**REPORT NUMBER: 213-MGA-21-033**

# SAFETY COMPLIANCE TESTING FOR FMVSS 213 CHILD RESTRAINT SYSTEMS

**Nuna Baby Essentials Inc.**
**Pipa Lite, Model CF08500CVR**

**PREPARED BY:**
**MGA Research Corporation**
**5000 Warren Road**
**Burlington, WI 53105**

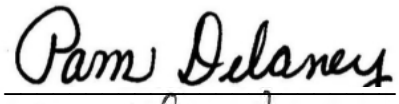
**Report Date: October 10, 2023**

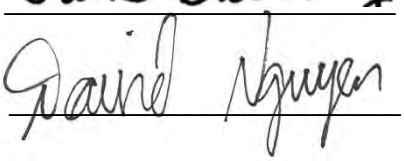
**DRAFT REPORT**

**PREPARED FOR:**
**U. S. DEPARTMENT OF TRANSPORTATION**
**National Highway Traffic Safety Administration**
**Enforcement**
**Office of Vehicle Safety Compliance**
**Mail Code: NVS-220, W43-481**
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**Washington, DC 20590**

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Prepared By: 

Approved By: 

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Technical Report Documentation Page

| | | |
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*15. Supplementary Notes*

*16. Abstract*

Compliance tests were conducted on the Nuna Baby Essentials Inc., Pipa Lite, Model CF08500CVR child restraint systems in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-213-10. Test failures identified were as follows:

| | | |
|---|---|---|
| S5.3.2 Installation | S5.5.2(n) Labeling | S5.8.2(b) Electronic Registration Form |
| S5.5.2 Labeling | S5.6 Printed Instructions | S5.8.2(c) Electronic Registration Form |
| S5.5.2(l)(1) Labeling | S5.6.1 Printed Instructions | |
| S5.5.2(l)(2) Labeling | S5.6.1.6 Printed Instructions | |


| | | | |
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# SECTION 1
# PURPOSE AND TEST PROCEDURE

## PURPOSE

The tests performed are part of the safety compliance program for the National Highway Traffic Safety Administration (NHTSA) by MGA Research Corporation under Contract No. DTNH22-17-D-00080. The purpose of the testing is to determine whether production child restraint systems meet the minimum inspection and dynamic test requirements of TP-213-10, “Child Restraint Systems”.

## TEST PROCEDURE

The MGA Research Corporation Test Procedure for FMVSS 213, submitted and approved by the Office of Vehicle Safety Compliance, National Highway Traffic Safety Administration, contains the specific procedures used to conduct this test. This procedure shall not be interpreted to be in conflict with any portion of FMVSS 213 and amendments in effect as noted in the applicable contract.

## SECTION 2
## INTRODUCTION AND SUMMARY

This report presents all of the FMVSS 213 compliance inspection and test data obtained on the Nuna Baby Essentials Inc. Pipa Lite, Model CF08500CVR, child restraint system. The restraint was dynamically tested in the following configurations:

- Newborn infant, rear facing, with base, lap belt, tether free, and reclined
- 12 month old, CRABI, rear facing, with base, lower anchor, tether free, and reclined

Inversion testing was performed in both the forward Y-axis rotation and in the lateral X-axis rotation for the following configurations:

- Newborn infant, rear facing, with base, lap belt, tether free, and reclined
- 12 month old, CRABI, rear facing, with base, lap belt, tether free, and reclined

The inspection and/or testing of the Nuna Baby Essentials Inc., Pipa Lite, Model CF08500CVR child restraint failed to meet the following requirement(s) of FMVSS No. 213 when tested in accordance with TP-213-10 in the configurations and conditions documented in this report:

S5.3.2 Installation

*Each add-on child restraint system shall be capable of meeting the requirements of this standard when installed solely by each of the means in the following table for the particular type of child restraint systems:*

Table for S5.3.2

| Type of add-on child restraint system | Means of installation | | | | |
|---|---|---|---|---|---|
| | Type 1 seat belt assembly | Type 1 seat belt assembly plus a tether anchorage, if needed | Child restraint anchorage system (effective September 1, 2002) | Type II seat belt assembly | Seat back mount |
| Harnesses labeled per S5.3.1(b)(1) through S5.3.1(b)(3) and Figure 12 | | | | | X |
| Other harnesses | | X | | | |
| Car beds | X | | | | |
| Rear-facing restraints | X | | X | | |
| Belt-positioning seats | | | | X | |
| All other child restraints | X | X | X | | |

*See NHTSA Interpretation letter supporting this failure at:*
https://www.nhtsa.gov/interpretations/571213-detachable-base-crs3

S5.5.2 Labeling

*The information specified in paragraphs (a) through (m) are stated in the English language and not smaller than 10 point type. Unless otherwise specified, information is on a white background with black text. Unless written in all capitals, the information is in sentence capitalization.*

S5.5.2.(l)(1) Labeling

*A seating position equipped with a continuous-loop lap/shoulder belt;*

S5.5.2.(l)(2) Labeling

*A seating position equipped with only a lap belt, as specified in the manufacturer's instructions; and*

S5.5.2.(n) Labeling

*Child restraint systems, other than belt-positioning seats, harnesses and backless child restraint systems, may be certified as complying with the provisions of S8. Child restraints that are so certified shall be labeled with the statement "This Restraint is Certified for Use in Motor Vehicles and Aircraft." Belt-positioning seats, harnesses and backless child restraint systems shall be labeled with the statement "This Restraint is Not Certified for Use in Aircraft." The statement required by this paragraph shall be in red lettering and shall be placed after the certification statement required by S5.5.2(e).*

*S5.6* Printed Instructions for Proper Use

*Any labels or written instructions provided in addition to those required by this section shall not obscure or confuse the meaning of the required information or be otherwise misleading to the consumer. Any labels or written instructions other than in the English language shall be an accurate translation of English labels or written instructions. Unless written in all capitals, the information required by S5.6.1 through S5.6.3 shall be stated in sentence capitalization.*

*S5.6.1* Printed Instructions for Proper Use

*Each add-on child restraint system shall be accompanied by printed installation instructions in English that provide a step-by-step procedure, including diagrams, for installing the system in motor vehicles, securing the system in the vehicles, positioning a child in the system, and adjusting the system to fit the child. For each child restraint system that has components for attaching to a tether anchorage or a child restraint anchorage system, the installation instructions shall include a step-by-step procedure, including diagrams, for properly attaching to that anchorage or system.*

*S5.6.1.6* Printed Instructions for Proper Use

*Each add-on child restraint system shall have a location on the restraint for storing the manufacturer's instructions.*

S5.8.2(b) Electronic Registration Form

*No other information shall appear on the electronic registration form, except for information identifying the manufacturer or a link to the manufacturer's home page, a field to confirm submission, and a prompt to indicate any incomplete or invalid fields prior to submission. Accessing the web page that contains the electronic registration form shall not cause additional screens or electronic banners to appear.*

S5.8.2(c) Electronic Registration Form

*The electronic registration form shall be accessed directly by the web address that the manufacturer printed on the attached registration form. The form must appear on screen when the consumer has inputted the web address provided by the manufacturer, without any further keystrokes on the keyboard or clicks of the mouse.*

Restraint system inspection, dynamic sled testing, and inversion testing were performed by MGA Research Corporation in Burlington, Wisconsin. Compliance test data sheets for all tests are found in Section 5 of this report.

## SECTION 3

## CHILD RESTRAINT SYSTEM IDENTIFICATION

Report No. 213-MGA-21-033

| | |
|---|---|
| Manufacturer: | Nuna Baby Essentials Inc. |
| Place of Manufacture per S5.5.2(d): | China |
| Model No. | CF08500CVR |
| Group No. | 1 |

| | | |
|---|---|---|
| 1 | Item Code | 033-NCF08500C-01-NINRFB2FR |
| | Date of Manufacture | 2020/08/27 |
| | Sled Test No. | W21102F |
| | | |
| 2 | Item Code | 033-NCF08500C-02-12CRFBLFR |
| | Date of Manufacture | 2020/08/27 |
| | Sled Test No. | W21102R |
| | | |
| 3 | Item Code | |
| | Date of Manufacture | |
| | Sled Test No. | |
| | | |
| 4 | Item Code | |
| | Date of Manufacture | |
| | Sled Test No. | |
| | | |
| 5 | Item Code | |
| | Date of Manufacture | |
| | Sled Test No. | |
| | | |
| 6 | Item Code | |
| | Date of Manufacture | |
| | Sled Test No. | |

## SECTION 4

## DYNAMIC TEST RESULTS DATA SUMMARY

| Child Restraint System - Nuna Baby Essentials Inc. / Pipa Lite / CF08500CVR | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Item Code** | **Sled Test No.** | **Dummy and CRS Test Mode*** | **Lower Anchors Used? Y/N** | **Tether Used? Y/N** | **HIC (1000 max)** | **Chest g clip (60 g max)** | **Head Excursion (720 mm max - or 813 mm max w/o tether)** | **Knee Excursion (915 mm max)** | **Seat Back Angle (70 deg max)** | **Pass/ Fail** |
| 033-NCF08500C-01-NINRFB2FR | W21102F | NIN (RF) (R) | N | N | N/A | N/A | N/A | N/A | 57 | Pass |
| 033-NCF08500C-02-12CRFBLFR | W21102R | 12 mo (RF) (R) | Y | N | 729 | 51 | N/A | N/A | 57 | Pass |

*Test Mode:

- RF- Rear facing
- FF- Forward facing
- SF- Side facing
- U- Upright
- R- Reclined
- B- Backless Booster
- N- Not Applicable
- F- Fixed Back

# SECTION 5
# DATA

**LABELING**

**(FMVSS 213, S5.3, S5.5)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/15/2021 |

| | |
|---|---|
| Model No.: | CF08500CVR |

| Requirement | Pass/Fail |
|---|---|
| The labels on the subject child restraint system were inspected and compared to the requirements of FMVSS No. 213 S5.3.1(b) and S5.5, as applicable. | Fail (1)(2)(3)(4)(5) |

The following failures were identified:

(1) S5.3.2 The child restraint system does not appear to capable of being installed using a Type I seat belt assembly.
(2) S5.5.2 The information from S5.5.2(l) is printed on a black background with white text.
(3) S5.5.2(l)(1) The installation diagram showing the child restraint installed in seating position equipped with a continuous-loop lap/shoulder belt appears to be missing.
(4) S5.5.2(l)(2) The installation diagram showing the child restraint installed in seating position equipped with only a lap belt appears to be missing.
(5) S5.5.2(n) The required statement is preceded by the phrase, “When installed with the base”.

Remarks:

None

Photographs of the labels are included in Section 9.

Recorded by:  Date: 3/15/2021

**PRINTED INSTRUCTIONS FOR PROPER USE**

**(FMVSS 213, S5.6)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/15/2021 |

| | |
|---|---|
| Model No.: | CF08500CVR |

| Requirement | Pass/Fail |
|---|---|
| The printed instructions accompanying the subject child restraint system were inspected and compared to the requirements of FMVSS No. 213 S5.6, as applicable. | Fail (1)(2)(3) |

The following failures were identified:

(1) S5.6 The printed instructions do not appear as required in the standard because the instructions for installation in aircraft are prefaced with “When used with the base,” which confuses the meaning of the required information.
(2) S5.6.1 The printed instructions do not appear to include diagrams and/or instructions for installing the child restraint system with Type I seat belt assembly.
(3) S5.6.1.6 The location for storing the installation instructions appears to be located on the base, not on the child restraint system.

Remarks:

None

Photographs of the printed instructions are included in Section 9.

Recorded by:  Date: 3/15/2021

**REGISTRATION FORM**

**(FMVSS 213, S5.8)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/15/2021 |

| | |
|---|---|
| Model No.: | CF08500CVR |

| Requirement | Pass/Fail |
|---|---|
| The printed registration form accompanying the subject child restraint system and the electronic registration form were inspected and compared to the requirements of FMVSS No. 213 S5.8. | Fail (1)(2) |

The following failures were identified:

(1) S5.8.2(b) The registration website includes a "chat" feature in the lower-right corner of the screen.
(2) S5.8.2(c) The instructions for electronic registration require the user to "register online at: www.nunababy.com" and "Click on the 'Register Car Seat' link on the homepage."

Photographs of the registration form are included in Section 9.

Recorded by:  Date: 3/15/2021

## MAXIMUM CHILD WEIGHT FOR LOWER ANCHOR USE

## (S213, S5.5.2(l)(3))

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/15/2021 |

| | |
|---|---|
| Model No.: | CF08500CVR |

For child restraints manufactured on or after February 27, 2015:

| Installation Mode | A Max Child Weight is Required for this Installation Mode (Y or N) | Installation Diagram Shown (Y or N) | Max Child Weight Indicated on Installation Diagram (lb) |
|---|---|---|---|
| Rear Facing | N | N/A | N/A |
| Forward Facing | N/A | N/A | N/A |

| CRS Weight (lb) | Child Weight (CW) Calculation (lb) | Rounded CW Limit permitted under S5.5.2(l)(3)(i) |
|---|---|---|
| 21.6 | Rear Facing 60-CRS Weight = 38.4 | 40 |
| | Forward Facing 65-CRS Weight = N/A | N/A |

| Calculated CW | Rounded CW |
|---|---|
| 15 < CW ≤ 20 | 20 |
| 20 < CW ≤ 25 | 25 |
| 25 < CW ≤ 30 | 30 |
| 30 < CW ≤ 35 | 35 |
| 35 < CW ≤ 40 | 40 |
| 40 < CW ≤ 45 | 45 |
| 45 < CW ≤ 50 | 50 |
| 50 < CW ≤ 55 | 55 |
| 55 < CW ≤ 60 | 60 |

| Section | Requirement | Pass/Fail |
|---|---|---|
| S5.5.2(l)(3)(i) | A maximum child weight is required on an installation diagram when the CRS+child weight is greater than 65 lb for CRS that are used with the internal harness and installed with lower anchors. The maximum weight on the label conforms to the limits established in S5.5.2(l)(3)(i) | N/A |
| S5.5.2(l)(3)(ii) | For CRS that can be used both forward and rear-facing, either: (1) separate diagrams are provided and labeled; or (2) only one diagram is applicable, provided, and labeled; or (3) two diagrams are applicable and the diagram shown contains the lesser of the permitted weights | N/A |

Remarks:

Recorded by:  Date: 3/15/2021

**ATTACHMENT TO ANCHORAGE SYSTEM**

**(S213, S5.9)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/15/2021 |

| | |
|---|---|
| Model No.: | CF08500CVR |

| Section | Requirement | Pass/Fail |
|---|---|---|
| S5.9(a) | This add-on child restraint system (excluding car beds, harnesses, and belt-positioning seats) has a permanently attached anchorage system having components that enable the restraint to be securely fastened to the lower anchorages. | Pass |
| | The anchorage system has components which can only be removed with a tool, such as a screwdriver. | Pass |
| | Note: If this is a rear-facing child restraint system with a detachable base, then only the base is required to have the components. | Pass |
| S5.9(b) | This child restraint system has components for attaching the system to a tether anchorage, and those components include a tether hook that conforms to the configuration and geometry specified in Figure 22. | N/A |
| S5.9(c) | This child restraint system has adjustable components for attaching the system to a tether anchorage or to lower anchors to allow the restraint to be tightened to the vehicle. | Pass |
| S5.9(d) | If the anchorage system on this child restraint system has components, other than hooks, that enable the restraint to be securely fastened to the lower anchorages, it provides either an indication when each attachment to the lower anchorage becomes fully latched or attached, or provides a visual indication that all attachments to the lower anchorages are fully latched or attached. | Pass |
| | Visual indications are detectable under normal daylight lighting conditions. | Pass |

Remarks:

None

Recorded by:  Date: 3/15/2021

**INSTALLATION**

**(S213-S5.3)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/15/2021 |

| | |
|---|---|
| Model No.: | CF08500CVR |

| Section | Requirement | | | | | | Pass/Fail |
|---|---|---|---|---|---|---|---|
| S5.3.1 | Add-on child restraints meet either (a) or (b) as appropriate | | | | | | Pass |
| S5.3.1(a) | Except for components designed to attach a child restraint anchorage system, this add-on child restraint does not have any means designed for attaching the system to a vehicle seat cushion or vehicle seat back and any component (except belts) that is designed to be inserted between the vehicle seat cushion and vehicle seat back. | | | | | | Pass |
| S5.3.1(b) | Harnesses manufactured for use on school bus seats must meet S5.3.1(a) unless labeled appropriately. Refer to the labeling data sheet for the specific requirements. | | | | | | N/A |
| S5.3.2 | This child restraint system is capable of being installed as required by Table S5.3.2 of FMVSS No. 213. Shaded sections indicate installation means required by standard. | | | | | | |
| | | *Lap Belt* | *Lap Belt & Tether (if needed)* | *Lower Anchors* | *Lap & Shoulder Belt* | *Seat back Mount* | |
| | *Harnesses per S5.3.1(b)(1)-(3) and Fig. 12* | | | | | | N/A |
| | Other Harnesses | | | | | | N/A |
| | Car Beds | | | | | | N/A |
| | Rear-Facing Restraints | | | X | | | Fail (1) |
| | Belt Positioning Seats | | | | | | N/A |
| | Other | | | | | | N/A |
| S5.3.3 | If a car bed, this child restraint system is designed to be installed laterally. | | | | | | N/A |

