What is the difference between Searchlight Sonar & Omni Sonar?

The difference between Omni Sonar and Search Light (spotlight) or sector sonar can be explained through a quick example.

**Searchlight and Sector Sonar:** A periscope on a submarine can only look in one direction at a time and must swing around to see what is in the other directions area by area. Searchlight sonar works in the same way. To find fish, a set of elements move around a center core and shows the fisherman the sea one slice at a time. Since the vessel is not stationary, it is possible for a fisherman to sail by a school of fish without ever seeing it because the fish are out of sonar range by the time the “searchlight” moves to that side of the vessel.

Sector sonar is similar to the searchlight sonar while the slice which the sonar sees is larger, the system must still travel around to the 4 positions.

** Omni Sonar:**
Instead of having one row of sonar elements facing in one direction and moving around 360 degrees over a period of time such as searchlight sonar, Omni sonar has 256 sonar elements on a cylindrical core sending out a continual signal in a full circle of 360 degrees constantly.

The cost difference between Omni, sector, and searchlight sonar is due in part to the number of elements and the complexity of the electronics and software.