

# Radiation Protection Eyewear

## Why Wear Protective Lenses?

Dr Ziv Haskal, Professor of Radiology and Director of Vascular and Interventional Radiology, New York Presbyterian Hospital-Columbia University New York, issued this advice to fellow interventional radiologists at the SIR 2004 meeting. He presented a small study that suggests interventional radiologists are at risk for posterior subcapsular cataract formation and later talked to Interventional News.

Ziv Haskal explained to Interventional News how the study investigating posterior subcapsular (PSC) cataract formation in interventional radiologists, conducted in association with Basil Worgul, a professor of radiation biology in ophthalmology and radiology, and ophthalmologist Dr Anna Junk, came about.

"It was a serendipitous event," said Haskal, "a colleague of mine had come to have his eyes looked at because of another medical issue with them and met Dr Basil Worgul, who is a world renowned expert in radiation eye injury research. My colleague told me that he had been surprised to have been diagnosed with this (PSC cataract) by Dr Worgul."

Dr Haskal's colleague therefore advised him to get his eyes checked as well, "I went down to meet Basil Worgul, who it turns out is an ophthalmology researcher, but also has an appointment in the department of radiology in my own hospital. He had never heard of an interventional radiologist – like most people – so I talked to him about what we did and we created this study."

Haskal, Worgul and Junk looked for an opportunity to conduct a small study in a timely fashion. This led them to choose to conduct the study during the AIMsymposium in New York. The equipment used by Worgul was a Nidek EAS1000 Scheimpflug and retroillumination camera. "He (Worgul) made peace with moving the unit to the downtown conference, which was kind enough to give us some booth space. Our target was to get 30 physicians with questionnaires and studies on site as a pilot study for a larger study, to try to at least define whether we were in fact an at risk population. We actually had 59 practicing interventional radiologists participate in a couple of days."

According to Haskal, this was a feasibility study to define if there was something to study and, if there was, to give some sense of the size and shape further studies would need to be.

In the 59 interventional radiologists aged between 29 and 62 (median age 35), PSC cataracts were found in five participants and an additional 22 had evidence of PSC changes – opacities in the posterior area of the lens. One interventional radiologist had undergone cataract surgery before being screened in the study.





## Case Study: The effectiveness of lead lenses in reducing radiation exposure.

In a series of tests, optically ground prescription lenses of glass, leaded glass, and plastic were exposed to radiations that simulated routine angiography. Radiations transmitted through the lenses were measured. Results showed that plastic provided no protection, regular glass provided moderate protection and high lead content glass reduced radiation transmission by approximately 70%. The leaded glass that Imaging Solutions uses blocks 97% and up to 150kp.

Relatively high doses of radiation can damage the conjunctiva, iris, sclera and blood vessels of the retina. The lens of the eye, however, is the critical site, for it may sustain irreversible damage from a relatively low dose of radiation. Low doses will produce only a temporary reaction in the other ocular structures.

The sensitivity of the lens to radiation is felt to be due to the failure of normal cell replacement. The lens is surrounded by a capsule. On the anterior surface beneath this capsule is a layer of attended or cuboid cells which comprise the epithellum of the lens and allow for normal metabolism of the lens. At the peripheral border or equator of the lens, these cells become progressively elongated and are transformed into the structure of the lens proper. Von Sallman demonstrated that cytologic damage from radiation to the lens consists of a temporary cessation of mitosis, cell death, and occasional abnormal mitosis produce bizarre cells. Because of the enveloping capsule of the lens, these damaged or bizarre cells can't be sloughed but instead are pushed or migrate to the posterior pole of the lens' where early radiation-induced cataract is first clinically manifest. Subsequent changes may also be observed in the anterior pole, with progressive opacification of the cortex eventually forming a mature and non-specific cataract.

Until now the only protective devices have been heavy cumbersome lead goggles. These are generally not used because of inconvenience and discomfort. Commercially available prescription lenses for ordinary glasses are made of either plastic or glass and therefore offer no or inadequate protection. There are two basic types of glass lenses, and these differ significantly in lead content. Ordinary glass lenses called "crown glass" are used by most people. A less common glass, known to opticians as "hi-lite", happens to have relatively high lead content which allows for a thinner lens than would otherwise be required. It is normally used as a substitute for extremely thick lenses.