The following failures were identified:

*(1) S.5.3.2: See NHTSA Interpretation letter supporting this failure at:*

https://www.nhtsa.gov/interpretations/571213-detachable-base-crs3

Remarks:

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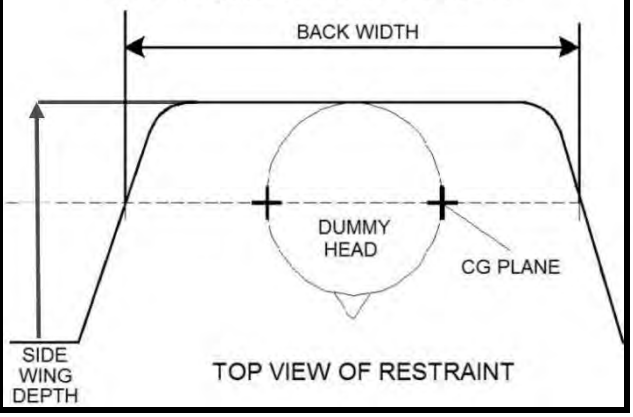
**MINIMUM HEAD SUPPORT SURFACE**

**(FMVSS 213, S5.2.1)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/15/2021 |

| | |
|---|---|
| Model No.: | CF08500CVR |

| Section | Requirement | | |
|---|---|---|---|
| S5.2.1.2 | The child restraint system is exempt from S5.2.1.1 if it is a forward facing restraint and the target points on either side of the dummy's head (using the largest test dummy specified in S7, excluding the 6-year-old) is below the top of the test seat. | | |
| S5.2.1.1.(a) | **Maximum Recommended Child Weight** | **Minimum Seat Back Height Required** | SEAT BACK WIDTH MEASUREMENT |
| | ≤ 18 kg (39.7 lb) | 500 mm (19.7 in) | |
| | > 18 kg (39.7 lb) | 560 mm (22.0 in) | |
| S5.2.1.1(b) | **Side Wing Depth** | **Minimum Back Support Width** | |
| | < 102 mm (4.0 in) | 203 mm (8.0 in) | |
| | ≥ 102 mm (4.0 in) | 152 mm (6.0 in) | |




The child restraint system is **exempt** from S5.2.1.1 NO

| Back Support Height | | |
|---|---|---|
| Manufacturer's Recommended Maximum Child Weight kg (lb) | Measured Height mm (in) | Pass/Fail |
| 14.5 (32) | 520 (20.5) | Pass |

| Back Support Width | | |
|---|---|---|
| Measured Side Wing Depth mm (in) | Measured Width mm (in) | Pass/Fail |
| 65 (2.6) | 225 (8.9) | Pass |

Remarks:

None

Recorded by: _____ Date: 3/15/2021

**TORSO IMPACT PROTECTION**

**(FMVSS 213, S5.2.2)**

| | |
|---|---|
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| Test Date: | 3/15/2021 |

| | |
|---|---|
| Model No.: | CF08500CVR |

| Section | Surface Requirement | Contour Requirement | Other Requirement |
|---|---|---|---|
| S5.2.2.1(a) | Back Support Surface | flat or concave | Continuous surface area of ≥ 85 in² |
| S5.2.2.1(b) | Side Support Surface | flat or concave | Continuous surface area of ≥ 24 in² for restraints having a recommended child weight ≥ 20 lb |
| | | flat or concave | Continuous surface area of ≥ 48 in² for restraints having a recommended child weight < 20 lb |
| S5.2.2.1(c) | Horizontal Cross Sections of Surfaces Restraining Torso Forward Movement | flat or concave | |
| | Vertical Longitudinal Cross Sections of Surfaces Restraining Torso Forward Movement | flat or convex | Radius of curvature ≥ 2 in |
| S5.2.2.2 | Fixed or movable surface forward of dummy | | Must be used to restrain dummy and allow compliance with injury & excursion criteria |

**Support Surface- Results**

| Surface | Contour | Measured Area | Pass/Fail |
|---|---|---|---|
| Back Support Surface | Concave | ≥ 85 in² | Pass |
| Side Support Surface | Flat | ≥ 24 in² | Pass |

**Surfaces Restraining Torso Forward Movement- Results**

| | Contour | Radius of Curvature | Pass/Fail |
|---|---|---|---|
| Horizontal Cross Section | N/A | N/A | Pass |
| Vertical Cross Section | N/A | N/A | Pass |

**Fixed or Movable Surfaces Forward of Dummy- Results**

| Yes/No | Pass/Fail |
|---|---|
| No | Pass |

Remarks:

None

Recorded by:  Date: 3/15/2021

**PROTRUSION LIMITATION**

**(FMVSS 213, S5.2.4)**

| | |
|---|---|
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| | |
|---|---|
| Model No.: | CF08500CVR |

S5.2.4. Any portion of a rigid structural component within or underlying a contactable surface is subject to the protrusion limitations described below.

| Test | Compliance Requirement | Result | Pass/Fail |
|---|---|---|---|
| Height | ≤ 3/8 in. (9.53 mm) | ≤ 3/8 in. (9.53 mm) | Pass |
| Edge Radius | ≥ 1/4 in. (6.35 mm) | ≥ 1/4 in. (6.35 mm) | Pass |

Remarks:

None

Recorded by: _____ Date: 3/15/2021

**DYNAMIC IMPACT TEST CONDITIONS - TEST 1**

**(FMVSS 213, S6.1)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102F |
| Item Code | 033-NCF08500C-01-NINRFB2FR |

Pulse:

| | |
|---|---|
| Test Configuration (I or II) | I |
| Nominal Velocity (km/h) | 48 (+0/-3) |

Laboratory Ambient Conditions During Testing:

| | |
|---|---|
| Temperature (ºC) | 21.9 |
| Relative Humidity (%) | 28 |

Dummy:

| | |
|---|---|
| Dummy Description | CAMI Newborn (Part 572K) |
| Dummy Serial Number | 003 |

Restraint Installation:

| | |
|---|---|
| Installed Direction | Rear-Facing |
| Base Usage | With Base |
| Attachment Method | Lap Belt |
| Tether Usage | No |
| Seat Back Position | Reclined |
| Shoulder Harness Position | Slot 1 of 3, Position 1 as Lowest |
| Recline Position | Position 2 of 2, Position 1 as Most Upright |
| Positioning Pillow | Installed |
| Lock-Offs Used | Center |
| Shoulder Belt Routing | Shortened Routing |

Remarks:

Pre-test and post-test photographs are presented in Section 9.

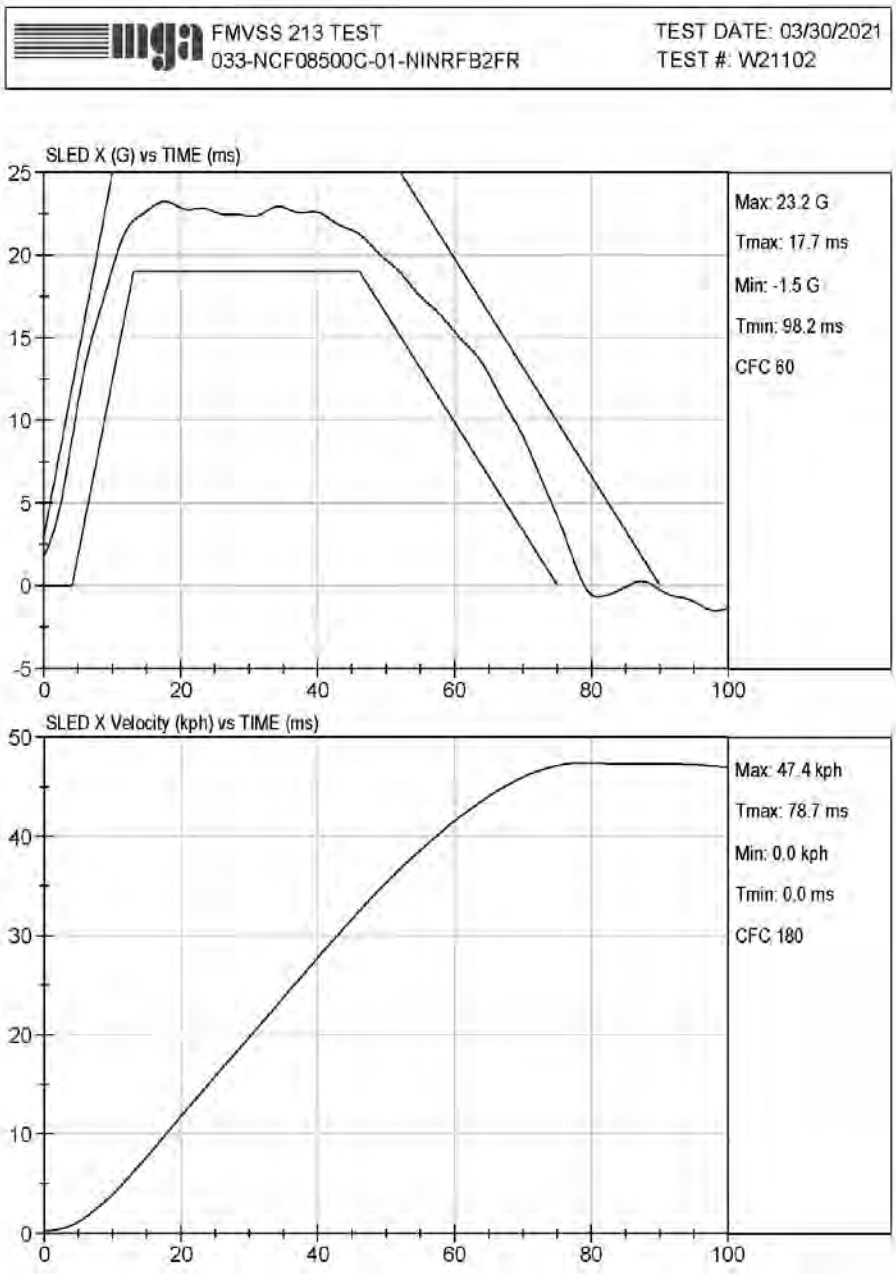
Recorded by: David Nguyen Date: 3/30/2021

**DYNAMIC IMPACT SLED PULSE - TEST 1**

**(FMVSS 213, S6.1)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102F |
| Item Code | 033-NCF08500C-01-NINRFB2FR |



**BELT RESTRAINT - TEST 1**

**(FMVSS 213, S5.4.3)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102F |
| Item Code | 033-NCF08500C-01-NINRFB2FR |

| Section | Requirement | Pass/Fail |
|---|---|---|
| S5.4.3.1 | **Snug Fit of Belts**. Belts that are part of the restraint and designed to restrain the child are adjustable to snugly fit any child of height and weight identified by the manufacturer in accordance with the manufacturer's installation instructions. | Pass |

| Section | Requirement | Yes/No | Pass/Fail |
|---|---|---|---|
| S5.4.3.2 | **Direct Restraint**. Belts impose no loads on the child resulting from the mass of the system or the test seat. | | Pass |
| | This restraint has one or more belts that contact the dummy for restraint. | No | If all are "yes," restraint fails S5.4.3.2. |
| | This restraint has a rigid structure behind the dummy. | Yes | |
| | The restraint could move relative to the belt. | No | |

| Section | Requirement | Pass/Fail |
|---|---|---|
| S5.4.3.3 | **Seating Systems**. Except for harnesses and infant restraints for children up to 10 kg (22 lb), each restraint designed for a child in a seated position and having belts shall provide: | Pass |
| S5.4.3.3(a) | Upper torso restraint (either belts or a shield) | Pass |
| S5.4.3.3(b) | Lower torso restraint (either belts or a shield) | Pass |
| S5.4.3.3(c) | Crotch restraint (either a belt attached to the lap belt or a shield) | Pass |

| Section | Requirement | Pass/Fail |
|---|---|---|
| S5.4.3.4 | **Harnesses**. Each harness shall: | N/A |
| S5.4.3.3(a) | Provide upper torso restraint | N/A |
| S5.4.3.3(b) | Provide lower torso restraint (lap and crotch restraint) | N/A |
| S5.4.3.3(c) | Prevent standing | N/A |

Remarks:

None

**BUCKLE RELEASE - TEST 1**

**(FMVSS 213, S5.4.3.5, S6.2)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102F |
| Item Code | 033-NCF08500C-01-NINRFB2FR |

| Section | Requirement | Measurement | Pass/Fail |
|---|---|---|---|
| S5.4.3.5(a) | **Pre-Impact Release Force**— Releases under 40-62 N (9-14 lb) | L: 52 N (11.7 lb)<br>R: 52 N (11.7 lb) | Pass (1) |
| S5.4.3.5(b) | **Post-Impact Release Force***— Releases ≤ 71 N (16 lb) | L: 54 N (12.1 lb)<br>R: 54 N (12.1 lb) | Pass (1) |
| S5.4.3.5(c) | **Minimum Surface Area of Buckle**- ≥ 0.6 $in^2$ (3.9 $cm^2$) | 0.8 $in^2$ (5.2 $cm^2$) | Pass |
| S5.4.3.5(e) | **Buckle Integrity** Shall not release during testing | No Release | Pass |

*Not applicable unless determined using the largest test dummy specified in S7 for use in testing the seat.

Remarks:

(1) The buckle is comprised of right and left buckle tangs that do not always release at the same force.

**SYSTEM INTEGRITY - TEST 1**

**(FMVSS 213, S5.1.1)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102F |
| Item Code | 033-NCF08500C-01-NINRFB2FR |

S5.1.1 When dynamically tested, the child restraint system shall:

| Section | Requirement | Pass/Fail |
|---|---|---|
| S5.1.1(a) | **Structural Integrity-** Exhibit no complete separation of any load bearing structural element | Pass |
| | Exhibit no partial separation exposing surfaces with a radius of less than ¼ in (9.53 mm) | Pass |
| | Exhibit no partial separation exposing surfaces with protrusions greater than 3/8 in (6.35 mm) | Pass |
| S5.1.1(b)(1) | **Adjustment Position-** Remain in the same adjustment position during the test that it was in immediately before the test | Pass |
| S5.1.1(b)(2)(ii) | **Exposed Openings-** Have no exposed opening larger than ¼ inch (9.53 mm) before the test become smaller during the testing as a result of the movement of the seating surface relative to the restraint system as a whole | Pass |
| S5.1.1(c) | **Seating Surface Angle-** Forward facing restraints do not allow the angle between the system's back support surface and seating surface to be less than 45 degrees at the completion of the test. | N/A |

Remarks:

None

**OCCUPANT EXCURSION - TEST 1**

**(FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102F |
| Item Code | 033-NCF08500C-01-NINRFB2FR |

FORWARD-FACING RESTRAINTS

| Section | Requirement | Measurement | Pass/Fail |
|---|---|---|---|
| S5.1.3.1 | ***Torso retention***—CRS shall retain the torso within system | | N/A |
| S5.1.3.1(a)(1) | ***Head excursion***-<br>≤ 720 mm (28 in) with tether<br>≤ 813 mm (32 in) no tether | N/A | N/A |
| S5.1.3.1(a)(2) | ***Knee target excursion***-<br>≤ 915 mm (36 in) | N/A | N/A |
| S5.2.1.1(c) | ***Head-torso angle***-<br>rearward change ≤ 45º | N/A | N/A |

REAR-FACING RESTRAINTS

| Section | Requirement | Measurement | Pass/Fail |
|---|---|---|---|
| S5.1.3.2 | ***Torso retention***—CRS shall retain the torso within system | | Pass |
| S5.1.3.2 | ***Head target excursion***-Not beyond restraint's top and forward edge | | Pass |
| S5.1.4 | ***Back support angle***-<br>Angle between the back support surface and the vertical ≤ 70º | 57º | Pass |
| S5.2.1.1(c) | ***Head-torso angle***-<br>rearward change ≤ 45º | ≤ 45º | Pass |

Remarks:

Excursion camera locations (distance forward of point Z) = 813 mm, camera speeds = 1,000 frames per second, and lens focal lengths = 15 mm.

