

Quantum Arc X User Notes

By BOZEMAN MOUNTAIN WORKS

Dear BackpackingLight.com Customer,

Thank you for your purchase of a Quantum Arc X sleeping bag. Herein you will find some useful guidelines and tips to help you maximize the performance of your Arc X and to help you understand its limitations.

The Quantum Arc X is designed as a cold weather sleeping bag for advanced lightweight backpacker. It is a variable-girth sleeping bag that allows you to adjust girth at the hips and shoulders in response to variable clothing systems you are wearing while sleeping in the bag. The bag was originally designed to complement a cold-weather clothing system that includes a high-loft insulating jacket (e.g., down, PrimaLoft, Polarguard, etc.). The jacket can be worn inside the bag, but we recommend draping it over you and tucking the sleeves down the sides or behind your neck to create better draft protection and allow the jacket's loft to be maintained. In addition, the Quantum Arc X can be used alone for milder temperatures by beginning and intermediate backpackers.

We are reluctant to assign temperature ratings to any sleeping bag. The purpose of temperature ratings are primarily to guide beginners (who may not have a clear understanding of the factors involved in rating sleeping bags) in their buying decisions. Because we do not rate this bag, and only report factual specifications, it is up to you, the user, to identify the appropriate range of temperatures in which this bag should be used. The primary variables that will govern your ability to take this bag to colder temperatures include: shelter type, clothing system used with the bag, and sleeping pad type. Secondarily, of course, you must also consider weather, your metabolism, the amount of moisture that has accumulated in your clothing and sleep system, your body's acclimatization to cold, etc.



The Quantum Arc X has been built with a two inch baffle height. Baffles have been overfilled with an average of 250 g (8.82 oz) of premium quality down* towards the footbox to a height of 7" (double thickness), with thickness decreasing towards the head of the bag, to a loft of approximately 2" (single layer thickness). To maximize the ability to maintain a warm bag, baffles are continuous – thus, before entering your bag at night, you may want to take a few minutes to shift a small amount of down from the sides of the upper (shoulder) and mid (hip) baffles into the center of the baffles. The result should be a loft of 2.5" or so at the baffle midpoints, tapering to a loft of 1.5" or so at the baffle edges. This distribution provides a good balance that maintains insulating down on top of the bag while maintaining enough down in the sides for draft control. For warmer temperatures, down can be shifted back to the sides to decrease baffle thickness at the center of the baffles.

We do not overfill baffles near the chest region. Overfilled baffles waste down, such that any additional down is insulating beyond a point of diminishing returns and bag efficiency (warmth:weight ratio) decreases. In addition, most users will elect to layer an insulating parka inside the bag in the chest area in cold conditions, and baffles may become slightly compressed (even at optimum girth) in the chest area as a result. By ensuring that baffles in the chest area are not overfilled, we minimize the chance that unnecessary compression will occur, and the baffles can loft fully. This baffle compression becomes more important as girth is reduced – so don't overtighten the straps to the point that loft

* Compare this quantity of down fill (8.8 oz) and total average loft (4.0" to 7.0" tapered from head to foot) to other hoodless bags on the market in this weight range: Western Mountaineering LineLite (45 °F, 8 oz fill, 2.5" to 4.0"), Rab Quantum Top Bag (32 °F, 7 oz fill, 2.5" to 4.5"), Feathered Friends Vireo (35 °F, 8.8 oz fill, 3.0" to 5.0").

in the bag or your jacket is inhibited - let your baffles loft! This is an ultralight bag and you have to pay attention if you are going to extend its performance in temperatures down to freezing.

However, to provide a frame of reference, let us communicate the context in which we use this bag. The Quantum Arc X has been used by most often in conjunction with a small, light tarp, a torso-sized sleeping pad, and a Quantum X Bivy Sack, and complemented with a Quantum X Down Balaclava and a light down jacket (2" of single layer loft) with a standard layering system for the rest of the clothing (including base wicking layers and wind shell layers). With this system, we have identified a lower comfort range for most intermediate backpackers of approximately 30 to 40 degrees under windless conditions. In the hands of advanced users, this clothing and sleep system has been comfortable at temperatures into the teens. In optimum conditions (advanced experience level, no wind or sleeping in an enclosed wall shelter, 3/4+ length sleeping pad, and dry clothing), the system has been regularly comfortable at 15 to 20 degrees. Colder temperatures can be achieved by increasing the loft of your clothing system. With a winter-class Polarguard parka and Primaloft pants, Ryan Jordan has taken this sleep system on alpine climbs where temperatures approached zero degrees F.

Hey! There's down plumes in the package, my bag is leaking! Don't worry, your bag is not leaking. Pertex Quantum is among the most downproof ultralight fabrics available. The down feathers you see are residuals from the factory, and are easily cleaned by rolling a "lint remover" (a roller with double-sided masking tape) over the fabric. Do not try to vacuum the down plumes off the fabric surface or you risk damaging the baffles and/or shell seams.

What kind of sleeping pad should I use? Any kind you want! Although the original design was borne from a desire to secure the straps under a 3/4-length sleeping pad, we find that this is a limitation preventing your ability to control the girth appropriately. Thus, we typically place the entire bag on top of the pad, including the straps. "Your mileage may vary!" so experiment and come up with a system that works for you. We regularly use the bag with pads ranging from torso-sized to full-length. The only caveat to using a pad less than 3/4-length is the potential for drafts to enter the bag through the bottom arc opening. This problem can be solved by learning to turn in the bag without taking the entire circumference with you – a skill that is not difficult to learn with practice.

OK, so how do I keep my head warm? Sleep with your normal headwear. Complement it on cold trips with the hood from your insulating parka, or a separate insulated balaclava, or combine the bag with a hooded bivy sack. We find that a down balaclava (Quantum X Balaclava) or synthetic balaclava (Cocoon X Balaclava) is a good complement to this bag because having the headwear turn independently of the bag prevents you from compressing hood loft and/or breathing moisture into the bag's hood insulation.

Please note that detailed Quantum Arc X Specifications and other information can be found at:

<http://www.backpackinglight.com/cgi-bin/backpackinglight/00097.html>

And, a discussion of how a bag like this can be integrated into a clothing and sleep system can be found here:

<http://www.backpackinglight.com/backpackinglight/images/IntegratedSystems.pdf>

Please understand that your Quantum Arc X sleeping bag is a specialty item designed for advanced backpackers wanting to push the limits of lightweight gear. If you take the time to learn about thermoregulation and the impact of environmental conditions on your clothing and sleep system, you may find that your ability to push limits with the Quantum Arc X will exceed that of many other lightweight bags, due primarily to its variable girth, hoodless design that allows you combine it with clothing appropriate to the season.

Godspeed and Go Light!
Ryan Jordan