The below experiment was designed to determine if significant protection from radiation is provided by wearing high lead content glass instead of ordinary glass or plastic lenses.

"An age-related cataract, the thing we think about conventionally, is in the front of the lens," explains Dr Ziv Haskal, Professor of Radiology and Director of Vascular and Interventional Radiology, New York Presbyterian Hospital-Columbia University New York. These happen in the back of the lens, a completely different area. Radiation is not the only thing that causes this, people can have PSC cataracts from diabetes, from steroids etc., which is why it is important to look for these co-factors and the need for a large enough population to eliminate these."

Asked what the natural occurrence of PSC cataracts was, Haskal replied, "That's the tricky thing!" The accepted level under which radiologists are told they have no risk of cataracts is 200 rads (or 2,000 milligray). However, this appears to be a false threshold, and it is more likely to be a continuous spectrum of dosing. According to Haskal, the results of this study "exceed the expected amount for both age of practitioner and what would be expected for a baseline finding. It is more than we expected to find, and that is why made this conclusion where it increased risk."

On future studies, Haskal said, "We have broad ideas, although we do not have grant support yet. We have compiled a team of people with particular expertise around this, including some very well known expert epidermiologists. As a result of this feasibility study, one has agreed to join us in planning the next step. We have some summer research planned, as well to do better dosimetry for a practitioner. In other words, what people are actually getting exposed to at room time so we can do some better modelling of this."



MAVIG



## BR126

The BR126 is designed to best protect the user's eyes from scattered radiation from all angles of incidence. This requirement has been effectively addressed in the design of the glasses by means of large-area X-ray protective glazing and two side radiation protection zones that are closely connected to the front lenses.

- The nose pads are flexibly adjustable for an ergonomic and individual fit
- Materials used ensure the greatest possible freedom from allergies
- Shape and material support the avoidance of injury risks
- Easy cleaning and very good resistance to chemical influences (resistance to disinfectants)

BR126

MVG-BR126

**MAVIG glasses** are manufactured with optical radiation protective glass of the highest quality. Outstanding light transmission and optically faultless vision are guaranteed. Immaculate workmanship and adaptability in each configuration are a must for us. This guarantees eye protection of the highest quality for medical radiation applications.

### Specifications

| Bridge | Temple | Lens W. | Weight |
|--------|--------|---------|--------|
| 18 mm  | 130 mm | 55 mm   | 80 g   |

| Prescription | Plano, Single Vision, Bifocal FT-28, Progressive                                        |
|--------------|-----------------------------------------------------------------------------------------|
| Colour       | Cocoa/Light Blue, Cocoa/Mandarin, Midnight/Regatta, Sandstone/Orange, Stardust/Curacao, |



Cocoa/Light Blue



Midnight/Regatta



Cocoa/Mandarin



Sandstone/Orange



Stardust/Curacao



## BR130

The anatomically optimized design of the BR130 X-ray protection glasses ensures continuous radiation protection – from the nose to the temple.

- Continuous radiation protection
- Optical corrections are feasible for single / multifocal lenses
- Anti-reflective coating on the lenses as standard
- Easy cleaning and very good resistance to chemical influences (resistance to disinfectants)

BR130

MVG-BR130

### Specifications

|                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                     | <b>Temple</b>                                                                      | <b>Lens W.</b>                                                                      | <b>Weight</b>                                                                       |
| 20 mm                                                                             | 130 mm                                                                             | 54 mm                                                                               | 95 g                                                                                |

|                     |                                                  |
|---------------------|--------------------------------------------------|
| <b>Prescription</b> | Plano, Single Vision, Bifocal FT-28, Progressive |
| <b>Colour</b>       | Shiny Onyx/Graphit, Shiny Onyx/Bordeaux          |



Shiny Onyx/Bordeaux



Shiny Onyx/Graphit



## BR125

Seamless eye protection: The entire eye rim with the adjoining lateral protection zones is made of the patented leadfree protective material "Trielle".