Recorded by: David Nguyen Date: 3/30/2021

## DYNAMIC IMPACT TEST CONDITIONS - TEST 2

## (FMVSS 213, S6.1)

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102R |
| Item Code | 033-NCF08500C-02-12CRFBLFR |

Pulse:

| | |
|---|---|
| Test Configuration (I or II) | I |
| Nominal Velocity (km/h) | 48 (+0/-3) |

Laboratory Ambient Conditions During Testing:

| | |
|---|---|
| Temperature (ºC) | 21.5 |
| Relative Humidity (%) | 28 |

Dummy:

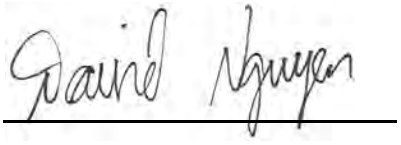
| | |
|---|---|
| Dummy Description | CRABI 12 Month Old (Part 572R) |
| Dummy Serial Number | 082 |

Restraint Installation:

| | |
|---|---|
| Installed Direction | Rear-Facing |
| Base Usage | Optional Base |
| Attachment Method | Lower Anchors |
| Tether Usage | No |
| Seat Back Position | Reclined |
| Shoulder Harness Position | Slot 3 of 3, Position 1 as Lowest |
| Buckle Harness Position | Slot 1 of 1, Position 1 as Innermost |
| Recline Position | Position 2 of 2, Position 1 as Most Upright |
| Positioning Pillow | Removed |
| Lock-Offs Used | Center |
| Shoulder Belt Routing | Extended Routing |

Remarks:

Pre-test and post-test photographs are presented in Section 9.

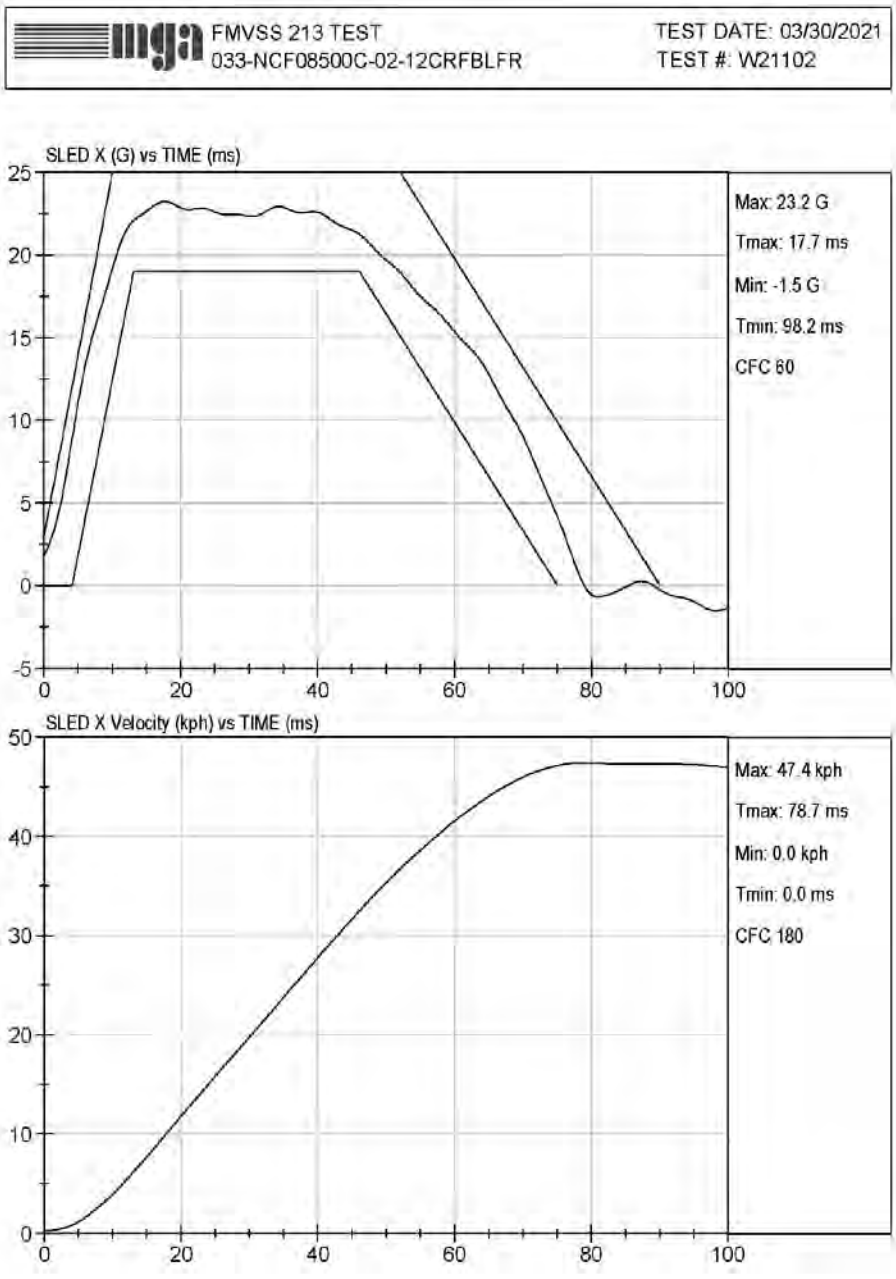
Recorded by:  Date: 3/30/2021

**DYNAMIC IMPACT SLED PULSE - TEST 2**

**(FMVSS 213, S6.1)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102R |
| Item Code | 033-NCF08500C-02-12CRFBLFR |



**BELT RESTRAINT - TEST 2**

**(FMVSS 213, S5.4.3)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102R |
| Item Code | 033-NCF08500C-02-12CRFBLFR |

| Section | Requirement | Pass/Fail |
|---|---|---|
| S5.4.3.1 | **Snug Fit of Belts**. Belts that are part of the restraint and designed to restrain the child are adjustable to snugly fit any child of height and weight identified by the manufacturer in accordance with the manufacturer's installation instructions. | Pass |

| Section | Requirement | Yes/No | Pass/Fail |
|---|---|---|---|
| S5.4.3.2 | **Direct Restraint**. Belts impose no loads on the child resulting from the mass of the system or the test seat. | | Pass |
| | This restraint has one or more belts that contact the dummy for restraint. | No | If all are "yes," restraint fails S5.4.3.2. |
| | This restraint has a rigid structure behind the dummy. | Yes | |
| | The restraint could move relative to the belt. | No | |

| Section | Requirement | Pass/Fail |
|---|---|---|
| S5.4.3.3 | **Seating Systems**. Except for harnesses and infant restraints for children up to 10 kg (22 lb), each restraint designed for a child in a seated position and having belts shall provide: | Pass |
| S5.4.3.3(a) | Upper torso restraint (either belts or a shield) | Pass |
| S5.4.3.3(b) | Lower torso restraint (either belts or a shield) | Pass |
| S5.4.3.3(c) | Crotch restraint (either a belt attached to the lap belt or a shield) | Pass |

| Section | Requirement | Pass/Fail |
|---|---|---|
| S5.4.3.4 | **Harnesses**. Each harness shall: | N/A |
| S5.4.3.3(a) | Provide upper torso restraint | N/A |
| S5.4.3.3(b) | Provide lower torso restraint (lap and crotch restraint) | N/A |
| S5.4.3.3(c) | Prevent standing | N/A |

Remarks:

None

Recorded by: David Nguyen Date: 3/30/2021

**BUCKLE RELEASE - TEST 2**

**(FMVSS 213, S5.4.3.5, S6.2)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102R |
| Item Code | 033-NCF08500C-02-12CRFBLFR |

| Section | Requirement | Measurement | Pass/Fail |
|---|---|---|---|
| S5.4.3.5(a) | **Pre-Impact Release Force**— Releases under 40-62 N (9-14 lb) | L: 55 N (12.4 lb)<br>R: 55 N (12.4 lb) | Pass (1) |
| S5.4.3.5(b) | **Post-Impact Release Force***— Releases ≤ 71 N (16 lb) | L: 56 N (12.6 lb)<br>R: 56 N (12.6 lb) | Pass (1) |
| S5.4.3.5(c) | **Minimum Surface Area of Buckle**- ≥ 0.6 $in^2$ (3.9 $cm^2$) | 0.8 $in^2$ (5.2 $cm^2$) | Pass |
| S5.4.3.5(e) | **Buckle Integrity** Shall not release during testing | No Release | Pass |

*Not applicable unless determined using the largest test dummy specified in S7 for use in testing the seat.

Remarks:

(1) The buckle is comprised of right and left buckle tangs that do not always release at the same force.

Recorded by: David Nguyen Date: 3/30/2021

**SYSTEM INTEGRITY - TEST 2**

**(FMVSS 213, S5.1.1)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102R |
| Item Code | 033-NCF08500C-02-12CRFBLFR |

S5.1.1 When dynamically tested, the child restraint system shall:

| Section | Requirement | Pass/Fail |
|---|---|---|
| S5.1.1(a) | **Structural Integrity-** Exhibit no complete separation of any load bearing structural element | Pass |
| | Exhibit no partial separation exposing surfaces with a radius of less than ¼ in (9.53 mm) | Pass |
| | Exhibit no partial separation exposing surfaces with protrusions greater than 3/8 in (6.35 mm) | Pass |
| S5.1.1(b)(1) | **Adjustment Position-** Remain in the same adjustment position during the test that it was in immediately before the test | Pass |
| S5.1.1(b)(2)(ii) | **Exposed Openings-** Have no exposed opening larger than ¼ inch (9.53 mm) before the test become smaller during the testing as a result of the movement of the seating surface relative to the restraint system as a whole | Pass |
| S5.1.1(c) | **Seating Surface Angle-** Forward facing restraints do not allow the angle between the system's back support surface and seating surface to be less than 45 degrees at the completion of the test. | N/A |

Remarks:

None

Recorded by: David Nguyen Date: 3/30/2021

**INJURY CRITERIA - TEST 2**

**(FMVSS 213, S5.1.2)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102R |
| Item Code | 033-NCF08500C-02-12CRFBLFR |

| Section | Requirement |
|---|---|
| S5.1.2.1(a) | **Head Injury Criterion**- The maximum calculated head injury criterion for a 36 millisecond time interval (HIC36) shall not exceed 1,000. HIC is not calculated when using the 6-year-old weighted and 10-year-old test dummies. |
| S5.1.2.1(b) | **Chest Injury Criterion**- The chest acceleration shall not exceed 60g for intervals whose cumulative duration is more than 3 milliseconds. |

**Head Injury Criterion Results**

| Calculated HIC36 | Pass/Fail |
|---|---|
| 729 | Pass |

**Chest Injury Criterion Results**

| Max acceleration lasting 3 ms (g) | Pass/Fail |
|---|---|
| 51 | Pass |

Remarks:

None

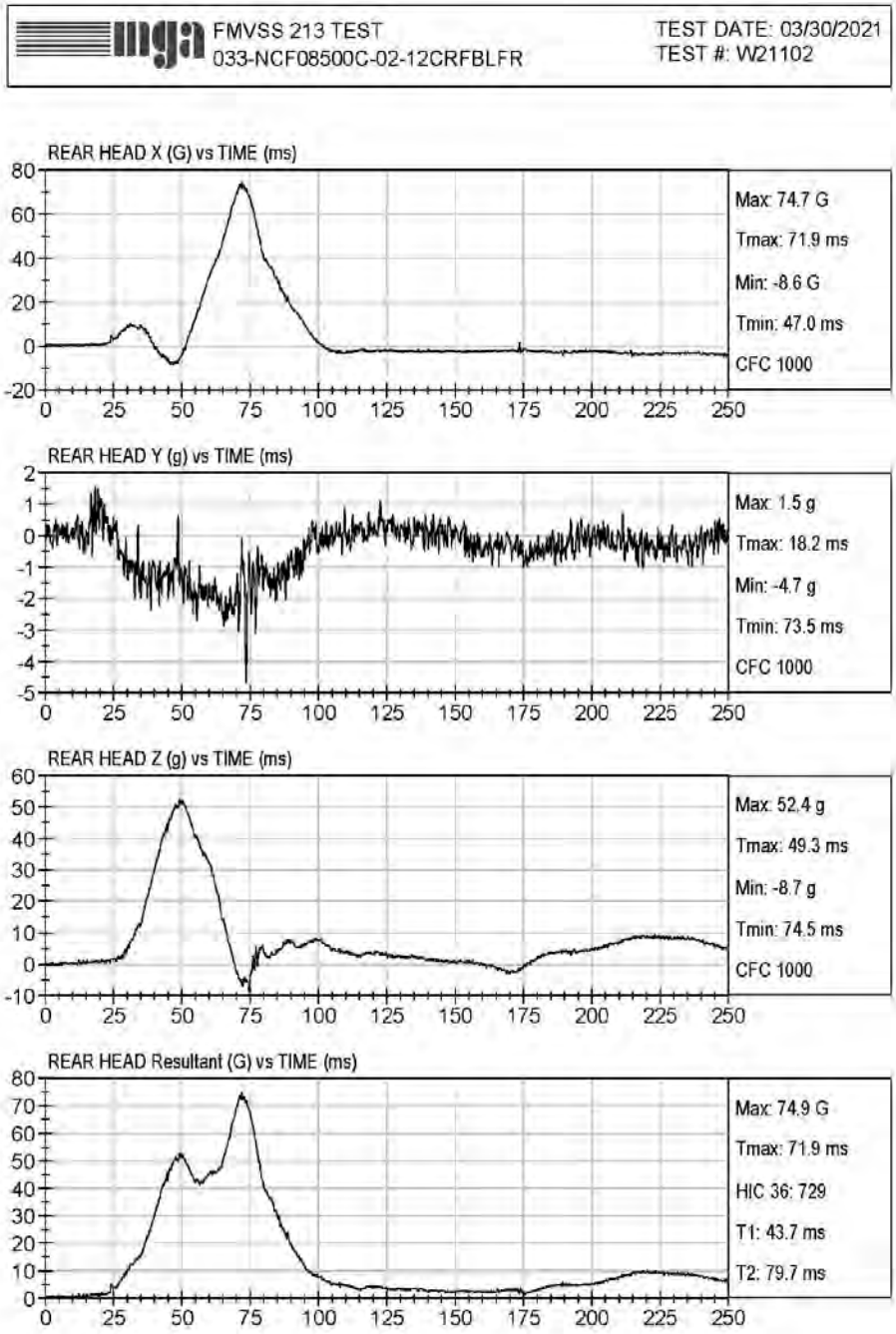
Recorded by: David Nguyen Date: 3/30/2021

**INJURY CRITERIA - HEAD ACCELERATION PLOTS - TEST 2**

**(FMVSS 213, S5.1.2)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102R |
| Item Code | 033-NCF08500C-02-12CRFBLFR |

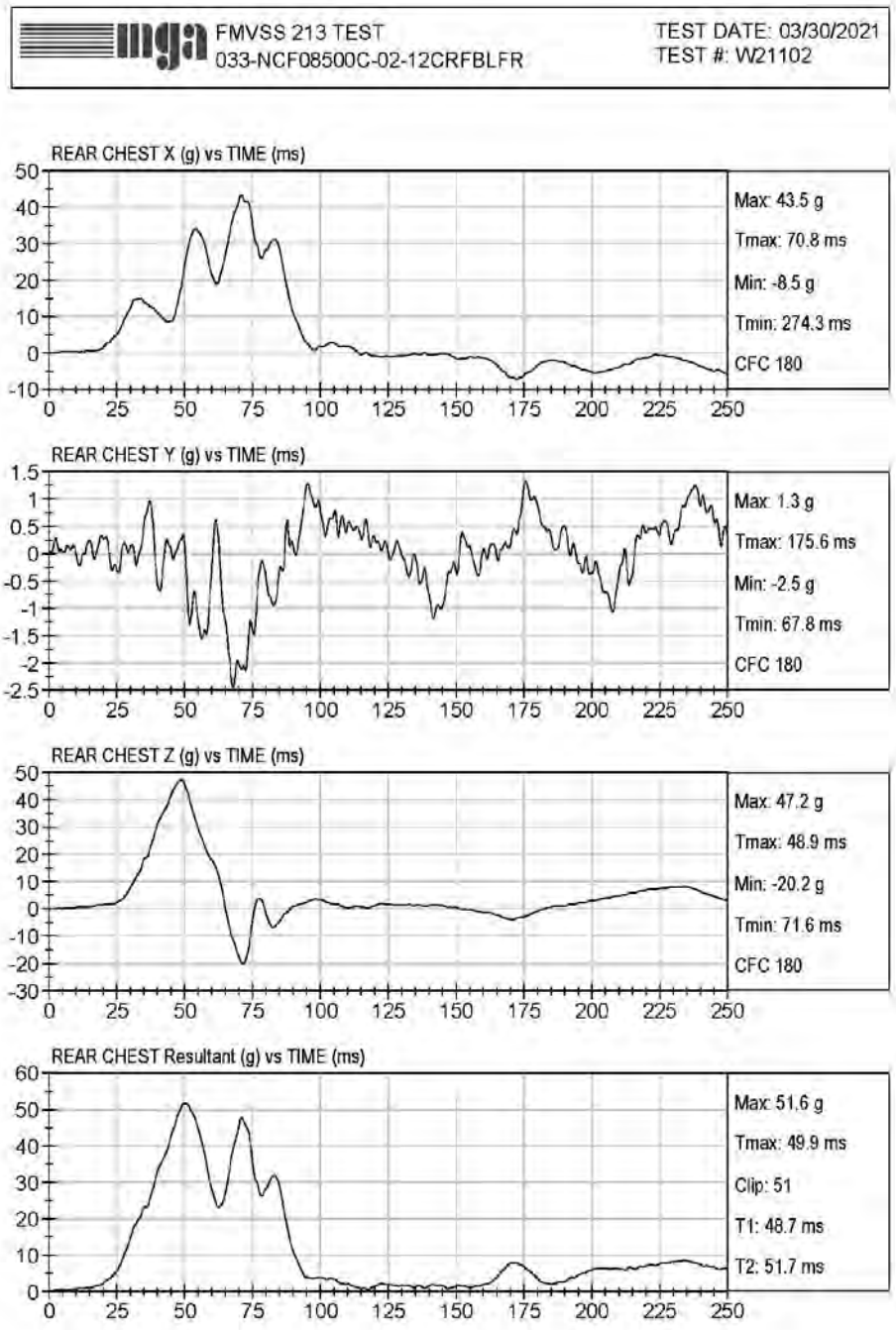


**INJURY CRITERIA - CHEST ACCELERATION PLOTS - TEST 2**

**(FMVSS 213, S5.1.2)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102R |
| Item Code | 033-NCF08500C-02-12CRFBLFR |



