**Selecting a dot size**

Three factors determine what the best dot size would be:

1. **First the dot must be the appropriate size for the target.** You don't want a dot so big it covers the animal or aiming point on the target. Remember, as the distance to target increases so does the coverage of the dot on the target. For example if a 1/2 minute dot was installed in your 12X scope and you were shooting at prairie dogs at 600 yards the dot will cover 3 inches (.5 X 6 = 3). The average prairie dog is only 1-1/2 inches wide. As you can see a smaller 1/4 moa dot would be more appropriate.

2. **Second factor used to determine proper dot size is the magnification of the scope.** Unfortunately this is one of the most difficult concepts for most dot users to understand. Simply put, the higher the magnification of the scope the smaller the subtension of the dot that can be installed. So often dots too small for the magnification are requested. For example a 1/8 moa dot would be ordered to be installed in a low magnification scope. If made it would be impossible to see even for the best of eyes.

   This 1/8 minute dot is a standard dot size for both the 24X and 36X scopes. To give you an idea of comparative size: if a 1/8 inch dot that measures .0024" were installed in a 6X scope it would subtend 6 times more on the target because the power of the scope is 1/6th the power of a 36X scope. This .0024" dot would therefore cover 6/8th or 3/4 minute if it was installed in a 6X scope. Imagine, if you can, a dot that would appear 6 times smaller than a target dot in a 36X scope! Impossible to see and not a very good choice.

3. **The third factor for proper selection of a dot after the first two are considered is "How good are your eyes?" Generally speaking younger eyes can see smaller dots.**

   It is impossible know what size dot you will be able to see when the smaller sizes are requested. We use our best judgement based on the three above factors when determining an appropriate size. See the reticle subtension chart for our smallest and largest recommended dot sizes for various scopes.

**Standard Dot Sizes Available**

We offer four standard (No. 3) dot sizes "off the shelf". Cost is less than any other sizes that would be considered custom size dots made to order.

Three target dots in .0017", .0024" and .0030" sizes on target crosshairs may be ordered. A .0067" dot on .00045" lines is a standard size for competitive silhouette shooting and is appropriate for hunting on medium to large size game.

**Dot sizes in variable power scopes**

Any dot or other reticle installed in a variable power scope or Second Focal Plane variable power boost will change subtension as the power is increased or decreased. Dot sizes are typically ordered and installed at the maximum power setting. Most Leupold variable power scopes have zoom ratios of about 3X.

A dot with a specified size at maximum power will subtend 3X or more at the lowest power setting, depending on variable power model and twice as much at the mid power setting.

Unless you specify a power setting, we will do calculations at the maximum setting. You may, however, specify a size at any other power setting.

Unless a dot is installed at the intersection of two lines it will always be oval shaped. The smaller the dot the more oval shaped it becomes. We cannot make these dots round because our reticles are "mechanical".

Keep this in mind when ordering multiple dot reticles. Target crosshairs allow a more round dot and fine crosshairs will produce a less round dot. We make and measure dot subtensions over the longest part of the dot.

Dots or any reticle we supply will always appear black. All reticles, except for the dots, are actually silver. Because the light comes through the objective end of the scope the reticle is in a shadow and will always appear black. Unless the reticle could be illuminated with a light source it will always appear black. We cannot illuminate the reticle.

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**Reticle No. 1**

Sometimes referred to as a GERMAN POST reticle. Except for the crosshair reticle it is one of the oldest style reticles in continuous use since the early days of rifle scopes. Designed and used in early German scopes it is still the "standard" reticle in use today in Europe because of the low light hunting that is done mostly at dusk and dawn.

Visibility under low or poor light, close-in shots, shots taken in heavy brush or when a quick shot must be taken at a moving target makes this reticle ideal under these conditions.

**Reticle No. 2**

This tapered post with a horizontal crosshair reticle has the same application as reticle No.1 but does not obscure as much of the target. Also used for intermediate to longer distance shooting on average to large size game. Some who prefer this style reticle like it for shooting at moving game.

Tips of the tapered post are not available in custom sizes and it cannot be installed upside down.

See the reticle table of subtensions. The base of the tapered post is the same appearance as a No. 1 reticle. Post tip is the same amount above the horizontal hair as the width of the post and forms a square aiming point above center.

**Reticle No. 3**

By far our most popular reticle. It is a very pleasing reticle to the eye because of it's simplicity. The round dot naturally draws the eye to the center.

Two style dot reticles are available. First is the target dot reticle installed on target style crosshairs. Often referred to as a floating dot reticle. The supporting lines are so fine that under certain conditions they have the appearance of disappearing.

The second style dot reticle, having medium to larger size dots, would be installed on fine appearing crosshairs that measure .00045".

**Line sizes available with dots**

To give you an idea of the actual size of the target crosshairs they are 3.3 microns. 1 micron is 1 millionth of a meter or .00004". Another comparison would be this line is about 20 times smaller than a human hair.

There are certain limitations to consider whether or not a target dot would be practical in your scope.

First, very small dot sizes must be installed on the target lines and would include dots .0024" and smaller. As an example 1/2 moa in 6X, 1/4 moa in 12X, 3/16 moa in 20X or 1/8 moa in 24X or 36X scopes. All these dots measure .0024" or smaller. See the reticle chart showing dot sizes and line sizes available in the various Leupold scopes.