- Extended lateral protective zone
- X-ray safety glasses suitable for spectacle wearers
- Allergy-free due to high-quality plastic material
- Super anti-reflective lenses for relaxed, fatigue-free vision
- Easy cleaning and superior resistance against chemical influences (resistance to disinfectants)

BR125

MVG-BR125

### Specifications

|                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                     | <b>Temple</b>                                                                      | <b>Lens W.</b>                                                                      | <b>Weight</b>                                                                       |
| 18 mm                                                                             | 130 mm                                                                             | 62 mm                                                                               | 140 g                                                                               |

|                     |                                                  |
|---------------------|--------------------------------------------------|
| <b>Prescription</b> | Plano, Single Vision, Bifocal FT-28, Progressive |
| <b>Colour</b>       | Sahara, Flint Stone                              |



Sahara



Flint Stone





## 9941 Ultralite

The 9941 Ultralite lead glasses come standard with a rubberized nose bridge. These protective eyewear are designed to offer comfort and provide protection for the entire eye area without the need of additional lead side shields. The 9941 glasses are a popular frame and are ideal for those who have a high power prescription. Available in 2 sizes and optional adjustable nose pads for regular sized frame (9941A).

9941 Ultralite

PTM-RE-9941/9941A/994153



### Specifications

| Bridge | Temple | Lens W. | Weight |
|--------|--------|---------|--------|
| 22 mm  | 130 mm | 55 mm   | 64 g   |

| Prescription | Plano, Single Vision, Bifocal FT-28, Progressive |
|--------------|--------------------------------------------------|
| Colour       | Silver, Black, Red, Blue                         |



## 99 Ultralite

The 99 Ultralites provide a wide area of protection against x-ray. Their high curvature provide adequate lateral protection which eliminates the need for side shields. The 99 comes in 2 sizes and an optional soft rubber nose bridge for additional support and comfort (99R). (Blue only available in regular size and Fuchsia only available in small).

99 Ultralite

PTM-RE-99



### Specifications

| Bridge | Temple | Lens W. | Weight |
|--------|--------|---------|--------|
| 15 mm  | 120 mm | 63 mm   | 63 g   |

| Prescription | Plano, Single Vision, Bifocal FT-28, Progressive                                |
|--------------|---------------------------------------------------------------------------------|
| Colour       | Brown, Black, Blue, Silver, Teal, Light Purple, Light Blue, Light Pink, Fuschia |



## 98 Superlite

The 98 Superlite is an ultra light-weight frame designed for comfort. Its high curvature provides enhanced lateral/side protection against x-ray. Rubberized temples provide a secure, comfortable fit.

98 Superlite

PTM-RE-98



### Specifications

| Bridge | Temple | Lens W. | Weight |
|--------|--------|---------|--------|
| 15 mm  | 120 mm | 63 mm   | 63 g   |

| Prescription | Plano       |
|--------------|-------------|
| Colour       | Clear Hazel |

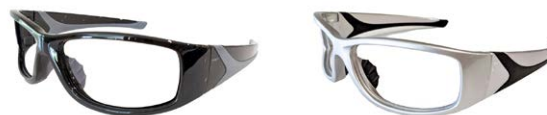


## Circuit

The Circuit lead glasses frame features wrap-around lenses which maximize lateral protection without the use of side shields. Rubberized temples and nose pads provide excellent comfort and grip. The Circuit's modern style combined with its optimized functionality ensure long lasting quality and protection.

**Circuit**

PTM-RE-CIRC



### Specifications

|                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                     | <b>Temple</b>                                                                      | <b>Lens W.</b>                                                                      | <b>Weight</b>                                                                       |
| 18 mm                                                                             | 135 mm                                                                             | 60 mm                                                                               | 79 g                                                                                |

|                     |                                    |
|---------------------|------------------------------------|
| <b>Prescription</b> | Plano Only                         |
| <b>Colour</b>       | Silver/Black, Red/Grey, Black/Grey |



## Onyx

Deep stylistic curves and lenses combine style with lateral x-ray radiation protection. The Onyx frame features a ventilated nose bridge providing grip, reduced fogging, and comfort.

**Onyx**

PTM-RE-ONYX



### Specifications

|                                                                                     |                                                                                      |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                       | <b>Temple</b>                                                                        | <b>Lens W.</b>                                                                        | <b>Weight</b>                                                                         |
| 19 mm                                                                               | 135 mm                                                                               | 68 mm                                                                                 | 71.8 g                                                                                |

|                     |                          |
|---------------------|--------------------------|
| <b>Prescription</b> | Plano Only               |
| <b>Colour</b>       | Matte Black, Shiny White |



## Razer

The Razer Lead Glasses boast a sleek design while being a lightweight and durable frame. These protective eyewear feature a ventilated nose bridge, rubberized temples, and wide-angle lenses which maximize comfort and protection from x-ray. The modern style and use of light-weight materials make the Razer an excellent choice for long-procedures.