**OCCUPANT EXCURSION - TEST 2**

**(FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/30/2021 |

| | |
|---|---|
| Sled Test No. | W21102R |
| Item Code | 033-NCF08500C-02-12CRFBLFR |

FORWARD-FACING RESTRAINTS

| Section | Requirement | Measurement | Pass/Fail |
|---|---|---|---|
| S5.1.3.1 | ***Torso retention***—CRS shall retain the torso within system | | N/A |
| S5.1.3.1(a)(1) | ***Head excursion***-<br>≤ 720 mm (28 in) with tether<br>≤ 813 mm (32 in) no tether | N/A | N/A |
| S5.1.3.1(a)(2) | ***Knee target excursion***-<br>≤ 915 mm (36 in) | N/A | N/A |
| S5.2.1.1(c) | ***Head-torso angle***-<br>rearward change ≤ 45º | N/A | N/A |

REAR-FACING RESTRAINTS

| Section | Requirement | Measurement | Pass/Fail |
|---|---|---|---|
| S5.1.3.2 | ***Torso retention***—CRS shall retain the torso within system | | Pass |
| S5.1.3.2 | ***Head target excursion***-Not beyond restraint's top and forward edge | | Pass |
| S5.1.4 | ***Back support angle***-<br>Angle between the back support surface and the vertical ≤ 70º | 57º | Pass |
| S5.2.1.1(c) | ***Head-torso angle***-<br>rearward change ≤ 45º | ≤ 45º | Pass |

Remarks:

Excursion camera locations (distance forward of point Z) = 813 mm, camera speeds = 1,000 frames per second, and lens focal lengths = 15 mm.

.

Recorded by: David Nguyen

Date: 3/30/2021

**AIRCRAFT PASSENGER SEAT INVERSION - TEST A**

**(FMVSS 213, S8.2, S8.2.5, S8.2.6)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/31/2021 |

| | |
|---|---|
| Test No. | A |
| Item Code | 033-NCF08500C-Inv01-NINRFB2FR |

Dummy:

| | |
|---|---|
| Dummy Description | CAMI Newborn (Part 572K) |
| Dummy Serial Number | 003 |

Restraint Installation:

| | |
|---|---|
| Installed Direction | Rear-Facing |
| Base Usage | With Base |
| Attachment Method | Lap Belt |
| Tether Usage | No |
| Seat Back Position | Reclined |
| Shoulder Harness Position | Slot 1 of 3, Position 1 as Lowest |
| Buckle Harness Position | Fixed |

ROTATION ABOUT Y-AXIS (FORWARD)

| Section | Requirement | Pass/Fail |
|---|---|---|
| S8.2.5 | The test dummy shall be retained within the CRS | Pass |
| S8.2.5 | The CRS shall be retained within the aircraft seat | Pass |

ROTATION ABOUT X-AXIS (LATERAL)

| Section | Requirement | Pass/Fail |
|---|---|---|
| S8.2.6 | The test dummy shall be retained within the CRS | Pass |
| S8.2.6 | The CRS shall be retained within the aircraft seat | Pass |

Remarks:

None

Recorded by:  Date: 3/31/2021

**AIRCRAFT PASSENGER SEAT INVERSION - TEST B**

**(FMVSS 213, S8.2, S8.2.5, S8.2.6)**

| | |
|---|---|
| Report No.: | 213-MGA-21-033 |
| Test Date: | 3/31/2021 |

| | |
|---|---|
| Test No. | B |
| Item Code | 033-NCF08500C-Inv02-12CRFB2FR |

Dummy:

| | |
|---|---|
| Dummy Description | CRABI 12 Month Old (Part 572R) |
| Dummy Serial Number | 082 |

Restraint Installation:

| | |
|---|---|
| Installed Direction | Rear-Facing |
| Base Usage | With Base |
| Attachment Method | Lap Belt |
| Tether Usage | No |
| Seat Back Position | Reclined |
| Shoulder Harness Position | Slot 3 of 3, Position 1 as Lowest |
| Buckle Harness Position | Fixed |

ROTATION ABOUT Y-AXIS (FORWARD)

| Section | Requirement | Pass/Fail |
|---|---|---|
| S8.2.5 | The test dummy shall be retained within the CRS | Pass |
| S8.2.5 | The CRS shall be retained within the aircraft seat | Pass |

ROTATION ABOUT X-AXIS (LATERAL)

| Section | Requirement | Pass/Fail |
|---|---|---|
| S8.2.6 | The test dummy shall be retained within the CRS | Pass |
| S8.2.6 | The CRS shall be retained within the aircraft seat | Pass |

Remarks:

None

Recorded by:  Date: 3/31/2021

## SECTION 6

## INTERPRETATION AND/OR DEVIATIONS FROM FMVSS 213

There were no deviations from FMVSS 213.

## SECTION 7
## TEST CONFIGURATION CODES

The following table explains the code used to describe the test configurations in this report. For example, the test configuration code 12CFFNLFU indicates that the child restraint sled test was conducted using a 12-month old CRABI dummy, installed in the forward facing direction with no optional base, the latch system, no tether, and in the upright position.

| | |
|---|---|
| **Dummy Description** | **NIN** – Newborn Infant, CAMI |
| | **12C** – 12 MO, CRABI |
| | **3H3** – 3 YO, Hybrid III |
| | **6H2** – 6YO Hybrid II |
| | **6H3** – 6YO, Hybrid III |
| | **6W3** – 6 YO, Weighted Hybrid III |
| | **TH3** – 10 YO, Hybrid III |
| **Installed Direction** | **RF** – Rear Facing |
| | **FF** – Forward Facing |
| | **SF** – Faces Sideways (Carbeds) |
| **Base Usage** | **B** – Optional Base Used with Infant CRS |
| | **N** – All Other Configurations |
| **Attachment Method** | **L** – Lower Anchors |
| | **2** – Lap Belt |
| | **3** – Lap and Shoulder Belt |
| | **M** – Seat Back Mount |
| **Tether Usage** | **T** – Tether |
| | **F** – Tether Free |
| **Seat Back Position** | **U** – Upright |
| | **R** – Reclined |
| | **B** – Backless |
| | **F** – Fixed Back |
| | **N** – Non Applicable |

# SECTION 8
# INSTRUMENTATION CALIBRATION

## CERTIFICATION INSTRUMENTATION

| Sled Accelerometers | S/N | Manufacturer | Model Number | Calibration Date | Due Date |
|---|---|---|---|---|---|
| Primary | 1365905 | Honeywell | JTF 060-F482-05 | 3/15/21 | 9/14/21 |
| Redundant | 1498668 | Honeywell | JTF 060-F482-05 | 3/15/21 | 9/14/21 |

| Temperature/Humidity Logger | S/N | Manufacturer | Model Number | Calibration Date | Due Date |
|---|---|---|---|---|---|
| Accuracy 0.5°F, 2% RH | 15212045 | Vaisala | SP-2000-20R | 2/23/21 | 2/23/22 |

| Force Gauge | S/N | Manufacturer | Model Number | Calibration Date | Due Date |
|---|---|---|---|---|---|
| 100 lb, Accuracy ± 0.1 lb | 310799 | Wagner | FDIX 100 | 2/12/21 | 8/14/21 |

| Scale | S/N | Manufacturer | Model Number | Calibration Date | Due Date |
|---|---|---|---|---|---|
| 100 lb, Accuracy ± 0.1 lb | 138979 | Rice Lake | IQ+355 | 1/4/21 | 7/6/21 |

| Inclinometer | S/N | Manufacturer | Model Number | Calibration Date | Due Date |
|---|---|---|---|---|---|
| Accuracy ± 0.1° | 18031208 | Generic | Pro 360 | 12/17/20 | 6/18/21 |

| Caliper | S/N | Manufacturer | Model Number | Calibration Date | Due Date |
|---|---|---|---|---|---|
| 6 in, Accuracy ± .001in | 5389443 | Mitutoyo | 500-171-20 | 10/26/20 | 10/26/21 |

| Tape Measure | S/N | Manufacturer | Model Number | Calibration Date | Due Date |
|---|---|---|---|---|---|
| 3.5 m/12 ft | 830 | Stanley | Powerlock | 4/7/21 | 4/7/22 |

| DAS | S/N | Manufacturer | Model Number | Calibration Date | Due Date |
|---|---|---|---|---|---|
| Rack | DR0507 | DTS | TDAS Pro | 12/11/20 | 12/11/21 |
| SIM | DM1806 | DTS | TDAS Pro | 12/11/20 | 12/11/21 |
| SIM | DM1820 | DTS | TDAS Pro | 8/25/20 | 8/25/21 |

**TEST DUMMY INSTRUMENTATION**

**SERIAL NUMBER 082**

| Sensor | | S/N | Manufacturer | Model Number | Calibration Date | Due Date |
|---|---|---|---|---|---|---|
| Head Accelerometers | X | P94852 | Endevco | 7264C-2KTZ-360 | 3/12/21 | 9/11/21 |
| | Y | T24805 | Endevco | 7264CM47-2KTZ-360 | 3/12/21 | 9/11/21 |
| | Z | T24808 | Endevco | 7264CM47-2KTZ-360 | 3/12/21 | 9/11/21 |
| Chest Accelerometers | X | T24940 | Endevco | 7264CM47-2KTZ-360 | 3/12/21 | 9/11/21 |
| | Y | T24963 | Endevco | 7264CM47-2KTZ-360 | 3/12/21 | 9/11/21 |
| | Z | T24965 | Endevco | 7264CM47-2KTZ-360 | 3/12/21 | 9/11/21 |

## SECTION 9
## PHOTOGRAPHS

SLED BUCK - STANDARD BENCH SEAT AND CONFIGURATION
Report No.: 213-MGA-21-032
Item Code: 032-NCF085086-01-12CRFB2FR Item Code: 032-NCF085086-02-NINRFB2FR







mga research corporation
sled test facility
W21117F
mga research corporation
PRE-TEST
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PRE-TEST
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W21117F
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PRE-TEST
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W21117F
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W21117R
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POST-TEST
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POST-TEST
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PRE-TEST
NB - Y-AXIS

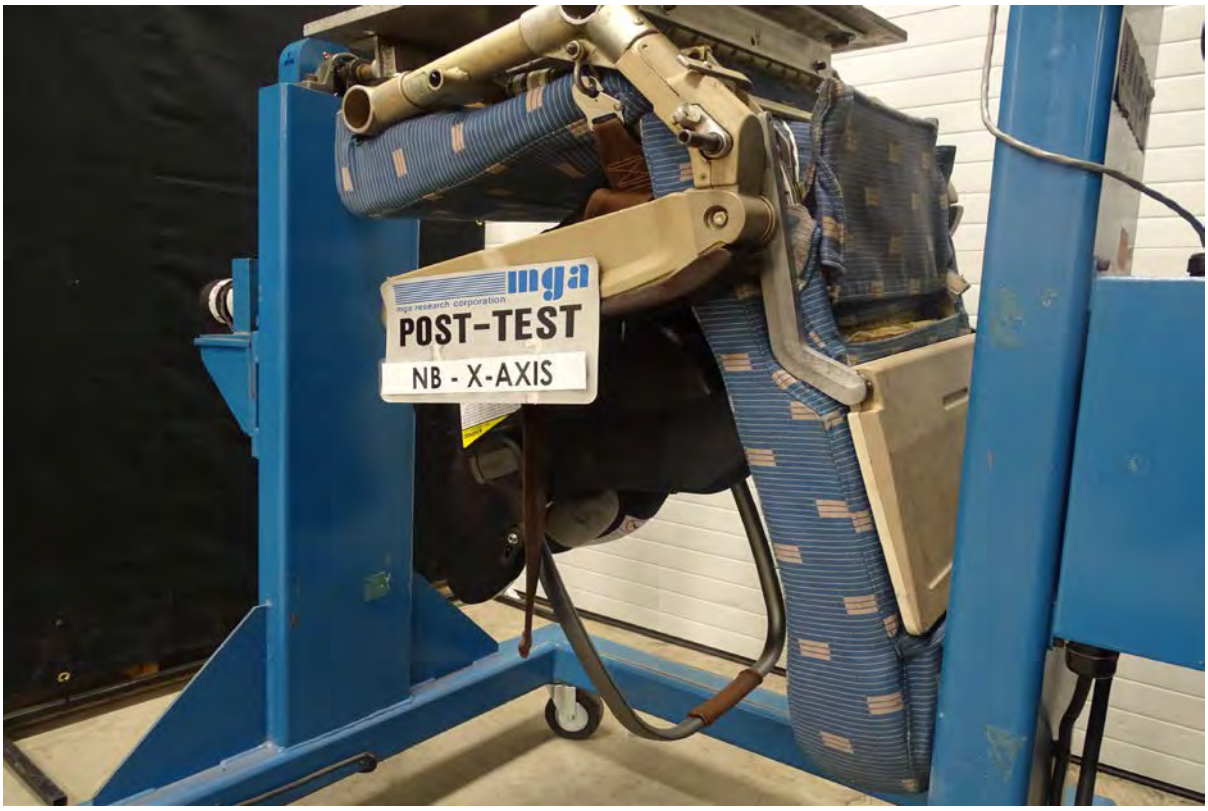

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PRE-TEST
NB - Y-AXIS


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NB - Y-AXIS


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POST-TEST
NB - Y-AXIS


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PRE-TEST
NB - X-AXIS


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NB - X-AXIS


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POST-TEST
NB - X-AXIS


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PRE-TEST
12 MO - Y-AXIS


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POST-TEST
12 MO - Y-AXIS


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12 MO - X-AXIS


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POST-TEST
12 MO - X-AXIS


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POST-TEST
12 MO - X-AXIS

INSPECTION

Item Code: 032-NCF085086-01-12CRFB2FR




Item Code: 032-NCF085086-02-NINRFB2FR



Item Code: 032-NCF085086-01-12CRFB2FR




Item Code: 032-NCF085086-02-NINRFB2FR



Item Code: 032-NCF085086-01-12CRFB2FR




Item Code: 032-NCF085086-02-NINRFB2FR



INSPECTION

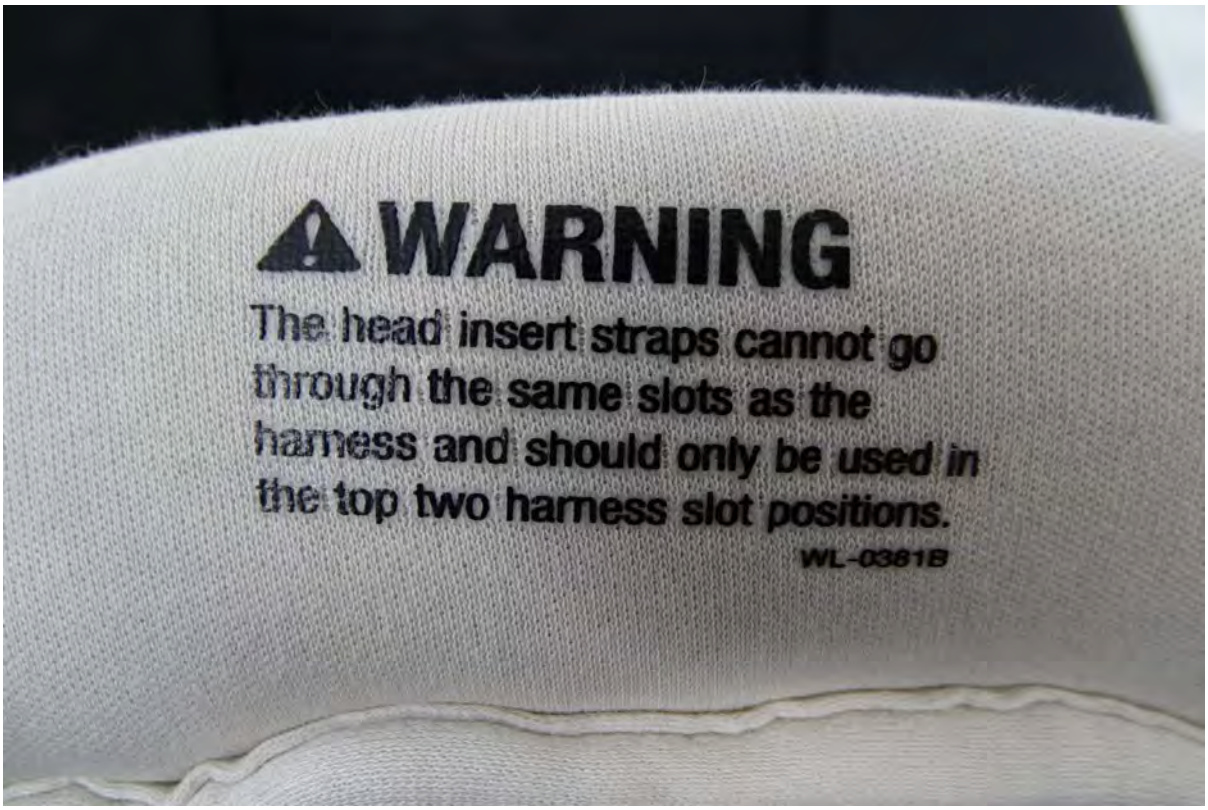
Item Code: 032-NCF085086-01-12CRFB2FR




Item Code: 032-NCF085086-02-NINRFB2FR




chest clip at
armpit level
rear facing
harness at or
just below shoulders
WL-0388A

