

## Thru-Beam

This type of sensor's excess gain is the simplest to measure. **Excess gain is almost exclusively a function of the separation between the source unit and the detector unit.**

When implementing the excess gain for an application, start with the excess gain chart for the thru-beam sensor. Then consider:

- Misalignment of the two units reduces gain
- Dirt in the environment reduces gain

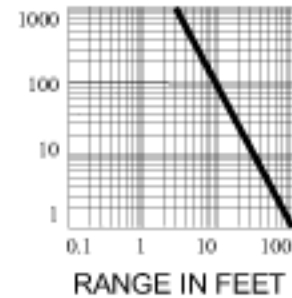


FIGURE 91: TYPICAL GAIN CURVE FOR A THRU-BEAM PHOTOELECTRIC SENSOR

## Diffuse Reflection

Nearly every diffuse reflective sensor has a unique combination of lenses and beam angles. As a result, nearly every sensor has a unique excess gain curve.

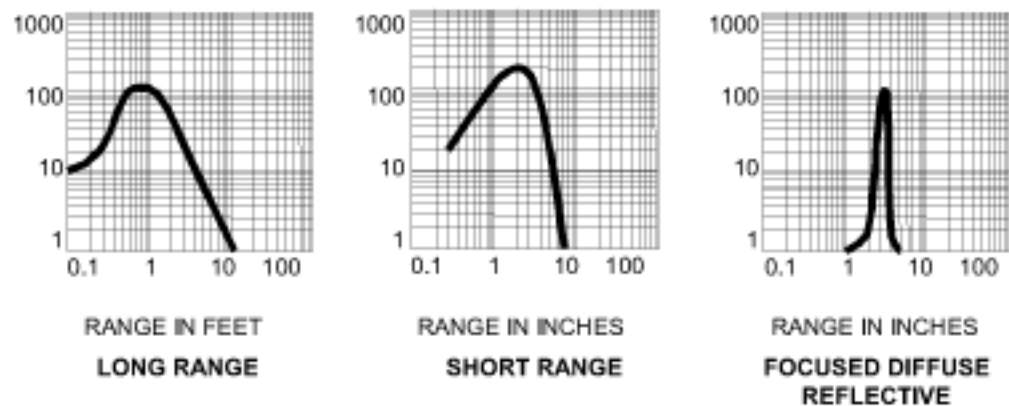


FIGURE 92: DIFFUSE REFLECTION RANGES