**Razer**

PTM-RE-RAZER



### Specifications

|                                                                                     |                                                                                      |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                       | <b>Temple</b>                                                                        | <b>Lens W.</b>                                                                        | <b>Weight</b>                                                                         |
| 17 mm                                                                               | 135 mm                                                                               | 58 mm                                                                                 | 62.5 g                                                                                |

|                     |                                                             |
|---------------------|-------------------------------------------------------------|
| <b>Prescription</b> | Plano, Single Vision, Bifocal FT-28, Progressive            |
| <b>Colour</b>       | Matte Green, Matte Black, Matte Grey, Matte Blue, Matte Red |



## Malibu

The Malibu lead glasses frame modernizes the classic wayfarer design and is offered in several tasteful color selections. While not one of the most protective styles for lateral and wide-angle x-ray protection, the Malibu is a stylish option for those requiring basic radiation protection at an affordable price.

**Malibu**

PTM-RE-MALIB



### Specifications

|               |               |                |               |
|---------------|---------------|----------------|---------------|
|               |               |                |               |
| <b>Bridge</b> | <b>Temple</b> | <b>Lens W.</b> | <b>Weight</b> |
| 20 mm         | 155 mm        | 54 mm          | 68.1 g        |

|                     |                                                   |
|---------------------|---------------------------------------------------|
| <b>Prescription</b> | Plano, Single Vision, Bifocal FT-28, Progressive  |
| <b>Colour</b>       | Matte Blue, Matte Black, Matte Brown, Gloss Black |



## Mako

The Mako lead glasses frame is boat captain approved with its unique patterns and high curve lenses which maximize radiation protection coverage. Integrated side shields equipped with lead strip side shields provide essential lateral x-ray protection.

**Mako**

PTM-RE-MAKO



### Specifications

|               |               |                |               |
|---------------|---------------|----------------|---------------|
|               |               |                |               |
| <b>Bridge</b> | <b>Temple</b> | <b>Lens W.</b> | <b>Weight</b> |
| 15 mm         | 130 mm        | 65 mm          | 69.3 g        |

|                     |            |
|---------------------|------------|
| <b>Prescription</b> | Plano Only |
| <b>Colour</b>       | Grey/Green |



## XGuard

The XGuard lead goggles feature a clear insert, lead strip side shields for lateral coverage, and tasteful color options.

**XGuard**

PTM-RE-XGUARD



### Specifications

|               |               |                |               |
|---------------|---------------|----------------|---------------|
|               |               |                |               |
| <b>Bridge</b> | <b>Temple</b> | <b>Lens W.</b> | <b>Weight</b> |
| 18 mm         | 135 mm        | 58 mm          | 81.8 g        |

|                     |                                                  |
|---------------------|--------------------------------------------------|
| <b>Prescription</b> | Plano, Single Vision, Bifocal FT-28, Progressive |
| <b>Colour</b>       | Black/Woodgrain, Matte Black                     |



## Proguard LeadR

The LeadR Lead Goggles feature a soft, ventilated nose bridge with rubberized temples for premium comfort. Each LeadR eyewear frame comes with the added protection of 0.50mm leaded side shields and the ability to extend that side protection into an additional panel.

**Proguard LeadR**

PTM-RE-LEADR

### Specifications

|                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                     | <b>Temple</b>                                                                      | <b>Lens W.</b>                                                                      | <b>Weight</b>                                                                       |
| 14 mm                                                                             | 120 mm                                                                             | 66 mm                                                                               | 112 g                                                                               |

|                     |                                              |
|---------------------|----------------------------------------------|
| <b>Prescription</b> | Plano Only                                   |
| <b>Colour</b>       | Black, Grey/Pink, Green/Yellow, White/Purple |



## Comet

Similar to the Proguard LeadR's frame, the Comet Lead goggles are an affordable option providing excellent coverage against x-ray. The Comet's unique side shield configuration allows for lead shielding to be placed on the frame exterior and wrap around the entire lens area, providing a complete seal from scatter radiation.