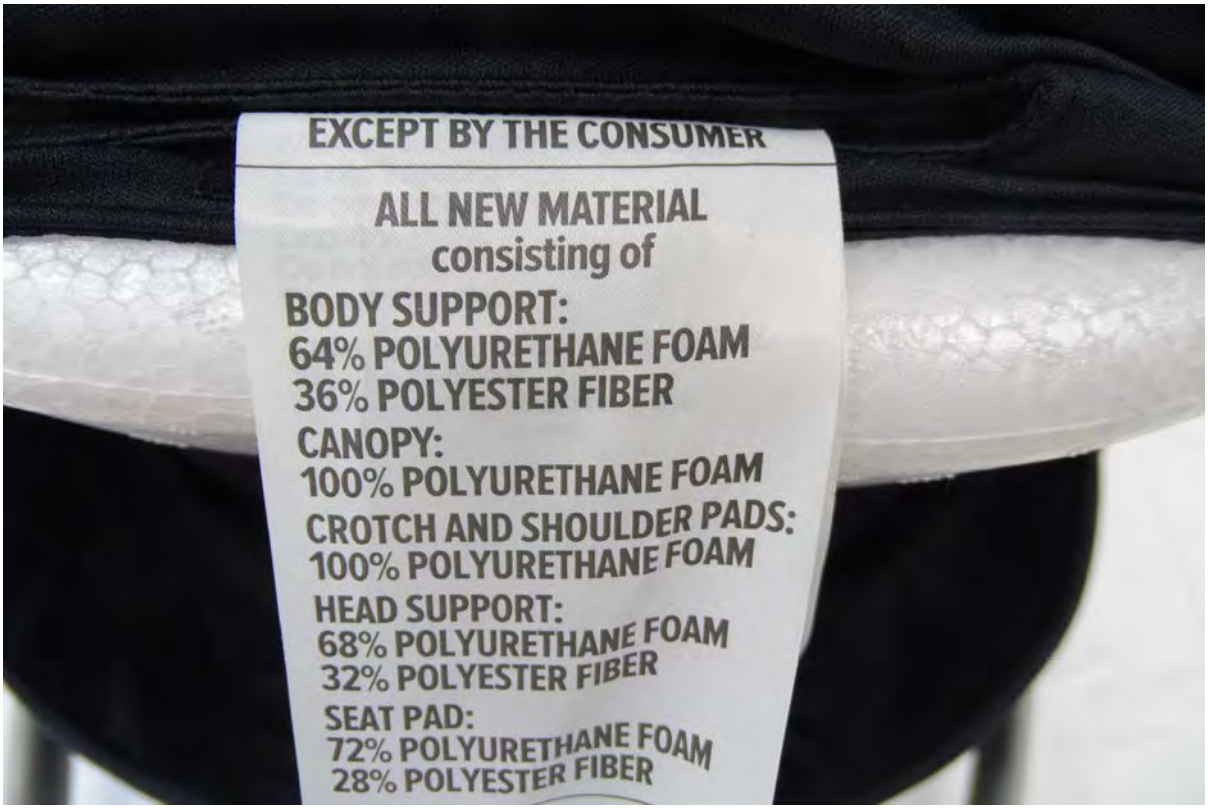

WARNING
The head insert straps cannot go through the same slots as the harness and should only be used in the top two harness slot positions.
WL-0381B

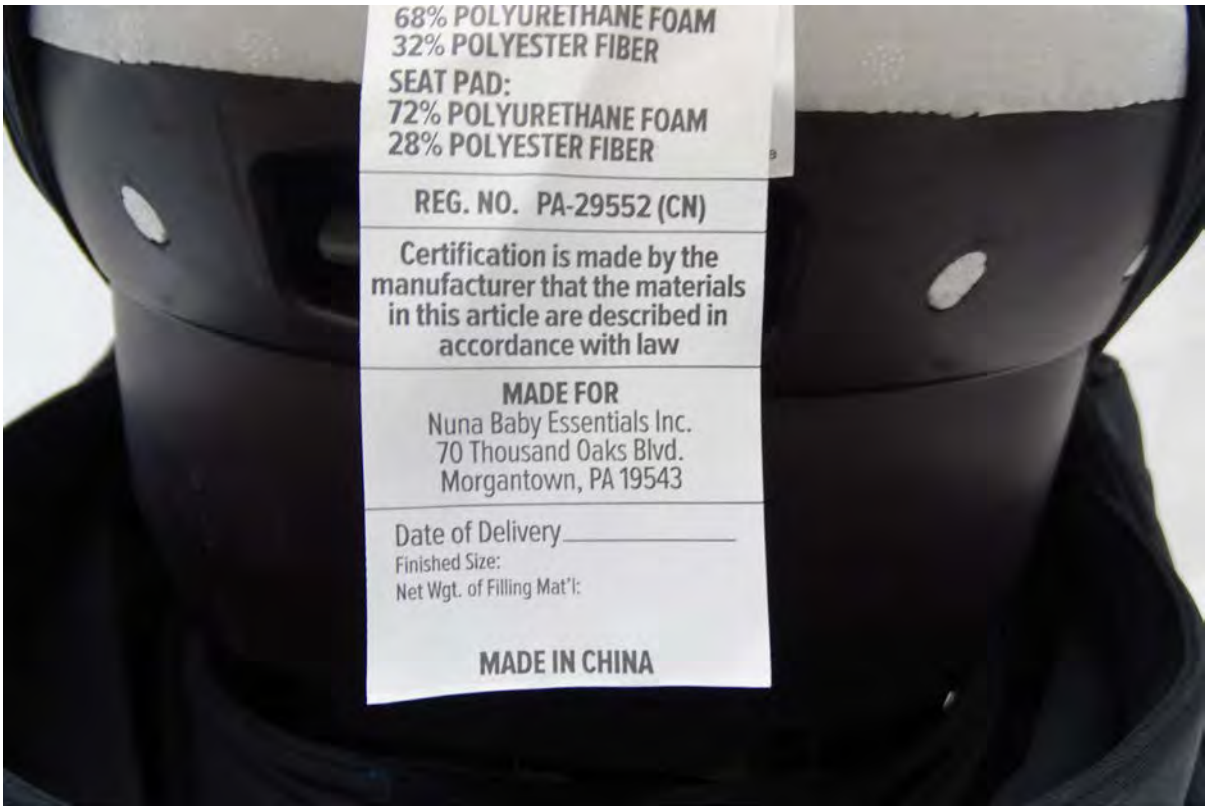
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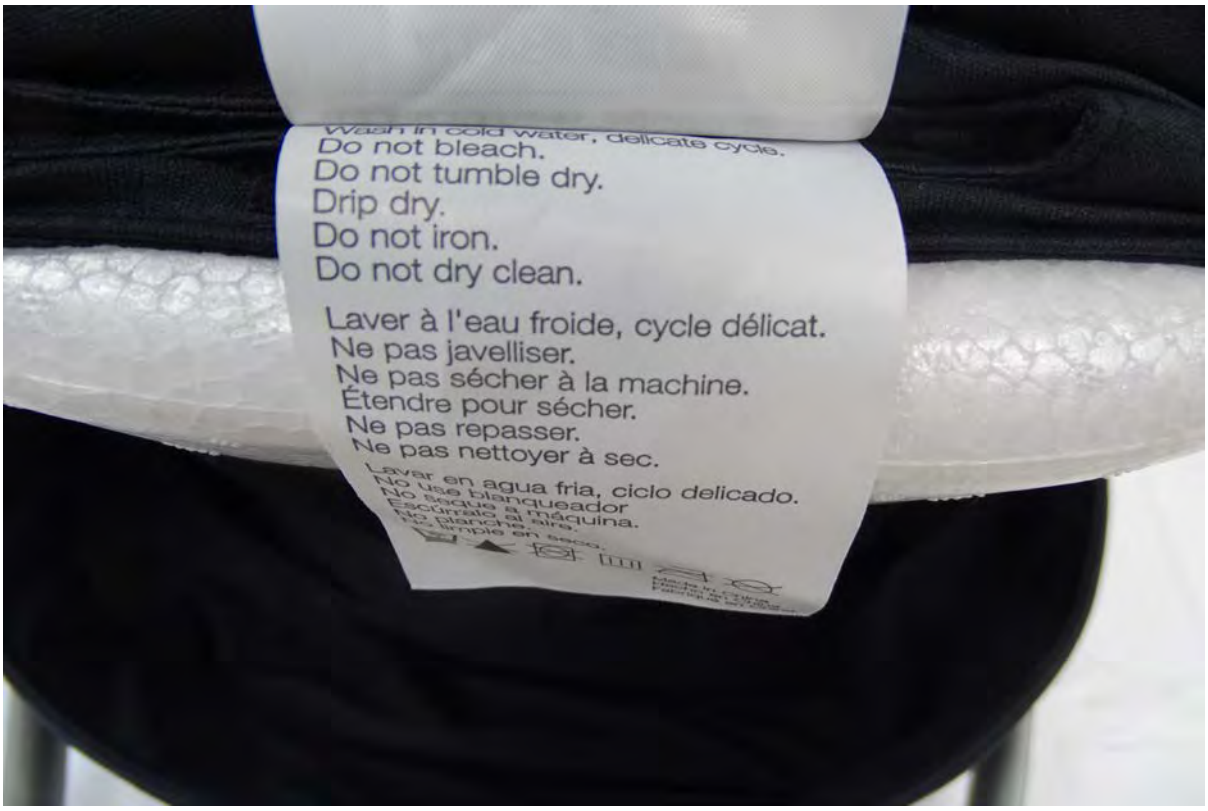

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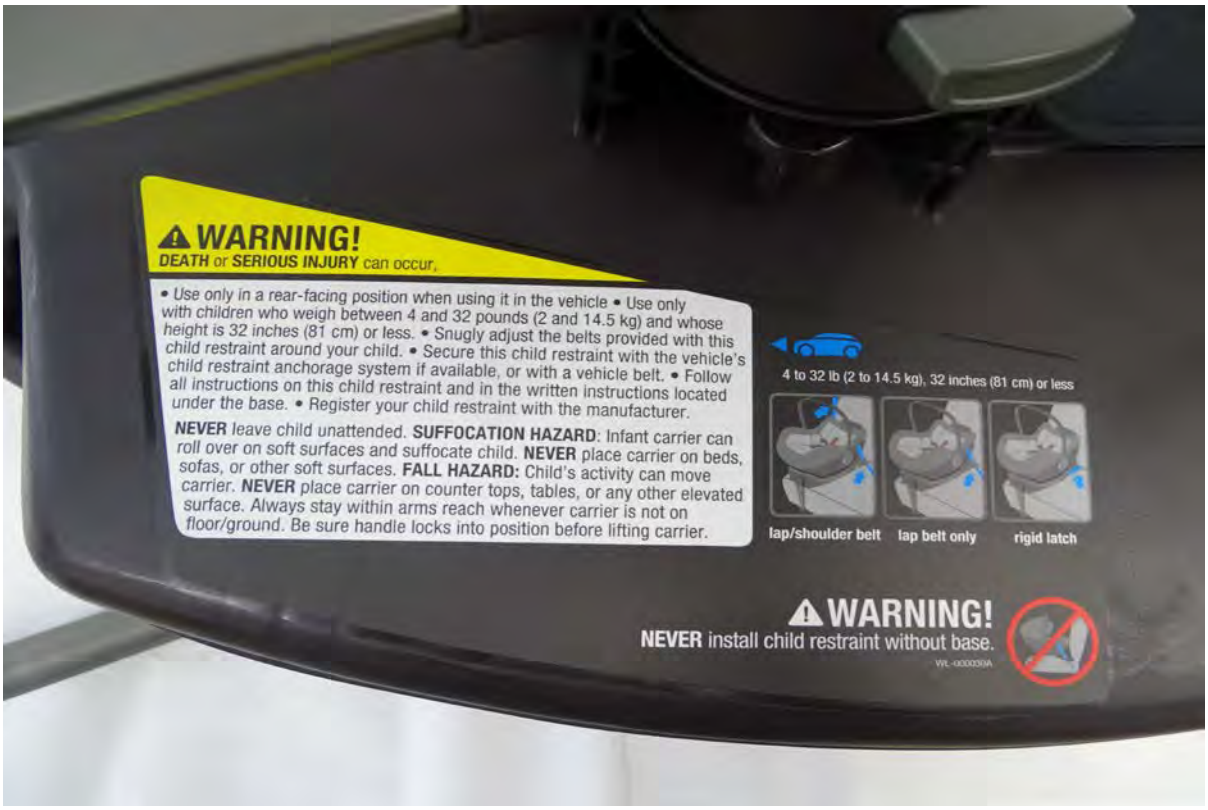

EXCEPT BY THE CONSUMER
ALL NEW MATERIAL
consisting of
BODY SUPPORT:
64% POLYURETHANE FOAM
36% POLYESTER FIBER
CANOPY:
100% POLYURETHANE FOAM
CROTCH AND SHOULDER PADS:
100% POLYURETHANE FOAM
HEAD SUPPORT:
68% POLYURETHANE FOAM
32% POLYESTER FIBER
SEAT PAD:
72% POLYURETHANE FOAM
28% POLYESTER FIBER


68% POLYURETHANE FOAM
32% POLYESTER FIBER
SEAT PAD:
72% POLYURETHANE FOAM
28% POLYESTER FIBER
REG. NO. PA-29552 (CN)
Certification is made by the manufacturer that the materials in this article are described in accordance with law
MADE FOR
Nuna Baby Essentials Inc.
70 Thousand Oaks Blvd.
Morgantown, PA 19543
Date of Delivery
Finished Size:
Net Wgt. of Filling Mat'l:
MADE IN CHINA

