

# FREQUENTLY ASKED QUESTIONS

## TRIMBLE HOLOTINT

-- General --

### **What value does Trimble HoloTint provide?**

Trimble HoloTint is an attachable accessory for your HoloLens device that increases and stabilizes the contrast of holograms in bright environments. Trimble HoloTint features a photochromic lens that automatically adjusts its tint level based on the UV rays in ambient light, ensuring that contrast remains consistent as you move between different lighting conditions. This improves the visibility and readability of holographic content regardless of environment, including under UV-emitting artificial lighting.

### **Will I be able to use my HoloLens device outdoors?**

Using Trimble HoloTint will increase the ability to use HoloLens outdoors in bright sunny conditions, but it does not solve for every scenario. Other limitations of HoloLens 2 and the Trimble XR10 should be considered, such as the optimal thermal operating range (10°C - 27°C, 50°F - 81°F) and ingress protection rating (IP50). Note that the HoloLens 2 and Trimble XR10 devices will still continue to function outside these ranges, though performance levels will degrade as temperatures rise and battery life will degrade as temperatures lower below the recommended range.

Direct sunlight, particularly when shining head-on into the device, can impact the range at which depth sensing (area mapping and hand tracking) is responsive. These limitations can generally be mitigated using software, such as leveraging near-touch over far-touch in UI when possible.

### **Will HoloTint work indoors or will I have to take it off?**

Depending on the environment, Trimble HoloTint will improve indoor experiences, though this is generally dependent on personal preference, the user-set brightness of the display, and the colors of the holographic content. When indoors, unless under strong UV-emitting light sources (or near windows), the lens will adjust to its minimum tint level (~45%) and still provide improved contrast. In dark environments, the minimum tint level might still provide too much tint and users may wish to remove HoloTint from their HoloLens. The device easily snaps on and off the HoloLens with no tools necessary after the initial installation.

### **What does photochromic / photochromatic mean?**

A photochromic (or photochromatic, the names are interchangeable) lens is one that automatically adjusts its tint level based on ambient light. In prescription eyeglasses, these are typically referred to as transition lenses. The Trimble HoloTint lens features a special coating that, when activated by ultraviolet (UV) rays, undergoes a chemical process that darkens the lens. It's actually the UV radiation that causes the change, not the photons making up the ambient light. As such, Trimble HoloTint will only activate against light sources that emit UV radiation (e.g. they won't work in a vehicle if the windows are tinted to block UV rays).

### **What is the tint range?**

Trimble HoloTint adjusts between 45.2% visible light transmission (VLT) when used in dark or moderate light conditions and up to 11.0% VLT when used in the brightest environments. This VLT rating is for HoloTint itself and does not include the built-in tint in the HoloLens visor or the user-set brightness of the display, both of which add more contrast to a user's experience. Due to manufacturing tolerances, VLT percentages for Trimble HoloTint may vary  $\pm 3\%$ .

### **Are the lenses polarized?**

No. In our testing we found that adding a polarized lens to the front of a HoloLens device negatively impacted hologram visibility.

### **How quickly will the tint transition between different lighting scenarios?**

The speed at which Trimble HoloTint adjusts its tint level is dependent on the magnitude of difference between the lighting in different environments as well as if the user is going from light-to-dark or dark-to-light. Generally speaking, the lens will adjust from clear to dark (e.g. pulling it out of the case into a sunny environment) in about 30 seconds. Going the opposite direction, HoloTint takes a little longer, generally about 90 seconds to go from tinted to clear (e.g. walking from a sunny environment into a dark shadow or indoors).

### **What devices does HoloTint fit onto?**

Trimble HoloTint is compatible with any Microsoft HoloLens 2 based product, including HoloLens 2, HoloLens 2 Industrial Edition, HoloLens 2 Development Edition, and the Trimble XR10 with HoloLens 2. HoloTint is not compatible with HoloLens 1 or any other non-HoloLens device.

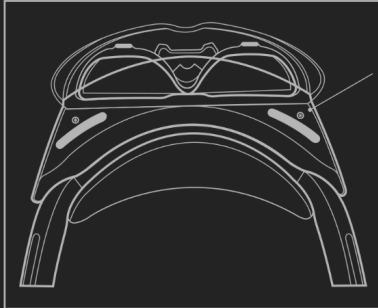
### **How does Trimble HoloTint attach to my device?**

HoloTint consists of two main parts: the tint lens and the mounting brackets. The mounting brackets affix to either side of the HoloLens 2 device with screws and are intended to stay on the device permanently. The tint lens then snaps into the mounting brackets, allowing for easy removal and replacement.