**Comet**

PTM-RE-COMET

### Specifications

|                                                                                     |                                                                                      |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                       | <b>Temple</b>                                                                        | <b>Lens W.</b>                                                                        | <b>Weight</b>                                                                         |
| 19 mm                                                                               | 114 mm                                                                               | 59 mm                                                                                 | 78.3 g                                                                                |

|                     |                                                  |
|---------------------|--------------------------------------------------|
| <b>Prescription</b> | Plano, Single Vision, Bifocal FT-28, Progressive |
| <b>Colour</b>       | Blue, Grey/Orange, Pink                          |



## Centrist

The Centrist lead glasses are a rectangular-style, safety frame made from high quality nylon and has permanent extended side shields for added x-ray protection. The sleek black with clear insert frame has an adjustable nosepiece that provides comfort and a secure fit.

**Centrist**

PTM-RE-CENT

### Specifications

|                                                                                     |                                                                                      |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                       | <b>Temple</b>                                                                        | <b>Lens W.</b>                                                                        | <b>Weight</b>                                                                         |
| 17 mm                                                                               | 140 mm                                                                               | 55 mm                                                                                 | 88 g                                                                                  |

|                     |                                                  |
|---------------------|--------------------------------------------------|
| <b>Prescription</b> | Plano, Single Vision, Bifocal FT-28, Progressive |
| <b>Colour</b>       | Black Crystal                                    |



## 53 Wrap

The 53 wrap is constructed of durable nylon that exhibits superior flexibility while minimizing potential breakage. Its full saddle bridge provides maximum comfort and evenly distributes weight over the nose.

**53 Wrap**

PTM-RE-53



### Specifications

|                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                     | <b>Temple</b>                                                                      | <b>Lens W.</b>                                                                      | <b>Weight</b>                                                                       |
| 16 mm                                                                             | 135 mm                                                                             | 58 mm                                                                               | 84 g                                                                                |

|                     |                                                  |
|---------------------|--------------------------------------------------|
| <b>Prescription</b> | Plano, Single Vision, Bifocal FT-28, Progressive |
| <b>Colour</b>       | Black, Tortoise                                  |



## 70 Astroflex

The Astroflex Lead goggles feature molded side shielding and are fitted to the brow for increased splash protection. The goggle's temple length and frame angle are adjustable for a uniform custom fit. The model 70s comes with leaded side shields for necessary lateral x-ray coverage.

**70 Astroflex**

PTM-RE-70S



### Specifications

|                                                                                     |                                                                                      |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                       | <b>Temple</b>                                                                        | <b>Lens W.</b>                                                                        | <b>Weight</b>                                                                         |
| 19 mm                                                                               | Adjustable                                                                           | 54 mm                                                                                 | 88 g                                                                                  |

|                     |                                                  |
|---------------------|--------------------------------------------------|
| <b>Prescription</b> | Plano, Single Vision, Bifocal FT-28, Progressive |
| <b>Colour</b>       | Clear/Blue                                       |



## Tugga Baby

Tugga Baby pediatric glasses provide essential protection during medical fluoroscopy and feature a universal fit with its adjustable headband. These eyewear also come with a matching, Tugga baby eyewear case and a microfiber cleaning cloth.

**Tugga Baby**

PTM-RE-BABY



### Specifications

|                                                                                     |                                                                                      |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                       | <b>Temple</b>                                                                        | <b>Lens W.</b>                                                                        | <b>Weight</b>                                                                         |
| 18 mm                                                                               | Adjustable                                                                           | 46 mm                                                                                 | 42 g                                                                                  |

|                     |                   |
|---------------------|-------------------|
| <b>Prescription</b> | Plano             |
| <b>Colour</b>       | Pink, Green, Blue |



## Fitguard Alpha

The Fitguard Alpha fitover is a versatile, high quality nylon frame. Featuring Flexfit technology, the Fitguard's temples can be easily adjusted for a secure, comfortable fit. The Alpha model is ideal for fitting over wide prescription eyewear while still providing a secure and comfortable fit. With the most balanced weight distribution, the Fitguard Alpha is our most popular fitover model. Blacked out side shields provide a streamlined look as well as 0.50mm lead equivalent protection.

