

# 1. GENERAL DESCRIPTION

This is a specific model of polarized sunglasses manufactured by the sunglass and eyeglass company Ray-Ban, with the model name and code of “New Wayfarer RB2132”. Sunglasses primarily serve as practical optical tools that rest on the bridge of the nose of the wearer. The user unfolds the temples with use of hinge mechanisms in order that they can place the temples over the tops of their ears. The user as a result is looking through lenses located within the frame, that is attached to the temples by the hinges, which gives an augmented degree of vision to the user’s surroundings (see **Figure 1**); sunglasses are *not* necessarily designed to improve eyesight, as eyeglasses with prescription lenses are designed to. Sunglasses therefore serve the primary purpose of shielding the wearer’s vision from unusually bright sources of light.



**Figure 1** - New Wayfarers (with Temples partially unfolded)

Sunglasses also serve a secondary function of being fashion accessories. The two practical and aesthetic elements of this particular model warrant its RRP of CAD \$224.95, a cost that is widely considered higher than the average cost of sunglasses. Ray-Ban glasses are designed to be of high quality and standard; this particular model is made with polarized lenses, a standard of lens design that protects the user from harmful UVA and UVB rays from the Sun. This feature also eliminates glare, enhances contrast, reduces eye strain, and increases visual clarity. The frame and temples are made from a nylon polymer, allowing a light yet sturdy product for the user to wear (the sunglasses as a whole weigh approximately 35 grams).

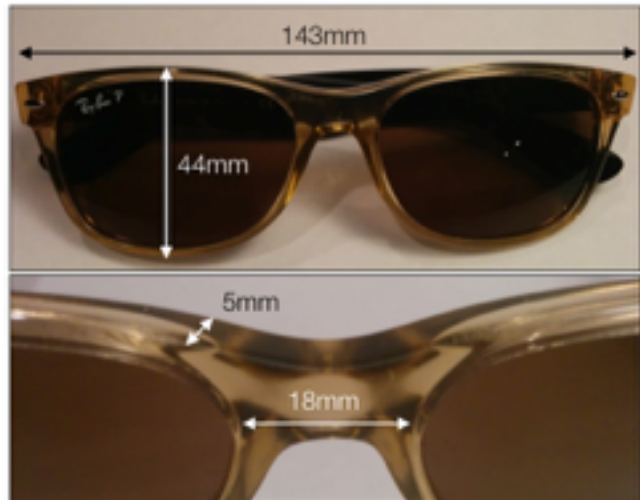
## 2. DESCRIPTION OF THE PARTS

The New Wayfarer RB2132 sunglasses are comprised of two main parts, which are the aforementioned frame and temples. Both these parts also have their respective sub-parts.

### 2.1 FRAME

The frame is a light yet sturdy nylon polymer housing that encases the lenses of the sunglasses, and allows the wearer to perch the sunglasses firmly against the bridge of their nose. The lower-middle curved arch is ergonomically formed so as to allow secure yet comfortable usability. It is also aesthetically extended in the top-two corners, to allow space for the silver almonds to be fixed to the front of the frame. The frame not only holds the lenses securely in place but also acts as the main foundation from which the

rest of the sunglasses is built off of; the lenses within the two hollow eyelets of the frame, the hinges that sprout off from the two opposing ends, which in turn connect to the two temples that allow the sunglasses to stay secured to the user's face. This particular model uses a semi-opaque honey colour for the frame. The entire surface area of both frame and temples is smooth and glossy. The frame measures 44mm in height (through the center of the lenses), 5mm in depth, 18mm across the bridge, and 143mm wide, from hinge to hinge (see **Figure 2**).



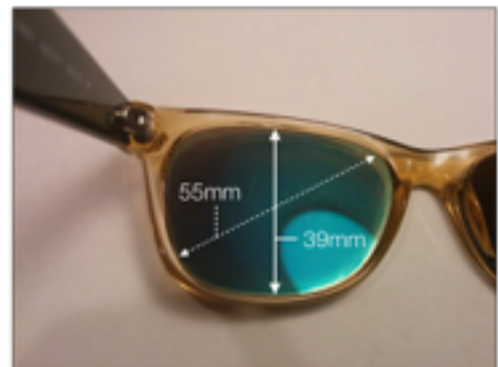
**Figure 2** - (Top) Frame length and height (Bottom) Frame depth and bridge width, both viewed from the outside

*NOTE:* The bridge width (18mm) corresponds to the width of the frame directly in-between the two lenses. This exact numerical measurement can be found printed in white lettering along the inside surface of the left-hand temple (see **2.2 TEMPLES**).

