

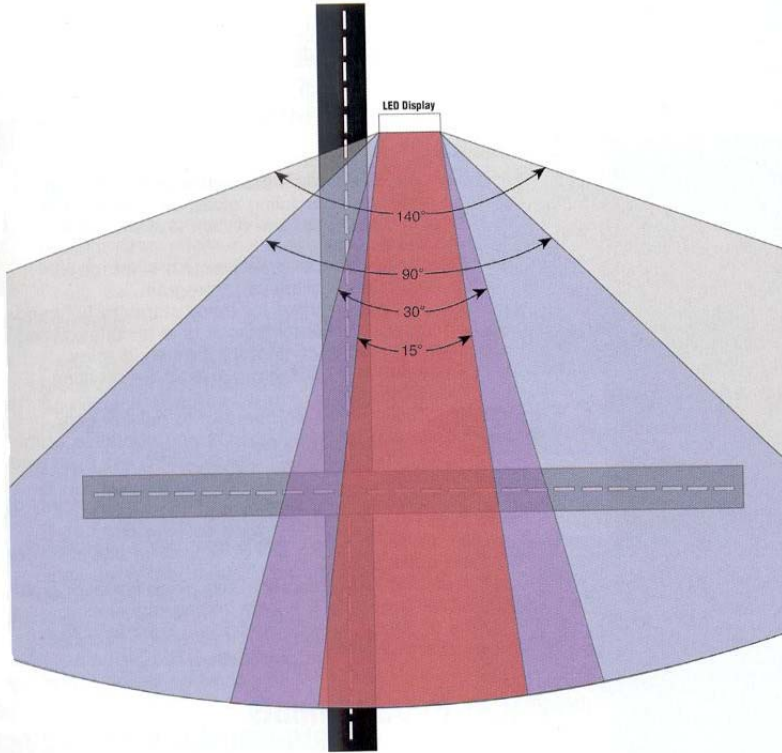


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# Viewing Angles, Viewing Areas and Ranges

## Viewing Angle Comparison



**Industrial Electronic Service** offers displays with various viewing angles to meet the needs of different viewing situations. Some applications require a wide viewing angle; others a focused viewing angle.

**Viewing angle** is determined by the horizontal and vertical points at which the measured light intensity is 50 percent of that measured directly in front of the display

**Actual viewing area** is much greater than the viewing angle depending on site-specific circumstances and ambient light conditions. The shaded viewing angle areas represent minimum viewable areas

## Viewing Ranges (Approximate)

Use this table to help determine the appropriate character size for a display based on viewing distance and the speed at which the audience may be traveling

| Character Size |       | Max. Viewing Distance |        | Max. Viewing Time (seconds) |                     |                     |                     |                     |                     |                      |                      |  |
|----------------|-------|-----------------------|--------|-----------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|--|
| inches         | mm    | feet                  | meters | 5 mph<br>(8 km/h)           | 15 mph<br>(24 km/h) | 25 mph<br>(40 km/h) | 35 mph<br>(56 km/h) | 45 mph<br>(72 km/h) | 55 mph<br>(89 km/h) | 65 mph<br>(105 km/h) | 75 mph<br>(121 km/h) |  |
| 2              | 51    | 100                   | 30     | 13.7                        | 4.6                 | 2.7                 | 1.9                 | 1.5                 | 1.2                 | 1.1                  | 0.9                  |  |
| 6              | 152   | 300                   | 91     | 41.1                        | 13.7                | 8.2                 | 5.8                 | 4.6                 | 3.7                 | 3.2                  | 2.7                  |  |
| 9              | 229   | 450                   | 137    | 61.6                        | 20.5                | 12.3                | 8.8                 | 6.8                 | 5.6                 | 4.7                  | 4.1                  |  |
| 13             | 330   | 650                   | 198    | 89.0                        | 29.7                | 17.8                | 12.7                | 9.9                 | 8.1                 | 6.8                  | 5.9                  |  |
| 18             | 457   | 900                   | 274    | 123.3                       | 41.1                | 24.6                | 17.5                | 13.7                | 11.2                | 9.5                  | 8.2                  |  |
| 24             | 610   | 1,200                 | 366    | 164.4                       | 54.8                | 32.8                | 23.4                | 18.2                | 14.9                | 12.6                 | 10.9                 |  |
| 36             | 914   | 1,800                 | 549    | 246.6                       | 82.2                | 49.2                | 35.1                | 27.3                | 22.3                | 18.9                 | 16.4                 |  |
| 48             | 1,219 | 2,400                 | 732    | 328.8                       | 109.6               | 65.6                | 46.8                | 36.4                | 29.8                | 25.2                 | 21.8                 |  |

Shaded areas represent an acceptable exposure time