



Marketing Bulletin Lasers in the Plastics Industry



ISO9001 Certified

K-TEK's LM02 Laser has been applied with great success in plastics manufacturing on storage silos. Applications have been on plastic pellets and flakes. The customers have previously tried to use ultrasonic, mechanical "yo-yo's" and load cells with limited success. Radar is not suitable because the dielectric of the product is too low.

The bins are relatively small in diameter (10 to 20') and tall in height. This presents a problem for ultrasonic because of the wide beam angle and the ultrasonic energy echoes off of the silo walls and sometimes gives a false signal. Additionally, the material fills and empties with a significant angle of repose and the ultrasonic energy is reflected away instead of back to the receiver.



The mechanical "yo-yo" devices such as R&H's Silo Pilot have a high maintenance cost. One customer thinks that he will get an acceptable payback in maintenance savings alone by replacing the "yo-yo" devices. Many customers have a problem with the plastic pellets covering the weight at the end of the cable and breaking the cable when it is retracted. Load cells have a very high first cost and high maintenance/calibration cost.

The LM02 provides superior performance at a competitive cost since it has no beam divergence (no false echoes off of tank wall) and will measure off of the steep angle of repose.

Some recommendations for installing the LM02 on a plastic silo are:

1. Use the dust tube option with purge ports. Seldom will you need to hook up the purge ports, but they will be there if the need arises. On about 5% of the applications the static buildup is so bad that the dust tubes must be purged to keep dust from collecting on the lens. The problem seems to be most prevalent when located close to the fill chute.
2. Use a metal flange and make sure it is grounded to the silo. This is usually accomplished by proper bolting. This helps dissipate the static buildup. We need a 4" minimum flange size since the dust tubes are 3.75" across.
3. Use lightning protection. The lasers are typically installed on the top of a tall silo out in the opening. We have lost one laser to lightning. Contact the sales department for recommended protection.
4. Use the following settings to ignore dust and fines that are suspended in the silo and to ignore feed falling in front of the laser: Pause: 5 – 10 Sec, Buffer = 5, Reject = 3

K-TEK successfully demonstrated the laser at one plastic manufacturer's site where the laser was purchased for an extended trial period. It should work flawlessly. After a successful trial, there are over 200 silos at this site alone. Plastics are a major potential market for our lasers!



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