The frame itself is comprised of three sub-parts: two lenses, two silver “almond” fixtures, and two brackets with pins.

### 2.1.1 LENSES

The two lenses are irregularly (yet symmetrical) shaped panes of polarized crystal plastic, smokey-bronze in colour. In the top-left corner of the left lens (as viewed from the outside-perspective) there is inscribed “Ray-Ban P” in white lettering. This denotes this particular pair of sunglasses as having polarized lenses. Lenses provide the window through which the user may see through and, in doing so, alleviates the user's sensitivity to the light sources in their environment. The inside of the lenses (as viewed from the inside-perspective) are the same colour as the outside, but when shone at an angle against a light source a bluish-green shimmer is reflected upon the surface; this is an effect of the polarization of the lenses. The lenses are slightly concave so as to envelope the



**Figure 3** - The diameter and height of the lenses as shown from the inside-perspective of the sunglasses. Note the colour difference from previous visuals due to polarized surface

curvature of the wearer's face. Each lens measures 55mm in diameter and 39mm in height<sup>1</sup> (See **Figure 3**).

### 2.1.2 SILVER “ALMONDS”

The almonds are superfluous design elements to the production of the sunglasses, yet serve to distinguish the finished product from the rest of the sunglass market, and are a part of many Ray-Ban frames. These steel embellishments measure 6mm in length and <3mm in height, and are each fitted into the top two corners of the frame by double-pronged rivets, as is shown in the image on the right in



**Figure 4.** (Left) One of the almonds highlighted in one of the corners of the frame (Right) The same corner of the frame but viewed from above. Note the double-pronged rivet embedded in the nylon polymer frame

### 2.1.3 BRACKETS AND PINS

The steel brackets are embedded in the top corners of the frame on the direct opposite side of the frame to the almonds. Each bracket is secured in the frame using similar rivet designs to that of the almonds, but with the addition of metallic feet that jut out to the left and right of the two prongs to add extra firmness. The two prongs converge into a single, flat bed that runs flush with the flat surface of the back-corner of the frame; the bed runs 7mm in length. From the center of this bed runs a single 5mm long bracket, at the end of which is where the 6mmx3mm pin sits to allow the temples to fold and unfold. The hinge mechanism is achieved by having the pin swivel within the bracket and the clamp that is secured to the temple. See **Figure 5** for this breakdown of one of the hinges and pins.

- 1 - Feet of the rivet (at 90° angle)
- 2 - Bed of the bracket
- 3 - Bracket
- 4 - Pin
- 5 - Clamp



**Figure 5** - Hinge resting in the honey brown frame at the bottom, and the pin resting in the bracket and clamp

<sup>1</sup> The 39mm height of the lens is measured within the constraints of the frame; the lens itself may be larger by a few millimetres due to it being encased by the frame. (see **Figure 3**)

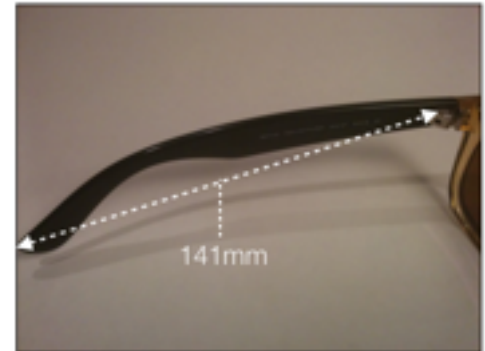
## 2.2 TEMPLES

The temples are the two nylon polymer arms that fold into one another against the inside of the frame when not in use. When the sunglasses need to be used, the temples are unfolded from each other one at a time, until they run perpendicular to the length of the frame to which they are attached, as is shown in **Figure 6**. They measure 141mm from tip to tip, but they are not uniformly flat or straight; they curve in various areas running along the edges so as to give grooves that you can comfortably rest them on the user's ears. The two tips, when fully unfolded, gently lean in toward each other to give a narrower pinch so the inside edges rest firmly against the sides of the user's head when worn.

