

Student Experiments

Manual

OPTICS 2 + 3

P9160-6G



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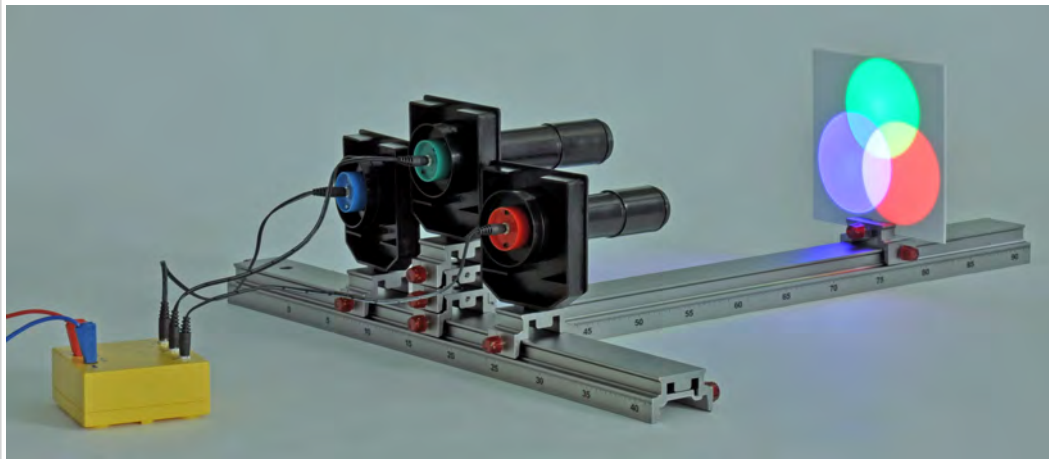
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Required Kit:

P9901-4L Optics 1

P9902-4H Optics 2

P9902-4K Optics 3, supplement



Material:

1x Screen white

3x Holder for lenses and screens

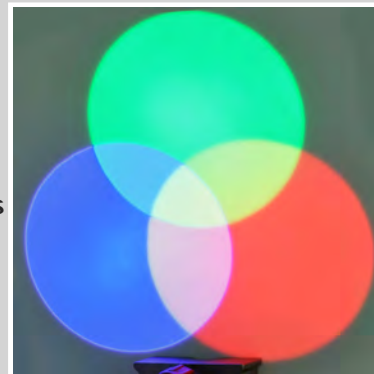
1x Diode lamps with power supply modul

3x Sliding saddle for optical bench

1x Sliding saddle for screens, springs and pointers

2x Sliding saddle with set screw

1x Optical bench



Additionally required:

Connecting cables

Power supply



The mixing of colours with colour TV and with multicolour illumination is to be investigated. It is to be shown that mixed colours derive from primary colours.

Preparation:

Arrangement according to the illustration. The three diode lights (red, green, blue) are fixed at the lens and screen holder. Three sliding saddles (2 with set screw, 1 without) are attached one above the other in the middle of the stand rail. Two sliding saddles are placed on the stand rail on the left and on the right side of the other sliding saddles. The diode lamps are put in the sliding saddles on the stand rail.

The screen is mounted on the second stand rail in the sliding saddle for scales. The rail is placed in front of the three lamps in such a way that the circular patches of light can be seen on the screen from all three lamps.



Experiment:

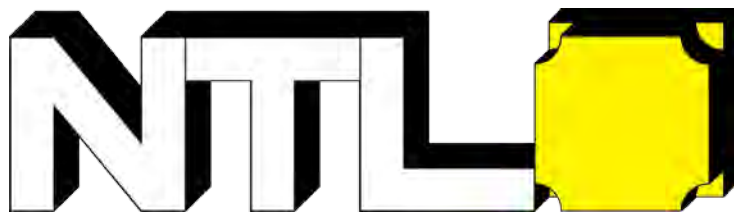
The three lamps produce circular patches of light on the screen in the three primary colours. The position of the lamps is adjusted in such a way that the patches of light overlap partially. All three primary colours should overlap in the middle.

Which colours originate when two circles of colour overlap? Which colour originates when all three primary colours overlap?



Results:

Primary colours	Mixed colour	Primary colours	Mixed colour
red - green			
blue - green		red- green - blue	
red - blue			



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