Item Code: 032-NCF085086-01-12CRFB2FR



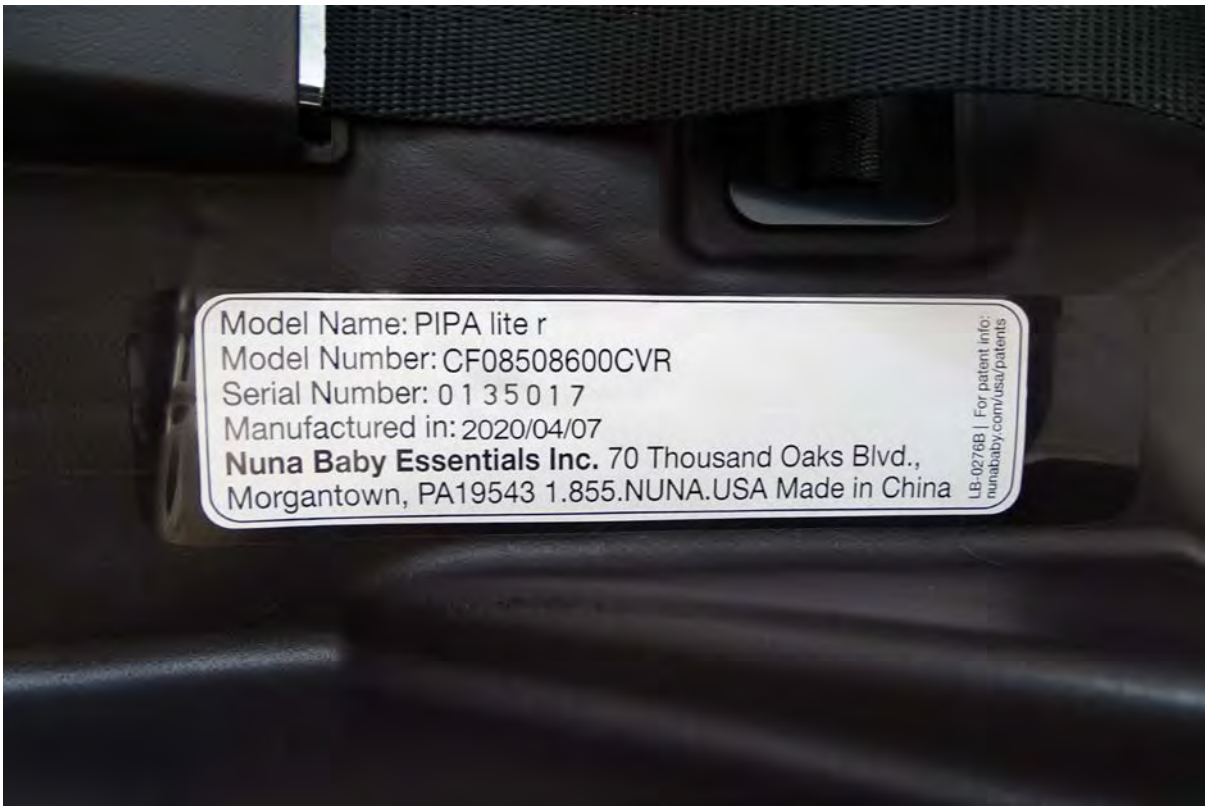

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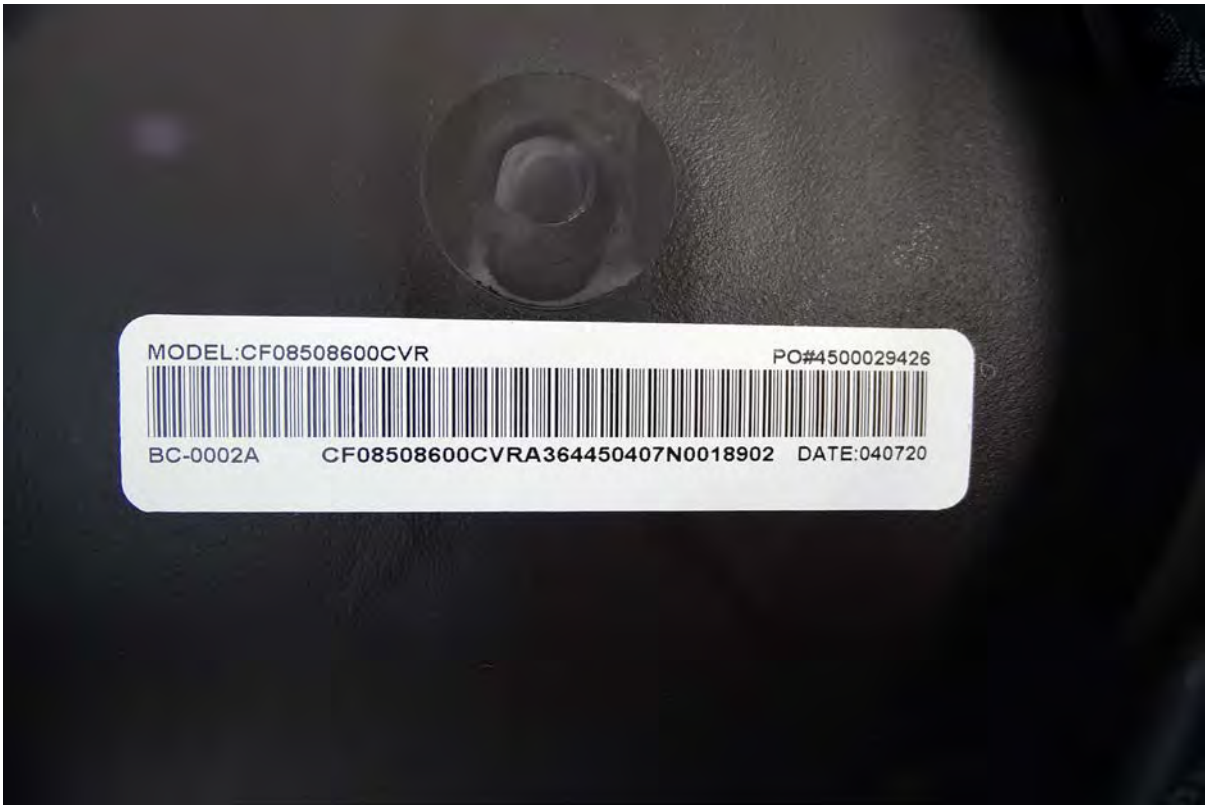
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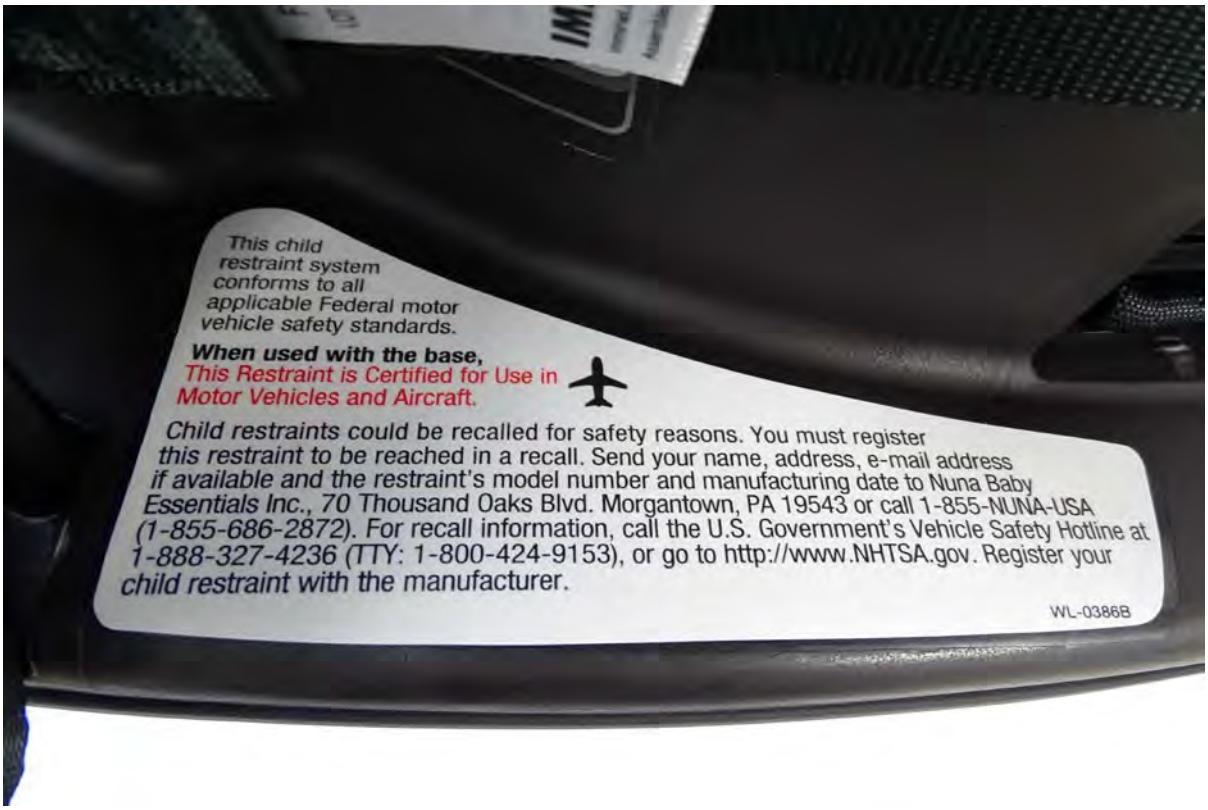

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Item Code: 032-NCF085086-01-12CRFB2FR




Item Code: 032-NCF085086-02-NINRFB2FR



INSPECTION

Item Code: 032-NCF085086-01-12CRFB2FR




Item Code: 032-NCF085086-02-NINRFB2FR



INSPECTION

Item Code: 032-NCF085086-01-12CRFB2FR

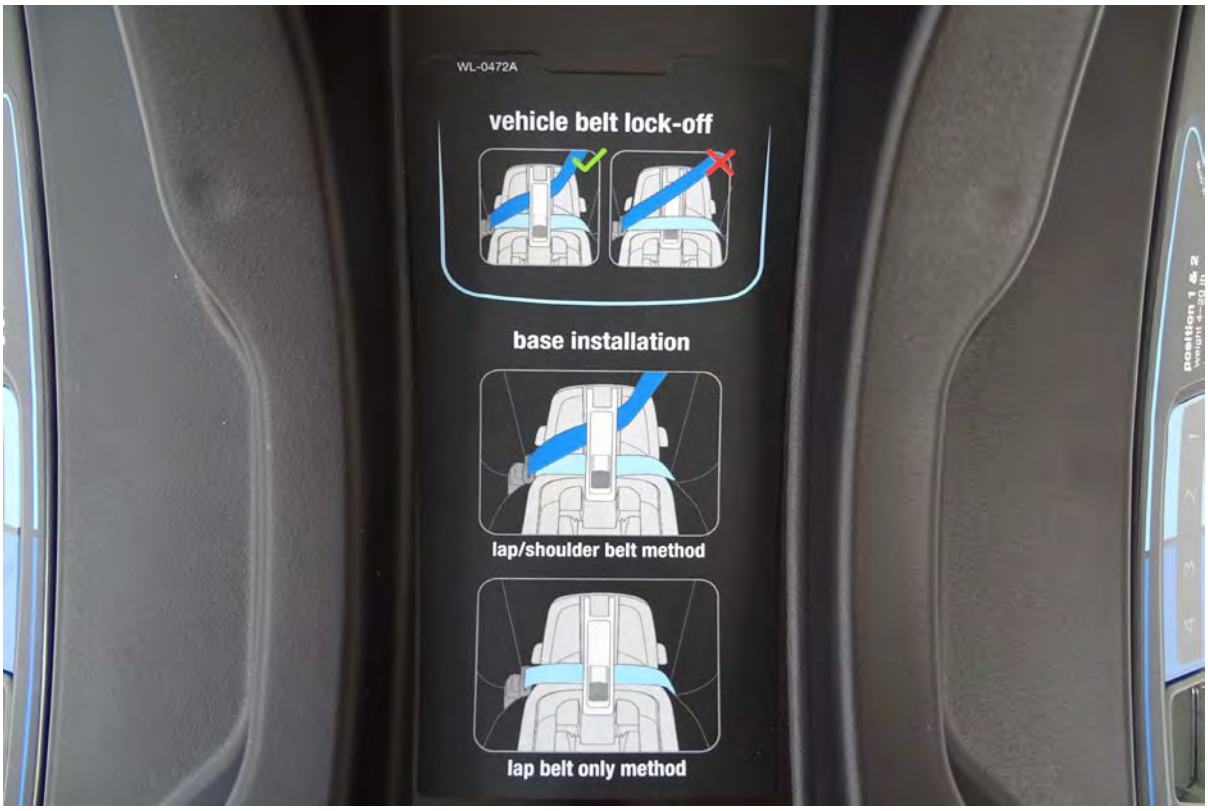



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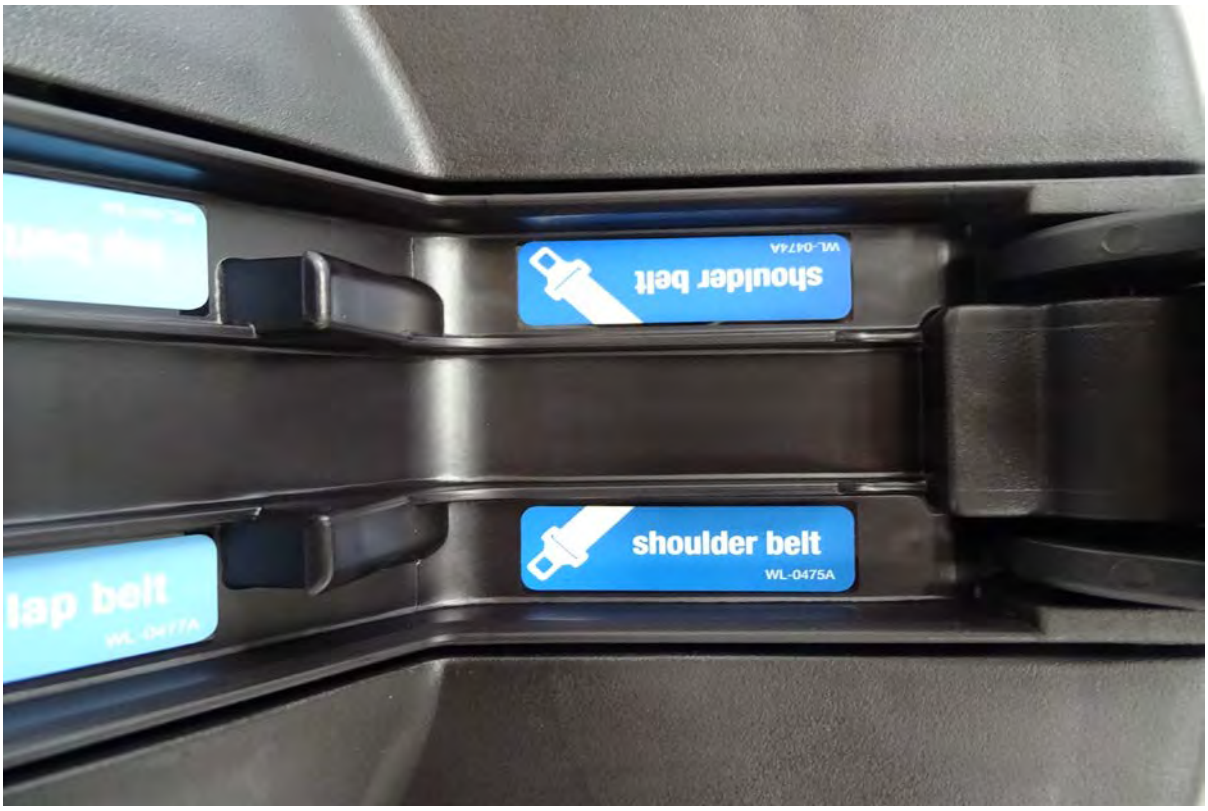
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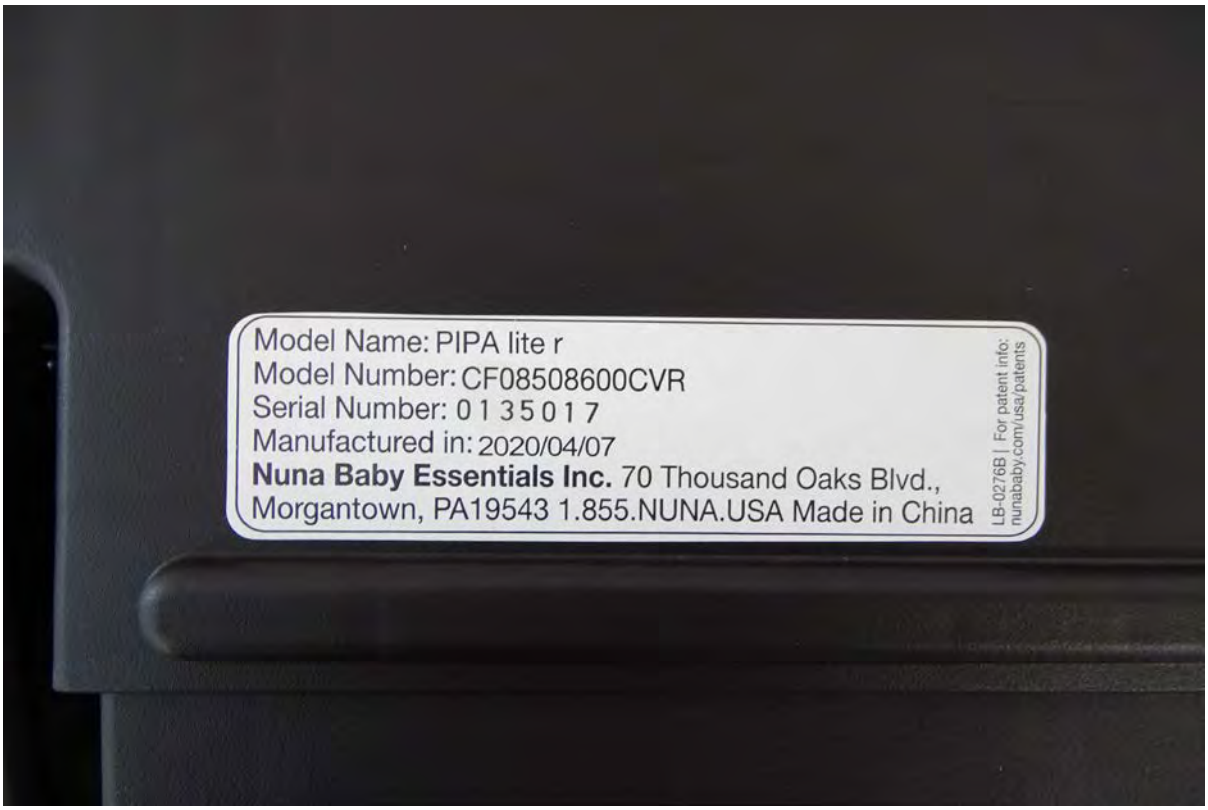