The instructions for attaching Trimble HoloTint on a HoloLens are below (and also printed inside the box). When installing the brackets, take care not to overtighten the screws attaching the brackets to the HoloLens housing. The recommended installation torque for these screws is 1.2kgf\*cm.

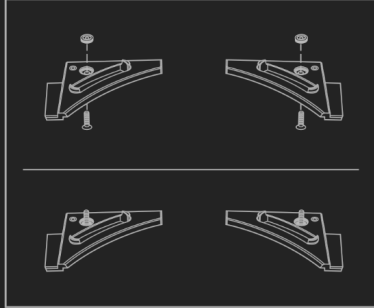
## ASSEMBLY INSTRUCTIONS

### STEP 01



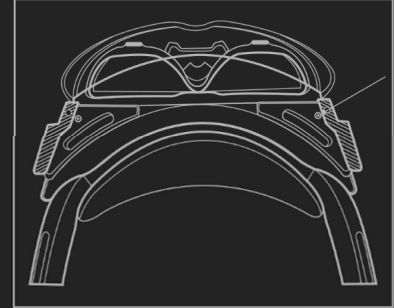
Remove the HoloLens screws with the included screwdriver

### STEP 02



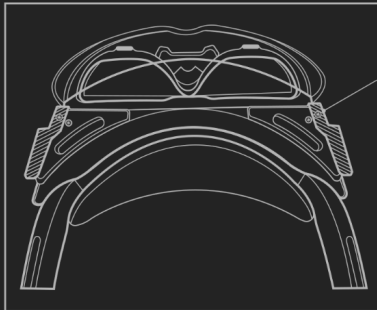
The bracket hardware provided should come preassembled – if not, insert the included screws into the brackets and thread the washer into the screws

### STEP 03



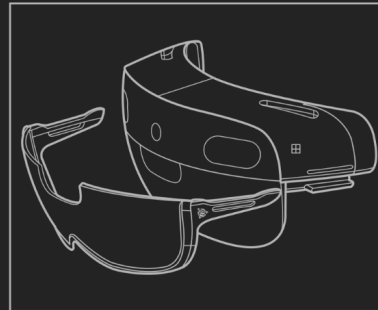
Align each bracket onto the HoloLens and tighten the screws. Do not over tighten

### STEP 04



Tighten the HoloLens screws into the holes in the brackets for safekeeping

### STEP 05



Align the HoloTint with the HoloLens visor then connect each arm onto the brackets

### What tools are required for assembly?

A Torx T5 screwdriver is required for the first installation of HoloTint on your device. The screwdriver is included with the product. Do not overtighten the screws during install.

### **Can I transfer HoloTint between different HoloLens 2 and/or XR10 devices?**

Yes, the tint lens itself is easily transferred from one device to another, so long as both devices have mounting brackets installed. If you plan to have more devices than HoloTint lenses, we recommend buying just the mounting brackets for each device. These are available for \$50 per set. Do not move brackets between devices.

### **Will HoloTint fit in my existing HoloLens case?**

Yes! You can keep the lens attached to your HoloLens 2 or Trimble XR10 and it will still fit in its case.

### **How heavy is the lens?**

Trimble HoloTint adds 1.2 oz. (34g) of weight to the HoloLens device. This accounts for approximately a 6% and 3% increase in weight on the HoloLens 2 and Trimble XR10 devices, respectively. In our testing, we found the increased weight to be negligible on both devices.

### **Are the lenses scratch resistant?**

Trimble HoloTint has a scratch-resistant coating applied as part of the last steps in the manufacturing process. In our experience, this protects well against micro scratches. But, like any lens, there's really no protection against deep cuts and gouges from harder materials. The lens is made of acrylic and will not easily break or shatter if impacted or dropped.