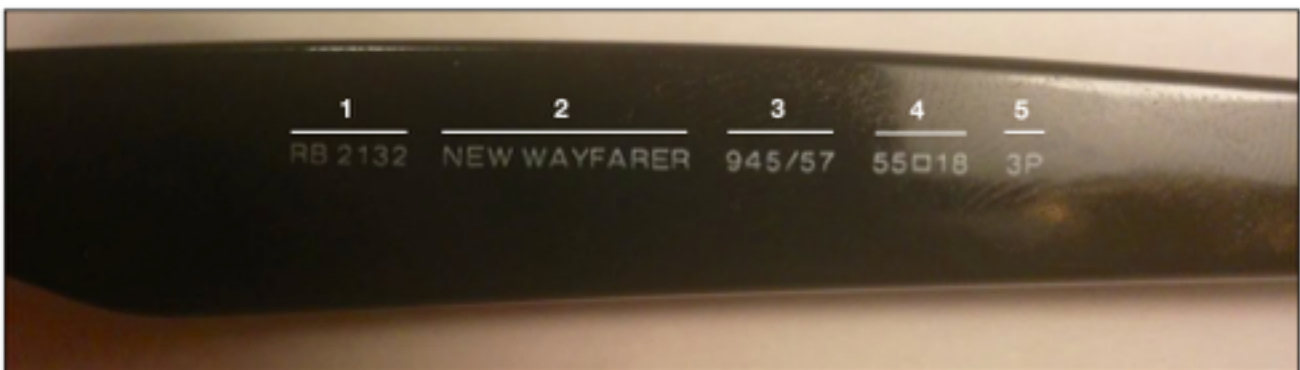
Along the inside of the left-hand temple is printed white lettering; each separate model of sunglasses from Ray-Ban has a unique set of information pertaining to that specific model and its features (these were outlined at the end of **2.1 FRAME**).

The left-hand temple is displayed in **Figure 6** and the information printed on it is more clearly displayed in **Figure 6.1**.

- 1 - model code
- 2 - model name
- 3 - frame and lens colour codes (respectively)
- 4 - lens diameter and bridge width (respectively, in millimetres)
- 5 - lens polarization level



**Figure 6** - The left-hand temple fully unfolded, showing the slopes and curves in various sections

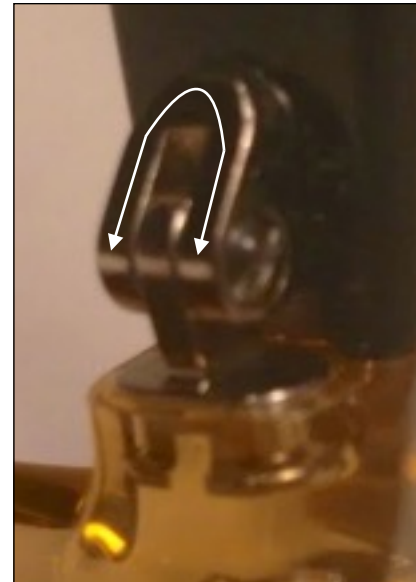


**Figure 6.1** - Specific model information written on left-hand temple

The temples are comprised of two other sub-parts: two clamps that hold the hinge in place, and the “Ray-Ban” emblem finishes on either side of the temples.

