

## 2.4.02-11 Photometric law of distance with Cobra3



## What you can learn about ...

- Luminous flux
- Quantity of light
- Luminous intensity
- Illuminance
- Luminance

## Principle:

The luminous intensity emitted by a punctual source is determined as a function of distance.

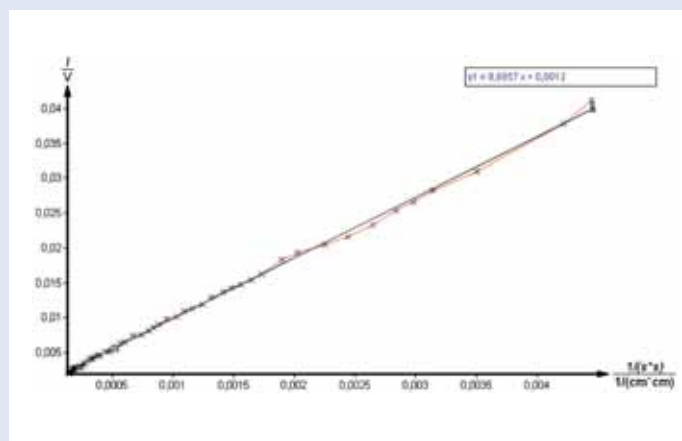
## Experimental objective:

The luminous intensity is a function of the distance of the light source from the light sensor. The law for point light sources on which this is based should be determined.

## What you need:

Cobra3 BASIC-UNIT	12150.00	1
Power supply 12V/2A	12151.99	1
Data cable 2 x SUB-D, plug/socket, 9 pole	14602.00	1
Software Cobra3 Force/Tesla	14515.61	1
Lamp socket E 14, on stem	06175.00	1
Filament lamps, 6 V/5 A	06158.00	1
Power supply 0-12 V DC/ 6 V, 12 V AC	13505.93	1
Stand tube	02060.00	2
Distributor	06024.00	1
Barrel base -PASS-	02006.55	2
Bench clamp -PASS-	02010.00	1
Meter Scale, $l = 1000 \times 27$ mm	03001.00	1
Photo diode, G1	39119.01	1
Connecting cable, 4 mm plug, 32 A, red, $l = 75$ cm	07362.01	1
Connecting cable, 4 mm plug, 32 A, blue, $l = 75$ cm	07362.04	1
Carbon resistor 470 $\Omega$ , 1W, G1	39104.15	1
Movement sensor with cable	12004.10	1
Adapter BNC socket/4 mm plug pair	07542.27	1
Adapter, BNC socket - 4 mm plug	07542.20	1
Right angle clamp -PASS-	02040.55	1
Plate holder, opening width 0...10 mm	02062.00	1
Weight holder, 1g, silver bronzing	02407.00	1
Silk thread on spool, $l = 200$ mm	02412.00	1
PC, Windows® 95 or higher		

Complete Equipment Set, Manual on CD-ROM included  
Photometric law of distance with Cobra3 P2240211



Luminous intensity as a function of the square of the reciprocal of the distance (lamp – diode)

## Tasks:

1. The luminous intensity emitted by a punctual source is determined as a function of distance from the source.
2. The photometric law of distance is verified by plotting illuminance as a function of the reciprocal value of the square of the distance.