power flow. The vehicles should also be fitted with DC charge/discharge coupler capable of a sustained maximum of 90kW of power transfer at a maximum of 200 AMPs. The coupler should conform to all current SAE standards. All charging system components shall have CSA certification or provide acceptable documentation. Charging systems shall be capable of operating from -30C to 40C with no more than 10% degradation in performance	Yes	Vendors should describe their preferred charging/discharging systems including EVSE noting that the expectation is that vehicles will be fitted with on board AC (19.2 kW) bidirectional Exception currently - Open to discussion charging/discharging systems that conform to the most recent SAE J1772 standards and/or other relevant standards for V2B bi-directional power flow.: We are certified ISO 15118-20 The vehicles should also be fitted with DC charge/discharge coupler capable of a sustained maximum 90kW Up to 120 kWh input and 60 kWh output of power transfer at a maximum of 200 AMPs. Meets the coupler should conform to all current SAE standards.: SAE J1772 CCS1 All charging system components shall have CSA certification or provide acceptable documentation. Charging systems shall be capable of operating from -30C to 40C with no more than 10% degradation in performance: Meets or Exceeds.	Yes	The RIDE system is equipped with a high-performance integrated bidirectional on-board charging system that fully meets the power standard and environmental requirements specified in the tender. Bidirectional Power Flow (V2B/V2G): The vehicle features an advanced bidirectional power electronics architecture. While the documentation specifically highlights V2G (Vehicle-to-Grid) integration via Nuvve charging stations this same hardware platform inherently supports V2B (Vehicle-to-Building) bi-directional power flow. The system is capable of discharging energy to support building loads peak shaving and emergency backup provided the site is equipped with compatible EVSE management software. Power Capacity: The system supports a maximum charging power of level 2 19.2 kW (240V AC) and maximum charging and discharging current of level 3 200A without EVSE power limit. Standards & Interoperability: The vehicle utilizes a standard CCS1 (SAE J1772) connector ensuring full compatibility with North American charging infrastructure and the most recent SAE standards for bidirectional communication. Environmental Resilience: The charging and discharging systems are engineered for extreme climates capable of operating within a temperature range of -30°C to 40°C. Under these conditions the system maintains high efficiency with less than 10% performance degradation ensuring reliable V2B service even in harsh winter or summer environments.	Yes	Yes	Yes See Attachment
18 Heavy Duty hoses to meet current coolant standards.	Yes		Yes	Yes	Yes	Gates Blue stripe standard	Yes
19 Data collection for performance and analytical comparisons must be available on a regular basis for both ASTSBC and the purchaser. Training must be provided. *Sample report with minimum requirements can be found in the Documents section.	Yes		Yes	Yes Tecium telematics and offline data storage	Yes		Yes Customized Regular Data Reporting will continue to be offered as required by the ASTSBC.
20 Oil lubed front wheel bearings or sealed bearings	Yes		Yes	Yes grease lubed sealed bearings	Yes		Yes
21 SERVICE MANUAL AND DIAGNOSTIC SOFTWARE Service manual for engine and chassis Engine and body diagnostics software or licensing if web based. Diagnostic Training must be provided to each purchaser	Yes	Body diagnostics software service manual and training are included. Cummins Corporation currently is not offering any technical manuals on their powertrain and battery management system. Due to high voltage electrical systems integrated into Blue Bird Bus platform Cummins is responsible for all repairs made to these systems.	Yes		Yes	Parts & service info on-line. Engine Diagnostic software 1 per district	Yes
22 Supply Driver Training and Orientation to ASTSBC Trainers to supply training for drivers upon bus delivery.	Yes		Yes	Yes	Yes		Yes
23 Supply line setting ticket	Yes		Yes	Yes	Yes		Yes
24 Heater cut off valve at source	Yes		Yes	Yes	Yes		Yes

25 Battery location and weight - please describe	<p>Yes</p> <p>The batteries are enclosed in aluminum alloy structure and steel container and attached to the chassis via frame mounts and rubber insulators and are located under the chassis frame rails between the front and rear axle. Approximate weight is 1120 KG.</p>	<p>Yes</p> <p>Located below the middle of the chassis crossbeamWeight:1905kg</p>	<p>Yes</p> <p>Batteries are located between rails / axles closer to front axle - 710kg -715kg (1,565lbs - 1,576lbs) per pack = 1,420kg - 1,430kg (3,130lbs - 3,152lbs) total for 2 packs.</p>	<p>Yes</p> <p>Batteries are mounted in between the frame rails and rigidly attached using welded and bolt on brackets. Each battery pack weighs 491 lbs. Batteries are protected from the elements. Batteries are backed by international standards rating of IP68 and are deemed fit enough to withstand dust dirt and sand and are resistant to submersion up to a maximum depth of 1.5m underwater for up to 30 minutes and encased in an aluminum box.</p>
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