### **Are the lenses impact rated?**

The visor on all HoloLens 2 devices (with or without Trimble HoloTint) already has a basic impact certification in compliance with ANSI Z87.1-2015, CSA Z94.3-07, EU EN 166, and AS/NZS 1337.1. Trimble HoloTint does not negatively affect this rating. Since HoloLens devices do not provide protection to the periphery, we strongly recommend that workers also wear protective eyewear under their HoloLens device where required.

### **Are the lenses intrinsically safe?**

The Trimble XR10 and HoloLens 2 Industrial Edition devices are already certified for intrinsic safety to the requirements of UL Class I, Division 2 (UL 121202 & CSA C22.2 NO. 213). The HoloTint accessory doesn't affect this certification.

-- Buying --

### In what regions is Trimble HoloTint available for purchase?

Trimble HoloTint is currently compliant and available for purchase in 44 regions, listed below. Please note that each region will have different direct and indirect purchasing options available and not all regions currently offer purchases online.

If you would like to be contacted by a local sales representative, or are in a region where we currently do not offer Trimble HoloTint, please reach out to us [here](#).

*Currently supported regions:*

**Africa:** South Africa

**Americas:** Canada, USA

**Asia:** China, Hong Kong, Japan, Singapore, South Korea, Taiwan

**Europe:** Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom

**Oceania:** Australia, New Zealand

### How much does Trimble HoloTint cost? Who sells it?

The manufacturer's suggested retail price (MSRP) for Trimble HoloTint is \$300 USD. They can be purchased online in the [Trimble Construction Shop](#) or from [Microsoft Store](#). If you'd like to engage with a sales representative from Trimble or one of our authorized resellers, please contact us [here](#).

### Who is Trimble?

Trimble is transforming the way the world works by delivering products and services that connect the physical and digital worlds. Core technologies in positioning, modeling, connectivity and data analytics enable customers to improve productivity, quality, safety and sustainability. From purpose built products to enterprise lifecycle solutions, Trimble software, hardware and services are transforming industries such as agriculture, construction, geospatial and transportation.

Trimble solutions are used in over 150 countries around the world. Our 11,000+ employees, located in more than 40 countries, coupled with a highly capable network of dealers and distribution partners, serve and support our customers. For over 40 years, Trimble has created unique solutions that help customers grow their businesses through digital transformation.

### Where can I learn more about mixed reality and Trimble's offerings?

We're glad you asked! You can learn more about Trimble's suite of mixed reality hardware and software on our website [here](#) or by contacting us [here](#). Microsoft's HoloLens website ([here](#)) is also a great resource.

-- Support --

### **How do I clean Trimble HoloTint?**

Remove HoloTint from your HoloLens device then clear any dust or dirt by rinsing the lens under lukewarm water. Do not dry-rub the lens as particles on the surface can scratch the lens. Fully dry the lens with a lint-free microfiber cloth before reattaching to the HoloLens.

### **Can I use lens or glass cleaners for cleaning the lens?**

No. These cleaners can be abrasive to the photochromic and scratch-resistant coatings on the lens.

### **Can I use disinfecting wipes to clean the lens?**

We recommend cleaning HoloTint with only water and a microfiber cloth. If you want to sanitize the lens afterward, 70% isopropyl alcohol on a microfiber cloth is recommended.

### **Can I purchase replacement parts for Trimble HoloTint?**

Extra mounting brackets will be available for \$50 each for users looking to share HoloTint lenses across multiple HoloLens devices. Please contact [ftgsales@trimble.com](mailto:ftgsales@trimble.com) with any inquiries. Replacement lenses are not available.

### **Do the photochromic lenses degrade over time?**

All transition lenses can lose their ability to darken over time after many light/dark cycles. On average, photochromic lenses will begin to wear out after about three years of everyday use.

### **How long is the warranty for the lens?**

Trimble HoloTint comes with a 12-month standard manufacturer's warranty from the time of shipment from Trimble's warehouse or purchase from an authorized reseller. This warranty does not cover user-inflicted damage, wear-and-tear, or lens degradation.

### **Is there an extended warranty and/or accidental damage protection available?**

Not at this time. Please contact us [here](#) with any questions or concerns.

### **How do I receive technical support for Trimble HoloTint?**

For technical assistance, please contact [ftgsupport@trimble.com](mailto:ftgsupport@trimble.com) or call 1-800-865-7435 (Monday to Friday, 9am to 7pm).

-- Images --

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