cedargrove_widgets.magic_eye

A CircuitPython DisplayIO.Group class for the 6E5 Triode Indicator “Magic Eye” display widget.

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class cedargrove_widgets.magic_eye.MagicEye(*, center=(0.5, 0.5), size=0.5, display_size=(None, None), bezel_color=0x000000)

A CircuitPython class representing the Magic Eye display widget. The class creates a DisplayIO.Group object consisting of sub-groups for the target anode, eye, cathode, and bezel. Defaults to an object with display center (0.5, 0.5) and radius of 0.5, specified as normalized display units (not pixels).

Parameters:

- **center** – The floating point width and height tuple value representing the center of the Magic Eye specified as normalized display units. Defaults to display width and height (0.5, 0.5).
- **size** – The floating point normalized diameter value of the Magic Eye relative to the display's shorter axis. Defaults to 0.5.
- **display_size** — The host display's integer width and height tuple value specified as pixels. If (None, None) and the host includes a built-in display, the value is (board.DISPLAY.width, board.DISPLAY.height).
- **bezel_color** — The integer RGB color value for the outer bezel. Defaults to 0x000000 (black).

Properties

center

A class property that returns a floating point tuple of the widget’s center (width, height).

size

A class property that returns a floating point value of the widget size.

display_size

A class property that returns an integer tuple of the display size (width, height).

bezel_color

A class property that returns the integer RGB color value of the widget’s outer bezel.

value

A class property that sets or returns the Magic Eye shadow wedge signal value. The signal value is a normalized, positive floating point value from 0.0 to 2.0. The 100-degree shadow wedge is at full width when the signal is 0.0. As the signal increases to 1.0, the shadow wedge gradually narrows. When the signal exceeds 1.0, the shadow wedge glows brighter, appearing to “overlap.”

```
# For host board with integral display (PyPortal, Clue, FunHouse, etc.)

import board
import random
import time

from cedargrove_widgets.magic_eye import MagicEye

display = board.DISPLAY

# Instantiate the MagicEye widget
# Locate at display center (0.5, 0.5) with size = 0.5
magic_eye = MagicEye()

display.show(magic_eye)

while True:

    # Close and open the wedge
    for i in range(0, 200, 1):
        m = i / 100
        magic_eye.value = m
        time.sleep(0.01)
    for i in range(200, 0, -1):
        m = i / 100
        magic_eye.value = m
        time.sleep(0.01)

    # Randomly control the wedge
    for i in range(0, 100):
        magic_eye.value = (random.randrange(0, 200) / 100)
        time.sleep(0.01)
```