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Item Code: 032-NCF085086-02-NINRFB2FR



Item Code: 032-NCF085086-01-12CRFB2FR




Item Code: 032-NCF085086-02-NINRFB2FR



INSPECTION

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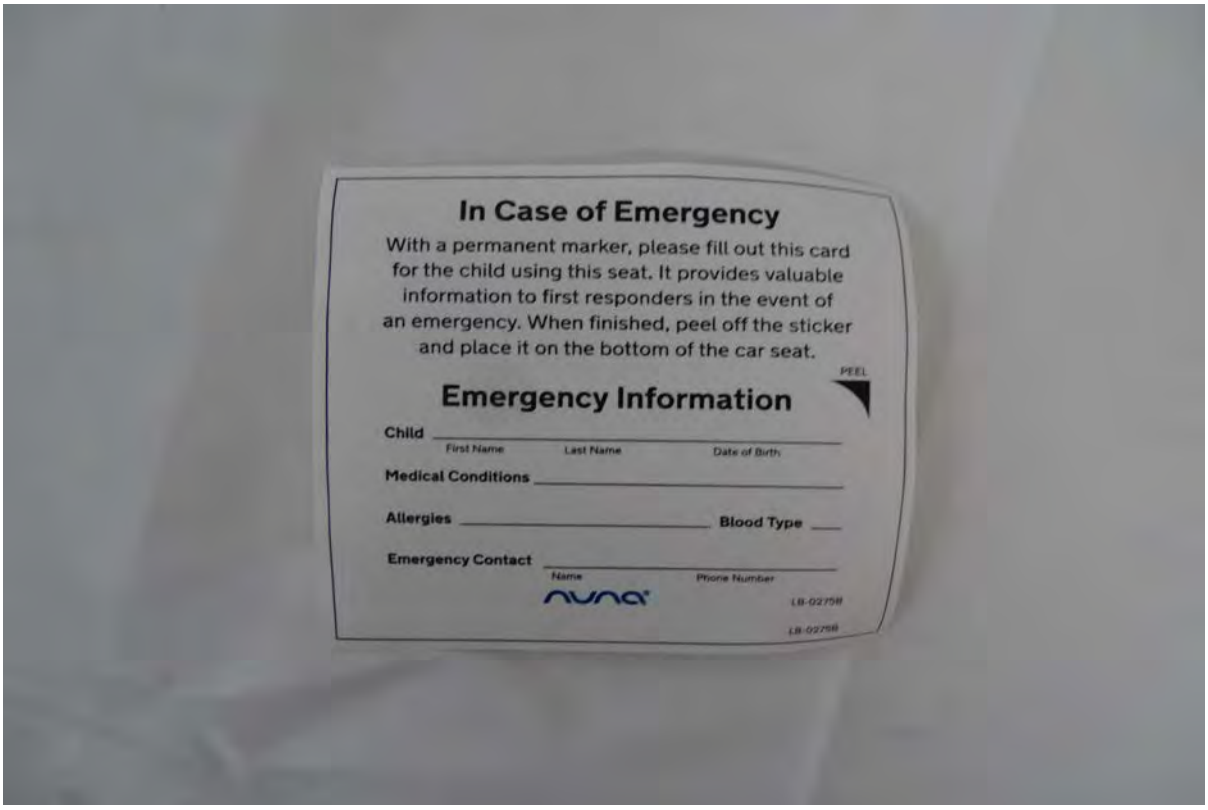
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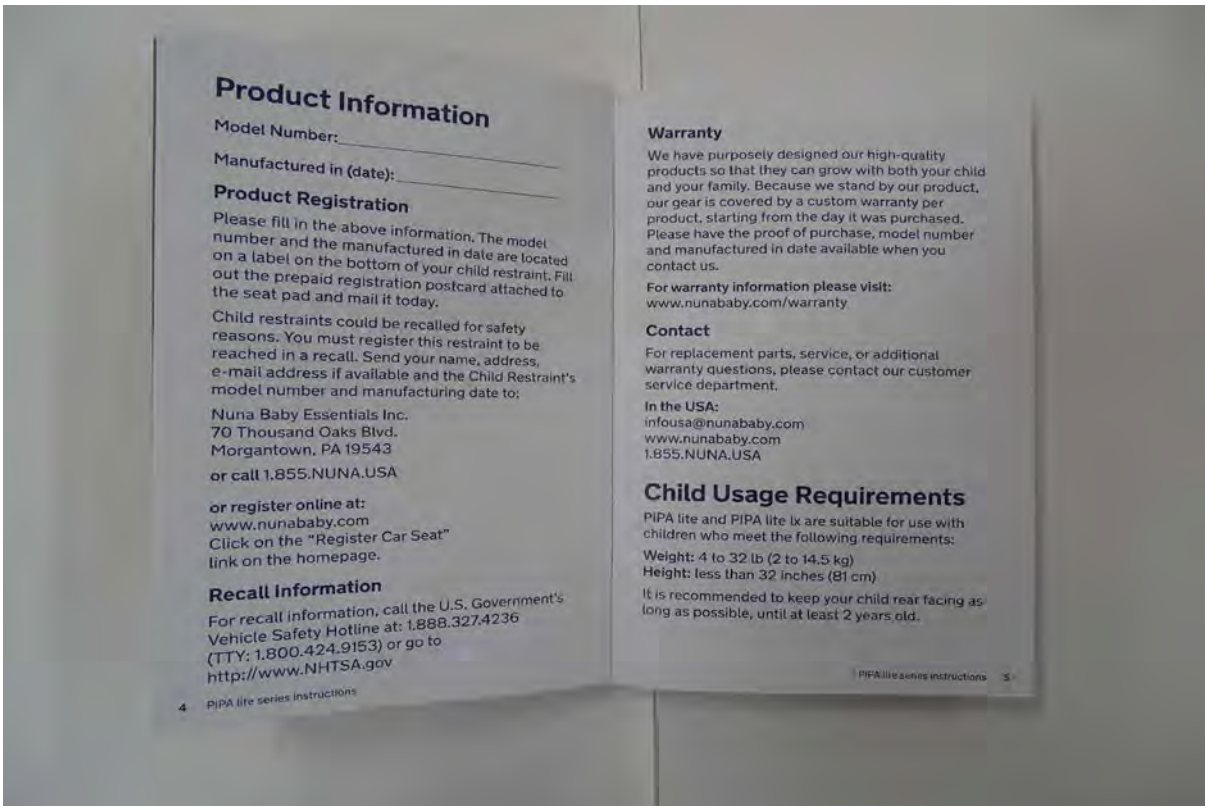

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Item Code: 032-NCF085086-01-12CRFB2FR

Item Code: 032-NCF085086-02-NINRFB2FR



## Product Information

Model Number:_____

Manufactured in (date):_____

### Product Registration

Please fill in the above information. The model number and the manufactured in date are located on a label on the bottom of your child restraint. Fill out the prepaid registration postcard attached to the seat pad and mail it today.

Child restraints could be recalled for safety reasons. You must register this restraint to be reached in a recall. Send your name, address, e-mail address if available and the Child Restraint's model number and manufacturing date to:

Nuna Baby Essentials Inc.
70 Thousand Oaks Blvd.
Morgantown, PA 19543

or call 1.855.NUNA.USA

**or register online at:**
www.nunababy.com
Click on the "Register Car Seat" link on the homepage.

### Recall Information

For recall information, call the U.S. Government's Vehicle Safety Hotline at: 1.888.327.4236 (TTY: 1.800.424.9153) or go to http://www.NHTSA.gov



### Warranty

We have purposely designed our high-quality products so that they can grow with both your child and your family. Because we stand by our product, our gear is covered by a custom warranty per product, starting from the day it was purchased. Please have the proof of purchase, model number and manufactured in date available when you contact us.

**For warranty information please visit:**
www.nunababy.com/warranty

### Contact

For replacement parts, service, or additional warranty questions, please contact our customer service department.

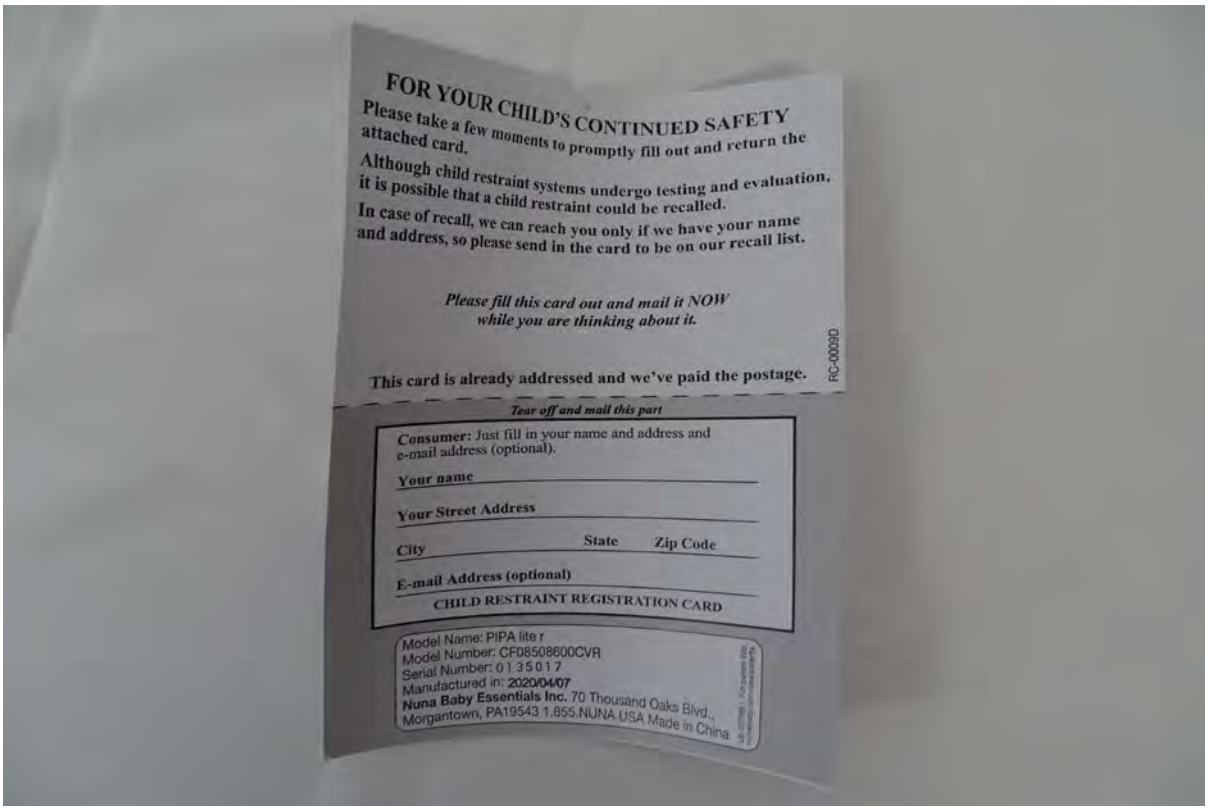
**In the USA:**
infousa@nunababy.com
www.nunababy.com
1.855.NUNA.USA

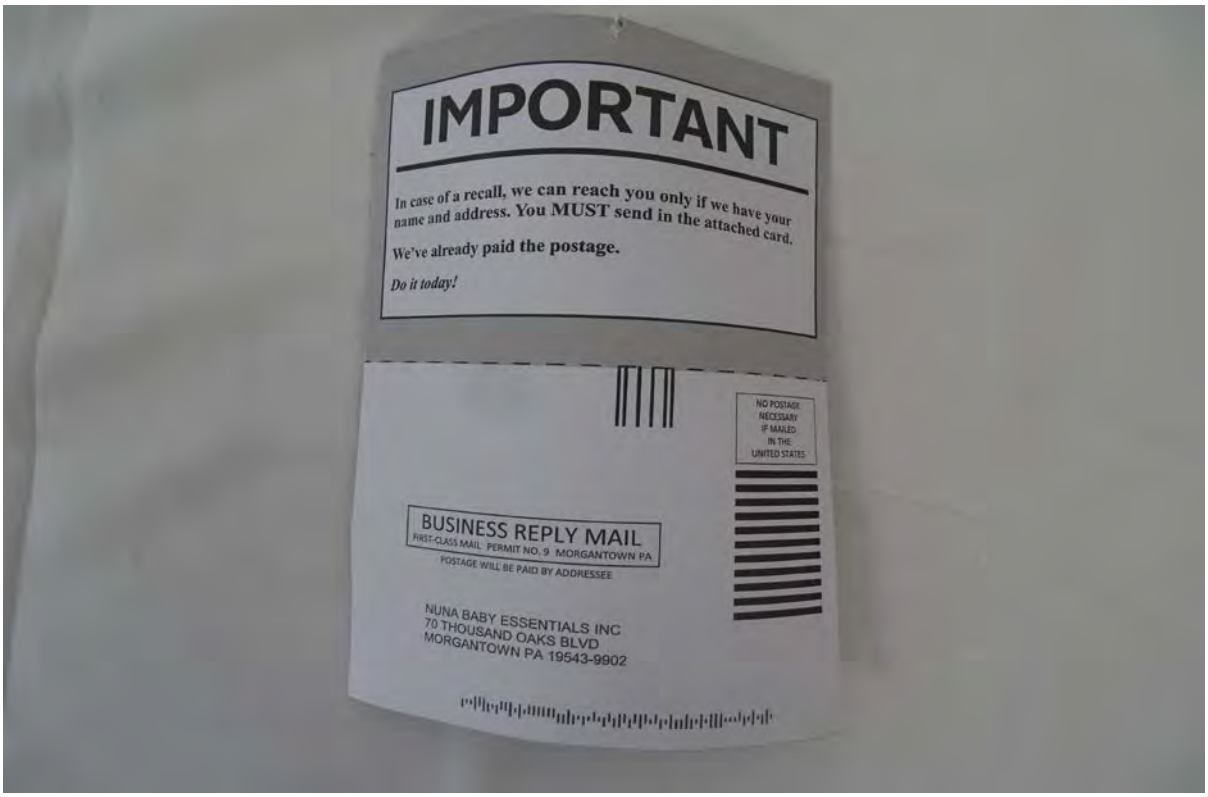
## Child Usage Requirements

PIPA lite and PIPA lite lx are suitable for use with children who meet the following requirements:

**Weight:** 4 to 32 lb (2 to 14.5 kg)
**Height:** less than 32 inches (81 cm)

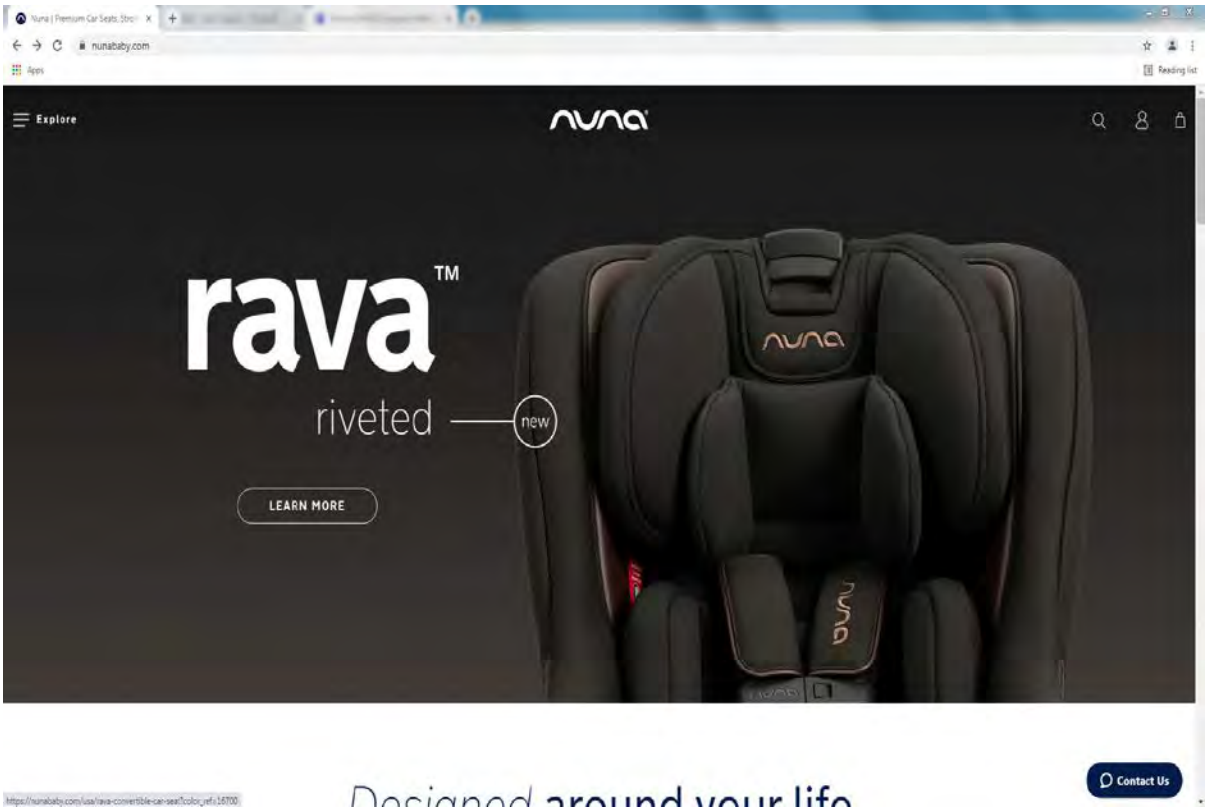
It is recommended to keep your child rear facing as long as possible, until at least 2 years old.