**Fitguard Alpha**

PTM-RE-FGUARDA



### Specifications

|                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                     | <b>Temple</b>                                                                      | <b>Lens W.</b>                                                                      | <b>Weight</b>                                                                       |
| 17 mm                                                                             | 145 mm                                                                             | 69 mm                                                                               | 91 g                                                                                |

|                     |             |
|---------------------|-------------|
| <b>Prescription</b> | Plano Only  |
| <b>Colour</b>       | Matte Black |



## Fitguard Beta

The Fitguard Beta fitover is a versatile, high quality nylon frame. Featuring Flexfit technology, the Fitguard lead glasses' temples can be benched (adjusted) easily for a secure, comfortable fit. The Beta model is ideal for fitting over standard prescription eyewear with square or rounded lenses. Blacked out side shields provide a streamlined look as well as 0.50mm lead equivalent protection.

**Fitguard Beta**

PTM-RE-FGUARDB



### Specifications

|                                                                                     |                                                                                      |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                       | <b>Temple</b>                                                                        | <b>Lens W.</b>                                                                        | <b>Weight</b>                                                                         |
| 18 mm                                                                               | 150 mm                                                                               | 64 mm                                                                                 | 108 g                                                                                 |

|                     |             |
|---------------------|-------------|
| <b>Prescription</b> | Plano Only  |
| <b>Colour</b>       | Matte Black |



## 90 Fitover

Designed to fit over prescription eyewear, the 90 fitover lead glasses are an excellent choice for those requiring protection against x-ray and liquid splashes. The large, clear side shields protect the user from lateral exposure while eliminating the "tunnel" effects of lookalikes.

**90 Fitover**

PTM-RE-90



### Specifications

|                                                                                     |                                                                                      |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                       | <b>Temple</b>                                                                        | <b>Lens W.</b>                                                                        | <b>Weight</b>                                                                         |
| 14 mm                                                                               | 120 mm                                                                               | 66 mm                                                                                 | 88 g                                                                                  |

|                     |             |
|---------------------|-------------|
| <b>Prescription</b> | Plano Only  |
| <b>Colour</b>       | Matte Black |



## Classic Metal

The Classic Metal lead glasses are a lightweight frame made of optical steel with bronze electroplate. This durable frame comes standard with contoured 0.50mm LE side shields for maximum lateral coverage. Non-slip, silicone nose pads offer easy adjustability and allow the Modern Metal frame to fit a wide variety of face types.

**Classic Metal**

PTM-008



### Specifications

|  Bridge |  Temple |  Lens W. |  Weight |
|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| 19 mm                                                                                    | 140 mm                                                                                    | 54 mm                                                                                       | 64 g                                                                                       |

|                     |                                                  |
|---------------------|--------------------------------------------------|
| <b>Prescription</b> | Plano, Single Vision, Bifocal FT-28, Progressive |
| <b>Colour</b>       | Gold, Nano Blue                                  |



## 553S Metalite

The model 553 is a metal frame featuring custom fitted 0.50mm lead strip side shields that create a seal to the front lenses for complete lateral coverage. Non-slip, silicone nose pads provide easy adjustability and allow the frame to fit a wide variety of face types.

**553S Metalite**

PTM-553S

### Specifications

|  Bridge |  Temple |  Lens W. |  Weight |
|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 18 mm                                                                                      | 140 mm                                                                                      | 50 mm                                                                                         | 62 g                                                                                         |

|                     |                                                  |
|---------------------|--------------------------------------------------|
| <b>Prescription</b> | Plano, Single Vision, Bifocal FT-28, Progressive |
| <b>Colour</b>       | Silver                                           |



## 661 Metalite

The model 661/662S is a metal frame featuring custom fitted 0.50mm lead strip side shields that create a seal to the front lenses for complete lateral coverage. Non-slip, silicone nose pads provide easy adjustability and allow the frame to fit a wide variety of face types.

**661 Metalite**

PTM-661

**661S Metalite - Side Shield**

PTM-661S



### Specifications

|  Bridge |  Temple |  Lens W. |  Weight |
|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 18 mm                                                                                      | 144 mm                                                                                      | 52 mm                                                                                         | 70 g                                                                                         |

|                     |                                                  |
|---------------------|--------------------------------------------------|
| <b>Prescription</b> | Plano, Single Vision, Bifocal FT-28, Progressive |
| <b>Colour</b>       | Gold                                             |



## Nike Brazen

The Nike Brazen lead glasses feature a ventilated nose bridge for grip, comfort, and reduced fogging. The Brazen's frame is constructed of lightweight nylon and offers superior coverage and protection.