Second, if a very large dot size is ordered it may be too massive for the target lines to support and could break at recoil. We would use the .00045" lines with the larger dots. Lines sizes over .00045" are not available with No. 3 dot reticles.

Target dots are available in standard or custom sizes when installed in a variable power boost.
**Reticule No. 4**

Three posts with crosshair (3PCH), this reticle is a variation of the Duplex reticle.

With the No. 4 and 4a reticle the thick section of the reticle, or the post, is nearly four times broader than a medium duplex and under very low light will be more visible. Thin section dimension at the center is about the same as a medium duplex in the center.

Tip spacing of the No. 4 reticle is approximately the same as a medium duplex. The No. 4a reticle has horizontal and vertical tip spacing twice as wide as the No. 4 reticle.

No. 4e is a European design reticle with a very bold appearance. Posts are seven times bigger than a medium duplex at the wide part. The center crosshair section is the same dimension as a heavy duplex reticle at the center. Consider the 4e if you need the maximum visibility in low light or brush hunting.

Tips of the posts are square. Tip spacing cannot be customized and none of the number 4 reticles can be ordered with custom size lines. Dimension "C" is not shown in the reticle subtension chart because several different spaces are available. Specify if you want narrow or wide spacing.

Dots cannot be added to the lines of these reticles.

**Reticule No. 5**

We assign reticle No. 5 to the traditional LEUPOLD DUPLEX reticle. It was invented by Leupold and is copied by all other scope manufacturers. This has become the standard reticle installed in most hunting style scopes sold for the past 30 years. It is considered by many to be the best all around reticle.

Available in three thicknesses, most of these three can be installed in any Leupold scope. Exceptions would be the extended eye-relief, LPS and Mark 4 fixed power scopes.

Choices are fine duplex, medium duplex or heavy duplex. Fine duplex reticles are factory installed in the 4X12, 6X18 12X, 4.5X14, 6.5X20, 8.5X25 and rimfire scopes. Medium duplex comes in most other fixed and variable power scopes. A heavy duplex is installed mostly in lower powered fixed and variable power scopes.

Dimensions shown in the reticle chart under Fine Duplex apply only to scopes having a 4.5X-14X duplex installed. The "C" dimension spacing will apply. The "A" and "B" dimensions shown in the table are the same as a factory installed reticle would be in a new scope.

Vary X-II scopes sent for medium duplex reticles will have the appropriate "C" dimension spacing to correspond with the range scale on the power ring. Fine and heavy duplex reticles are not available to correspond to the range scale.

We can install any of the three duplex sizes in any compact, fixed power scope, Vary X-II, Vary X-III, 1" tube fixed power scopes including 24X and 36X or SFP variable power boosts.

**Diamond Dot Added to Medium Duplex**

A dot may be added to the center of a medium size duplex that will give the duplex slightly more visibility under low light. It will be diamond shaped and cannot be round.

Not available in custom sizes. Dot subtension is measured across the flats. It is 5.3 times larger than the medium duplex, "A" dimension. See the reticle subtension chart for duplex subtensions.

**Reticule No. 6**

Our reticle number 6 is a plain and simple crosshair reticle. The name crosshair is mistakenly used by many to refer to any style reticle. A duplex is not a crosshair nor is any other style.

We offer three crosshair sizes in all standard Leupold scopes (except LPS).

First is the .00013" target crosshair. As explained under the number 3 reticle, this is the smallest size crosshair that may be installed. It is referred to as a target crosshair because it is customarily installed in high magnification scopes. It subtends the least amount of any reticle we offer. It can be installed in any Leupold scope but should be chosen with caution if it is to be used under low light conditions, dark backgrounds or if your vision is not good.

Second choice is a .00045" fine crosshair. It is more than 3 times bigger than the target crosshair and is more suitable for varmint hunting and for less than perfect eyes. Many benchrest shooters prefer the fine cross hair over the target crosshair because it does not cause eye strain.

This .00045" size is mostly used with multiple dot systems with average size dots.

Third choice is the .0010" medium crosshair. A much more visible reticle than either the target or fine crosshair it is the same size as used with mil-dot reticles. Medium crosshairs CANNOT have multiple dots added or be used with single dot reticles.

These three sizes are considered standard sizes. Multiple dot reticles are installed ONLY on .00013 or .00045 crosshairs and are not available with other size lines.

**Reticule No. 7**

A LEUPOLD exclusive reticle referred to as a LEUPOLD CPC reticle. It is short for "Converging Post Crosshair," or in layman terms a tapered crosshair. The reticle starts big on the edges of the field of view and tapers to the smallest size at the center of the reticle.

Two sizes are offered. The "fine" No. 7 starts out at the edge about the same size as a fine duplex, at the thick part and tapers down in size equivalent to thin section of a fine duplex.

A "medium" No. 7 starts out similar to a medium duplex at the edge and tapers down to about the same size as a medium duplex at the center.

Always specify either a "fine" or "medium" size when ordering. Not available in custom sizes or in EER, LPS or Mark 4 fixed power scopes.

**Reticule No. 9**

This is another LEUPOLD exclusive reticle named the LEUPOLD DOT. It is a variation of the No. 7 (CPC) reticle and has a dot added at the center.

Two size dots are available, either a .0035" or .0060". Tapering crosshairs used with No. 9 reticles are available only in a fine configuration. Custom dot sizes are not available with this reticle and cannot be installed in EER, LPS or Mark 4 fixed power scopes.