## 2.2.1 CLAMPS

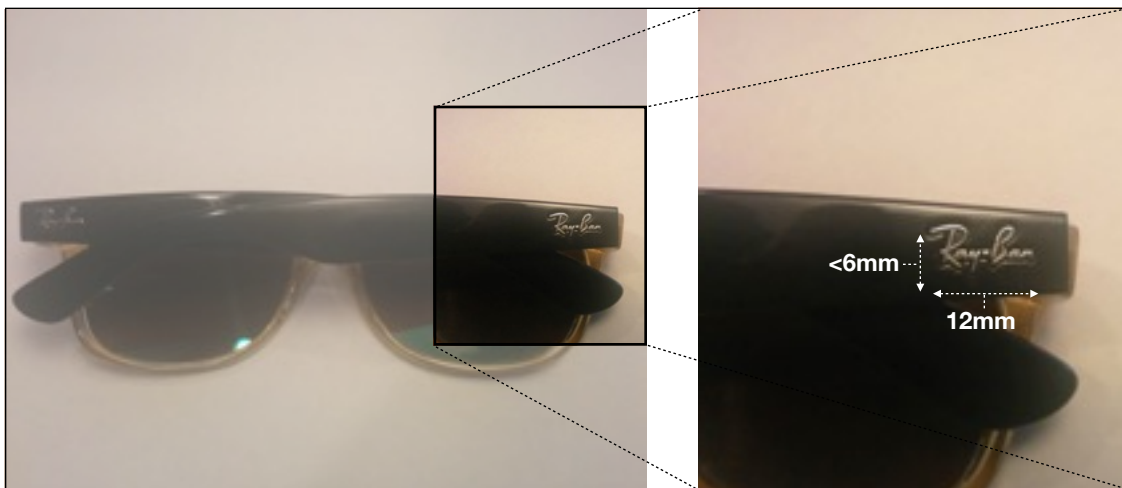
The two steel clamps are embedded in the inside edges of the two temples, closest to the frame. The way in which they are embedded is similar to the way the brackets are, but it is not visible from the outside due to the solid black surface of the temples. These double bracketed parts of each hinge mechanism are what hold the two ends of the pin in place within the single bracket that protrudes from the surface of the frame. They run 6mm in length, 5mm wide, and 4mm in height up from the surface of each temples; they taper off down away from the pin seemingly for appearance as it does not obstruct the wearer's comfort when worn. These clamps, combined with the brackets and pins, are what give the sunglasses the hinge ability, and therefore allow the temples to unfold and fold freely (See **Figure 7**).



**Figure 7** - The same image from **2.1.3**; highlighting the double brackets of the clamp

## 2.2.2 “RAY-BAN” EMBLEMS

These steel emblems are found on the two outer edges of the temples, directly on the opposite side to where the clamps are located. As is shown in the left-hand image in **Figure 8**, the emblems are visible when the temples are folded shut; when the temples are fully unfolded, and when the temples are placed over the ears of the user, the emblems are displayed on either side of the user's temples of their head. Each emblem measures 12mm in length and <6mm in height (from the tip of the “y” to the tops of the “R” and “B”). The right-hand image in **Figure 8** shows an enhanced view of the emblem from the right-hand temple.



**Figure 8** - Temples folded in on each other against the insides of the frame, exposing the “Ray-Ban” emblems **5 of 6**

### **3. CONCLUSION**

The Ray-Ban New Wayfarer polarized RB2132 is a lightweight yet durable pair of sunglasses, designed and manufactured to a higher standard than most sunglasses in the market. The practical use of the sunglasses coupled with its sleek design make it a multi purpose optical mechanism; it is a necessary tool, and a desired commodity at the same time.

#### **3.1 CYCLE OF OPERATION**

The sunglasses are held with the folded temples facing toward the user. The bottom and top edges of the frame are gripped between the thumbs and index fingers respectively. The outermost temple is pulled gently with the thumb and index finger, and is fully unfolded at 90°. Still gripping this same temple, the other thumb and index finger unfolds the adjacent temple to the same extent. The sunglasses are raised to above eye level. The tips of the temples facing the user are placed along the sides of the user's head. The temples are pulled in until the inside of the frames touches the user's face. The arc of the frame is snugly adjusted to the bridge of the user's nose, with the temples firmly resting in-between the tops of the user's ears and sides of the head. This process is repeated in reverse order when the sunglasses are not in use, with temples fully folded across the frame for a snug fit as to make stowage and transporting easier.

#### **3.2 VALUE TO USER**

The value of the New Wayfarer is found in the cost; although more expensive than the average pair of sunglasses, these Ray-Bans offer the classic horn-rimmed look of the Wayfarer from the 1950's and 60's, coupled with a more rounded-off, contemporary finish. The dual tone of the honey brown frame and black temples gives it a further added aspect of flare not necessarily found on many sunglasses, although this trend is becoming more popular. Aside from the purely aesthetic points, these sunglasses truly offer the user a significant protection from strong sources of bright light, even if the user does not have sensitive eyesight. The cost of the sunglasses may reflect upon how the consumer values quality eye protection, and may also reflect on what kinds of extracurricular activities they engage in; walking along a white beach on a sunny day or tackling the snowiest peaks of an alpine ski resort, or even going about your day and wanting to make a subtle and refined statement all warrant the user to purchase, wear, and enjoy these Ray-Bans.