FOR YOUR CHILD'S CONTINUED SAFETY
Please take a few moments to promptly fill out and return the attached card.
Although child restraint systems undergo testing and evaluation, it is possible that a child restraint could be recalled.
In case of recall, we can reach you only if we have your name and address, so please send in the card to be on our recall list.
Please fill this card out and mail it NOW while you are thinking about it.
This card is already addressed and we've paid the postage.
RC-00080
Tear off and mail this part
Consumer: Just fill in your name and address and e-mail address (optional).
Your name
Your Street Address
City State Zip Code
E-mail Address (optional)
CHILD RESTRAINT REGISTRATION CARD
Model Name: PIPA lite r
Model Number: CF08508600CVR
Serial Number: 0135017
Manufactured in: 2020/04/07
Nuna Baby Essentials Inc. 70 Thousand Oaks Blvd., Morgantown, PA19543 1.855.NUNA.USA Made in China

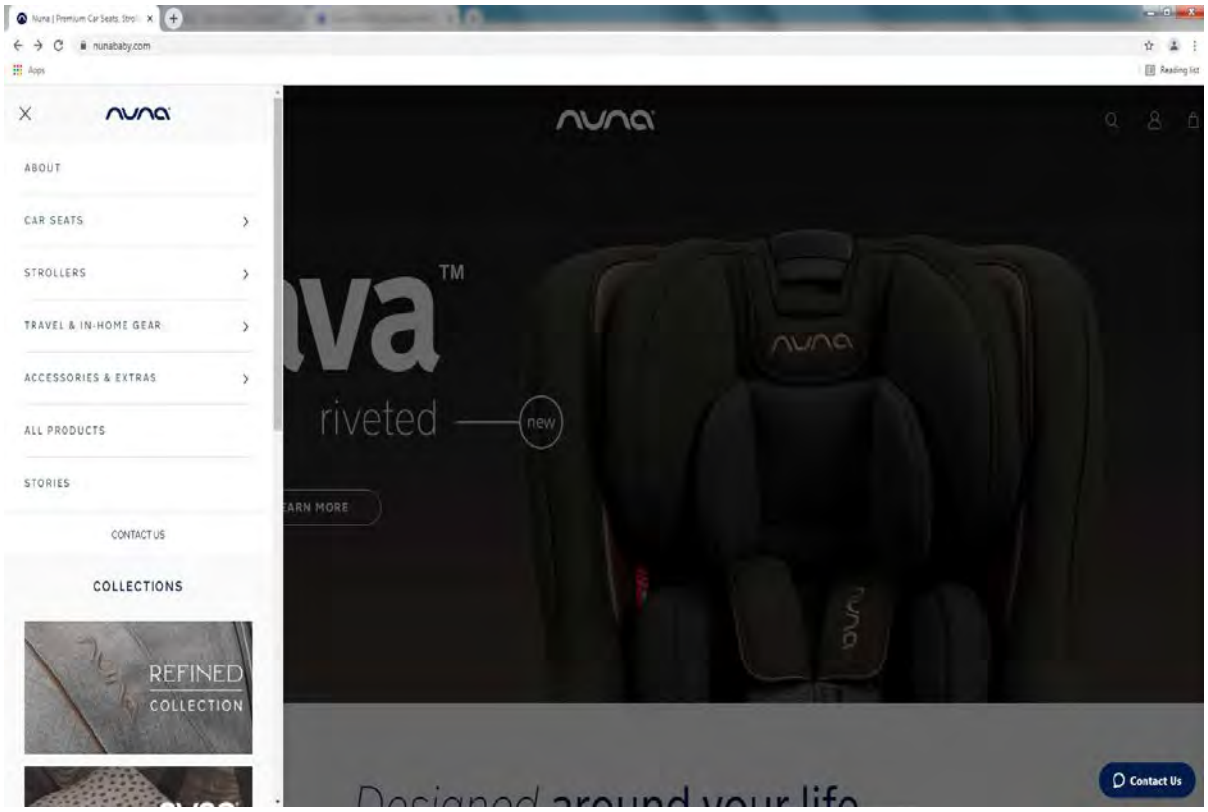

IMPORTANT
In case of a recall, we can reach you only if we have your name and address. You MUST send in the attached card.
We've already paid the postage.
Do it today!
NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES
BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 9 MORGANTOWN PA
POSTAGE WILL BE PAID BY ADDRESSEE
NUNA BABY ESSENTIALS INC
70 THOUSAND OAKS BLVD
MORGANTOWN PA 19543-9902

INSPECTION

Item Code: 032-NCF085086-01-12CRFB2FR

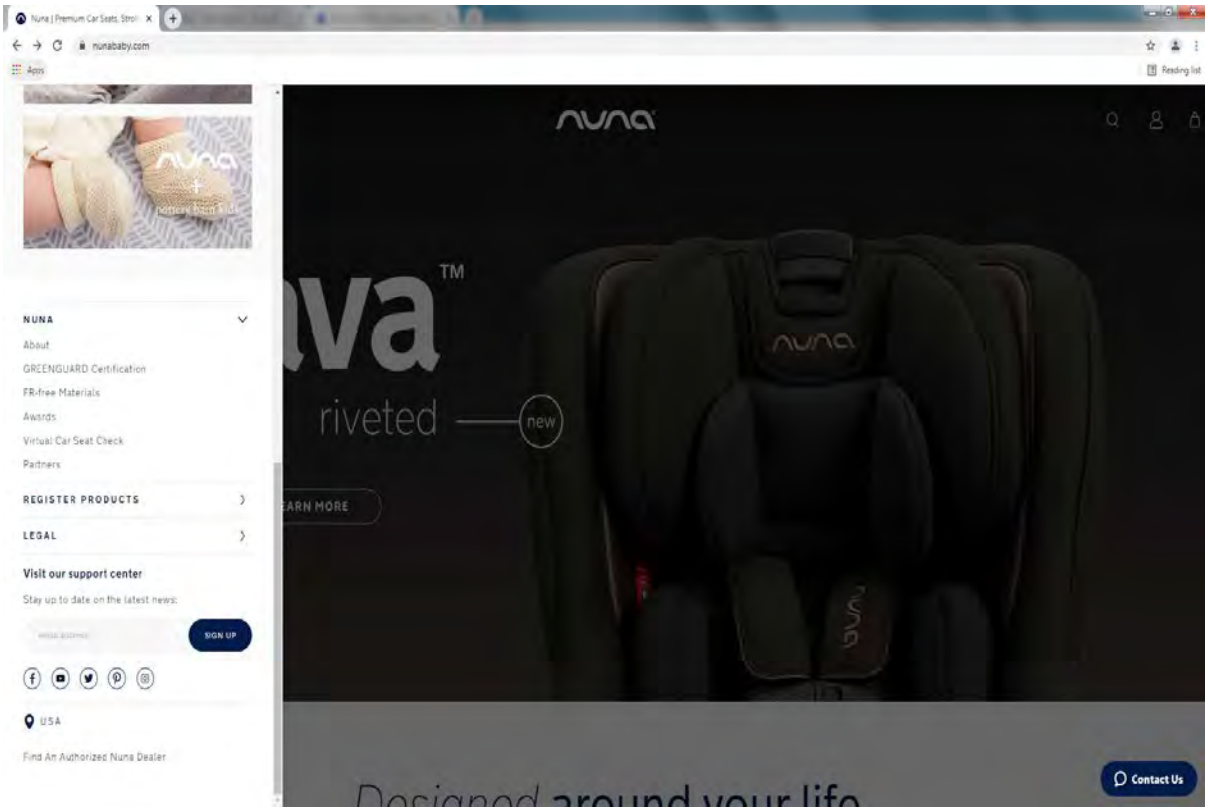



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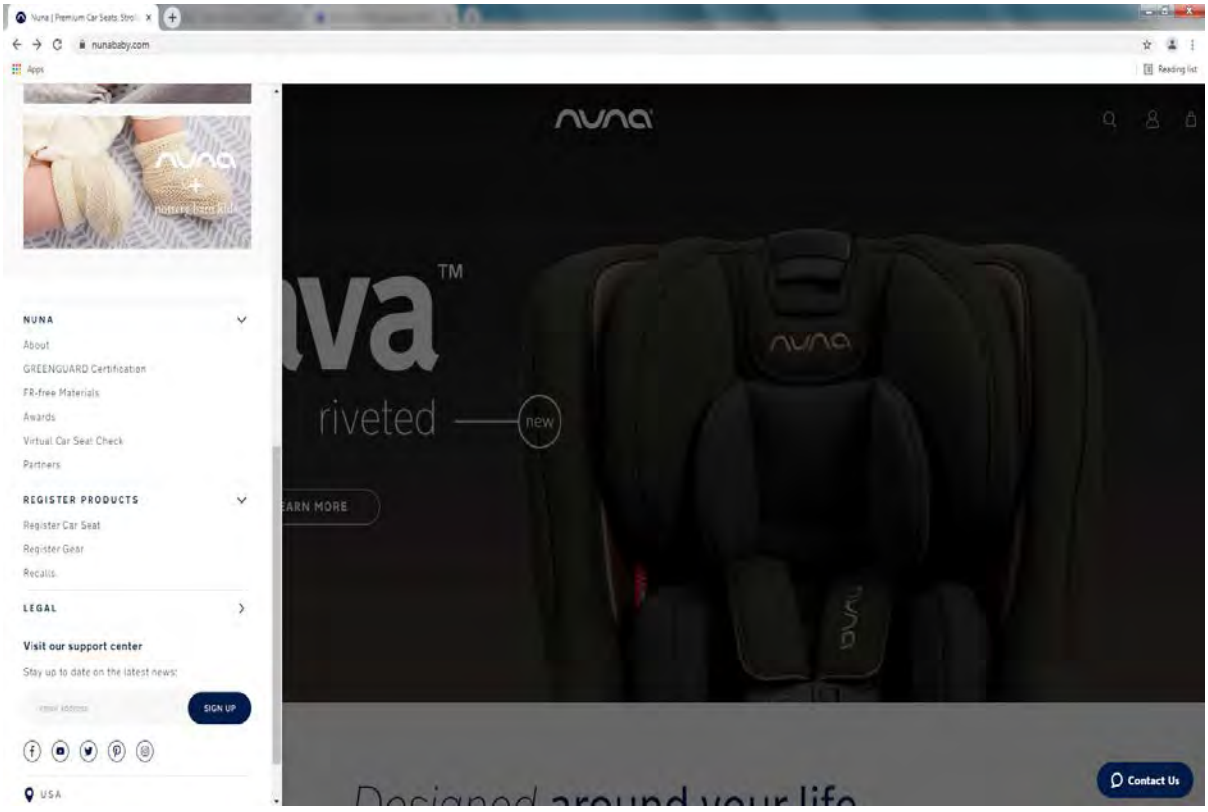


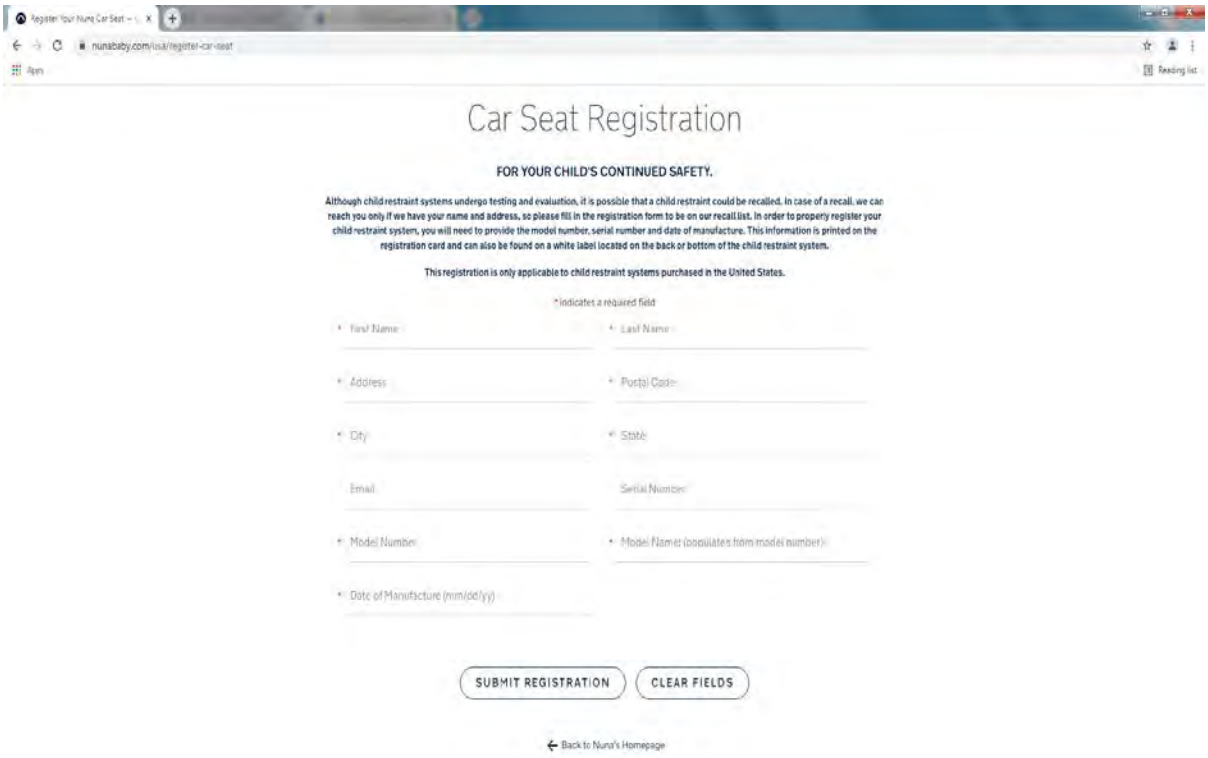
INSPECTION

Item Code: 032-NCF085086-01-12CRFB2FR




Item Code: 032-NCF085086-02-NINRFB2FR





Car Seat Registration

FOR YOUR CHILD'S CONTINUED SAFETY.

Although child restraint systems undergo testing and evaluation, it is possible that a child restraint could be recalled. In case of a recall, we can reach you only if we have your name and address, so please fill in the registration form to be on our recall list. In order to properly register your child restraint system, you will need to provide the model number, serial number and date of manufacture. This information is printed on the registration card and can also be found on a white label located on the back or bottom of the child restraint system.

This registration is only applicable to child restraint systems purchased in the United States.

* indicates a required field

* First Name
* Last Name
* Address
* Postal Code
* City
* State
Email
Serial Number
* Model Number
* Model Name (populates from model number)
* Date of Manufacture (mm/dd/yy)

SUBMIT REGISTRATION CLEAR FIELDS

Back to Nuna's Homepage



Register car seat

FOR YOUR CHILD'S CONTINUED SAFETY.

Although child restraint systems undergo testing and evaluation, it is possible that a child restraint could be recalled. In case of a recall, we can reach you only if we have your name and address, so please fill in the registration form to be on our recall list. In order to properly register your child restraint system, you will need to provide the model number, serial number and date of manufacture. This information is printed on the registration card and can also be found on a white label located on the back or bottom of the child restraint system.

This registration is only applicable to child restraint systems purchased in the United States.

* Required fields

Submit