**Nike Brazen**

PTM-N-BR



### Specifications

| Bridge | Temple | Lens W. | Weight |
|--------|--------|---------|--------|
| 16 mm  | 140 mm | 60 mm   | 75 g   |

| Prescription | Plano, Single Vision, Bifocal FT-28, Progressive |
|--------------|--------------------------------------------------|
| Colour       | Matte Black with Blue, Gloss Black               |



## Nike Premier

The Nike Premier lead glasses offer a diverse selection of colors and tasteful design elements. The Premier protective eyewear feature large rectangular lenses to provide adequate x-ray protection and coverage.

**Nike Premier**

PTM-N-PRMR



### Specifications

| Bridge | Temple | Lens W. | Weight |
|--------|--------|---------|--------|
| 13 mm  | 135 mm | 60 mm   | 67.8 g |

| Prescription | Plano, Single Vision, Bifocal FT-28, Progressive |
|--------------|--------------------------------------------------|
| Colour       | Matte Tortoise, Matte Anthracite, Matte Black    |



## Nike Rabid

Designed to fit over prescription eyewear, the 90 fitover lead glasses are an excellent choice for those requiring protection against x-ray and liquid splashes. The large, clear side shields protect the user from lateral exposure while eliminating the "tunnel" effects of lookalikes.

**Nike Rabid**

PTM-N-RABID



### Specifications

| Bridge | Temple | Lens W. | Weight |
|--------|--------|---------|--------|
| 14 mm  | 145 mm | 63 mm   | 63 g   |

| Prescription | Plano Only         |
|--------------|--------------------|
| Colour       | Matte Black/ White |



## Wiley-X P-17

The Wiley-X P-17 lead glasses are low-profile and lightweight, making them a fan favorite. These protective frames boast highly curved lenses for maximum x-ray protection. The P-17 eyewear are ideal for medium to large facial structures.

**Wiley-X P-17**

PTM-WX-P17



### Specifications

|                                                                                   |                                                                                    |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                     | <b>Temple</b>                                                                      | <b>Lens W.</b>                                                                      | <b>Weight</b>                                                                       |
| 18 mm                                                                             | 125 mm                                                                             | 68 mm                                                                               | 84.5 g                                                                              |

|                     |                                 |
|---------------------|---------------------------------|
| <b>Prescription</b> | Plano Only                      |
| <b>Colour</b>       | Gloss Black, Matte Black, Brown |



## Wiley-X Brick

The Wiley-X Brick lead glasses offer a flexible rubber temple for support during intense activities while the removable Facial Cavity Seal provides maximum splash protection. These protective eyewear boast highly curved lenses for excellent x-ray protection.

**Wiley-X Brick**

PTM-WX-BRICK-MBLK



### Specifications

|                                                                                    |                                                                                     |                                                                                      |                                                                                      |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Bridge</b>                                                                      | <b>Temple</b>                                                                       | <b>Lens W.</b>                                                                       | <b>Weight</b>                                                                        |
| 19 mm                                                                              | 140 mm                                                                              | 54 mm                                                                                | 64 g                                                                                 |

|                     |                                       |
|---------------------|---------------------------------------|
| <b>Prescription</b> | Plano Only                            |
| <b>Colour</b>       | Matte Black, Matte Black with Rx Trim |



## Full Acrylic Face Shield

The Full Acrylic Face Shield utilizes a lead impregnated acrylic shield suspended from a dual adjustable headpiece. This lead face shield provides additional x-ray protection due to its larger lead impregnated shield. Because of the multi-adjustable headpiece, you can angle the mask to protect from radiation in many different positions as well as adjust the size to comfortably fit your head.

**Full Acrylic Face Shield**

PTM-450FPM



## Panoramic Acrylic Face Shield

The Panoramic Acrylic Face Shield utilizes a lead impregnated acrylic shield suspended from a dual adjustable headpiece. This lead face shield provides additional x-ray protection due to its larger lead impregnated shield. Because of the multi-adjustable headpiece, you can angle the mask to protect from radiation in many different positions as well as adjust the size to comfortably fit your head.

**Panoramic Acrylic Face Shield**

PTM-400PSM

