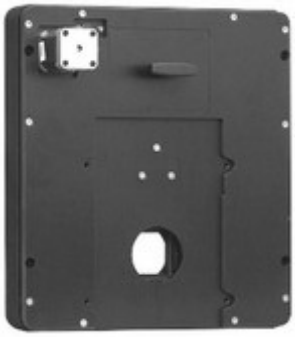
MRW-8

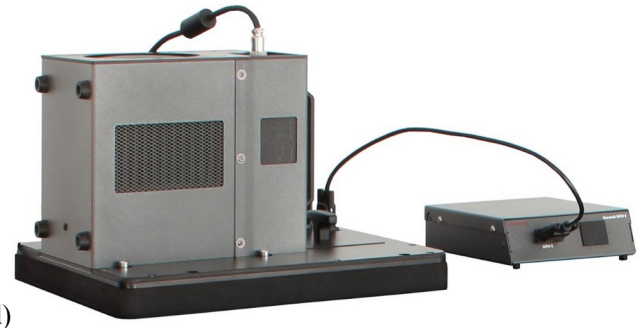
Motorized Rotary Wheel

a)



b)

c)



d)

Fig. 1. Photos of MRW-8 wheel: a)only wheel, b)wheel in vertical position connected to TCB blackbody, c)wheel in horizontal position to be fixed on a CDT collimator and controlled from TCB blackbody, d) wheel in horizontal position controlled from external CMRW controller

BASIC INFORMATION:

MRW-8 motorized rotary wheels are one of basic blocks of Inframet systems for testing imaging EO systems. They are needed to enable motorized exchange of active target at collimator focal plane. MRW-8 motorized rotary wheel has eight holes for target plates in the rotating wheel (other numbers are also possible for other models). The wheel is covered with a high emissivity black coating (emissivity at least 0.97). Typical MRW-8 wheel is optimized (location of the fixing holes) to be connected from one side to CDT collimator and from the other side to a radiation source (TCB blackbody, DCB dual color blackbody, DAL/SAL light sources). It can be delivered also in versions optimized to cooperate with customer radiation sources or collimators.

Design of rotary wheels looks apparently simple but practical manufacturing is no so easy. Ultra precision positioning (high repeatability) of the wheel demanded in in case of systems for testing imagers used for automatic target recognition systems is the main design challenge. Positioning uncertainty of the rotary wheel at level below 0.15 mm is offered by typical wheels and 0.05mm by optional wheels.

MRW8 wheels can be controlled in three main ways. First, MRW8 wheel is controlled from PC using TCB Control program. The program communicates with TCB blackbody and electronic controller sends commands to MRW8 wheel via RS232 cable. It is a typical case in Inframet test systems. Second, MRW8 wheel is controlled from PC using ROT program. The program communicates with CMRW controller that sends commands to MRW8 wheel via RS232 cable. This solution is dedicated for customers who what to use MRW wheel in their own computerized test systems. Third, MRW8 wheel is controlled using a simple electronic EMRW8 controller that is manually operated. Two simple commands are possible: forward and back. This solution is dedicated for customers who what to use MRW wheel in their own manually operated test systems.

Inframet can also deliver targets matching to holes in MRW-8 rotary wheels. Long experience in testing electro-optical systems allows to deliver high quality targets for testing VIS/NIR cameras, SWIR imagers, thermal imagers, multisensor systems and also sensing cards for testing laser range finders. See for details to http://www.inframet.com/targets.htm.

MRW-8

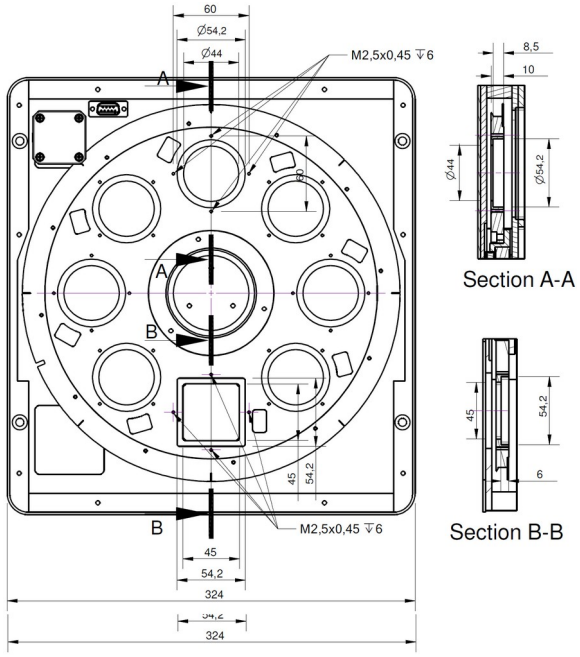
Motorized Rotary Wheel

TECHNICAL SPECIFICATIONS:

Type	Motorized
Number of holes for targets	8
Type	Motorized
Wheel emissivity	0.97±0.01
Position uncertainty	below 0.15 mm (typical version) below 0.05mm (ultra repeatability version)
Dimensions	350 x 325 x 80 mm
Mass	3.8 kg
Control	1)PC software via TCB blackbody 2)PC software via external controller 3)Manual control using external electronic controller

DRAWINGS

The drawing shows the interior of MRW-8 and wheel where targets are fixed. The wheel has seven circular holes and one rectangular hole for the biggest target (it can be delivered in version of all circular holes). The sections show the detail dimensions necessary for construction of target frame. The wheel can be also delivered with all eight circular holes.



VERSION:

MRW8 is offered in many versions. Main criterions are: control method, positioning precision and number of circular holes. Three letter code is used to describe version of MRW8 wheel. MRW8 BBB means wheel controlled using PC software via external controller. The wheel has 8 circular holes.

Code	Control	Positioning precision	Number of circular holes
A	PC software via TCB blackbody	Typical 0.15 mm	7 + 1 square
B	PC software via external controller	Ultra 0.05mm	8
C	Manual control using external electronic controller		

Version 3.1

CONTACT: Tel: +48 226668780 Fax: +48 22 3987244 Email: info@inframet.com