A paper with a diagram of a device

Description automatically generated with medium confidence

TEST1

A white arrow in a black background

Description automatically generated A white object on a black background

Description automatically generated

A white and black video game controller

Description automatically generated

A white object with holes

Description automatically generated A white circle on a black background

Description automatically generated

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Eccentricity | Solidity | Moments\_hu0 | Compactness |
| 2 | 0.820626 | 0.816631 | 0.206349 | 0.5414 |
| 3 | 0.826652 | 0.787655 | 0.216289 | 0.068826 |
| 4 | 0.839101 | 0.81261 | 0.243611 | 0.126989 |
| 5 | 0.826652 | 0.787655 | 0.216289 | 0.044664 |
| 10 | 0.896773 | 0.269556 | 1.175169 | 0.128057 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Mahal2 | Mahal3 | Mahal4 | Mahal5 | Mahal10 |
| 2 | 5.253462 | 303118.832 | 807836.481 | 366293.7430 | 366293.743 |
| 3 | 68204.473 | 2.49412 | 4498.02805 | 752.22441 | 752.22441 |
| 4 | 52502.406 | 747.119825 | 13.814416 | 9249.5950 | 4495.203455 |
| 5 | 72798.5059 | 1557.928388 | 13293.5997 | 3.998786 | 2723.294457 |
| 10 | 8554.075829 | 148186.4538 | 156677.825 | 1.56046e+06 | 26.58969 |

TEST2

(MODELS USED FOR THIS TEST)

(Eccentricity, Solidity, Moments\_hu-0, Compactness)

model2 = np.array([  
 [0.814348, 0.840176, 0.19556, 0.4851],  
 [0.843512, 0.813908, 0.20481, 0.4851],  
 [0.833512, 0.823908, 0.22481, 0.5414],  
 [0.843512, 0.853908, 0.21481, 0.5402],  
 [0.852343, 0.854712, 0.18481, 0.5380],  
])  
  
model3 = np.array([  
 [0.832950, 0.810834, 0.218203, 0.093253],  
 [0.843512, 0.803713, 0.212811, 0.086394],  
 [0.823512, 0.797134, 0.211203, 0.074437],  
 [0.833512, 0.781141, 0.217811, 0.064982],  
 [0.842343, 0.816429, 0.219203, 0.095514],  
 [0.827277, 0.812809, 0.218213, 0.05146]  
])  
  
model4 = np.array([  
 [0.8469, 0.81604, 0.24227, 0.133711],  
 [0.8369, 0.81876, 0.24128, 0.130262],  
 [0.8430, 0.80636, 0.23863, 0.126989],  
 [0.8370, 0.83887, 0.23579, 0.133548],  
 [0.8270, 0.79887, 0.25579, 0.120160],  
  
])  
  
model5 = np.array([  
 [0.8469, 0.7160, 0.27227, 0.050355],  
 [0.8569, 0.6886, 0.28579, 0.044664],  
 [0.8189, 0.7484, 0.25531, 0.062366],  
 [0.8484, 0.7284, 0.26128, 0.057497],  
 [0.8484, 0.6987, 0.28128, 0.044664],  
  
])  
  
model10 = np.array([  
 [0.896773, 0.269556, 1.1381, 0.138777],  
 [0.866203, 0.278393, 1.1617, 0.128057],  
 [0.906599, 0.283453, 1.1031, 0.149432],  
 [0.866563, 0.223590, 1.1264, 0.148516],  
 [0.856429, 0.275664, 1.1049, 0.138041],  
 [0.898827, 0.273271, 1.18163, 0.126382],  
])

|  |  |  |  |
| --- | --- | --- | --- |
| Picture | Best Score | Match | Expected |
|  | 483.29916673690786 | Above 100 threshold. None found! | - |
|  | 61.339920777425704  (why?bad picture?) | 2 | 2 |
|  | 2.5081534876586207 | 2 | 2 |
|  | 2.4941225674799847 | 3 | 3 |
|  | 5.822189545865559 | 3 | 3 |
|  | 10.975960070235109 | 4 | 4 |
|  | 3.059000001130677 | 5 | 5 |
|  | 284.9663818337153  (Finds 5 but top holes removed!) | Above 100 threshold. None found! | 5 |
|  | 3.0825165788074305 | 10 | 10 |
|  | 1065.7369428885743 | Above 100 threshold. None found! | - |
|  | 190.45379301125718  (Finds 5 but bad bin top part) | Above 100 threshold. None found! | 5 |
|  | 61.87085756001453  (the pins on the bottom not visible) | 5 | 5 |
|  | 609.8104668288145  (Finds 5 but bad top part) | Above 100 threshold. None found! | 5 |
|  | 193.1991159965941 | Above 100 threshold. None found! | - |
|  | 432.11097653509705 | Above 100 threshold. None found! | - |
|  | 496.07984259224565 | Above 100 threshold.  None found! | - |
|  | 1537.3974765292746 | Above 100 threshold.  None found! | - |
|  | 37.05241454359067 (why?bad picture?) | 4 | 4 |
|  | 3.084804735209734 | 2 | 2 |
|  | 2.6663533213562225 | 2 | 2 |
|  | 17.596555821310368  (EXTRA 2 Dilations from previous photo) | 2 | 2 |
|  | 17.332711724894146 | 2 | 2 |
|  | 19.07344879200255 | 2 | 2 |
|  | 7.4123126509399535 | 3 | 3 |
|  | 12.778878235436139 | 3 | 3 |
|  | 6.875633010745822 | 3 | 3 |
|  | 5.409964195485413 | 4 | 4 |
|  | 3.080984024617141 | 10 | 10 |
|  | 1.1239802622817878 | 10 | 10 |
|  | 3.6516514796042525 | 10 | 10 |