

EXERCISE TO BECOME FACILE WITH THE USE OF "SPIDER WEBS"

1. 3-LAYER AR FOR GERMANIUM!

Given:

Substrate index 4.0

Final media index 1.0

High index coating
material (H), 4.0

Low index coating
material (L), 1.38

Find a three (3) layer AR in which the last layer is 1.0 QWOT, and what fraction of a QWOT each of the first two layers must be.

2. SIMULATE A LAYER OF INDEX 1.7!

Given:

Substrate index 1.52

Final media index 1.9

High index coating
material (H), 2.35

Low index coating
material (L), 1.38

Find a two (2) layer AR (H then L) which moves from 1.52 to 1.9 and what fraction of a QWOT each of the two layers must be.

NOTE: a QWOT of 1.38 index on a 1.9 index substrate will be a "perfect" AR to a medium of 1.0 index; i.e. if added to the result of problem 2, will make a 3 layer AR on glass (1.52).

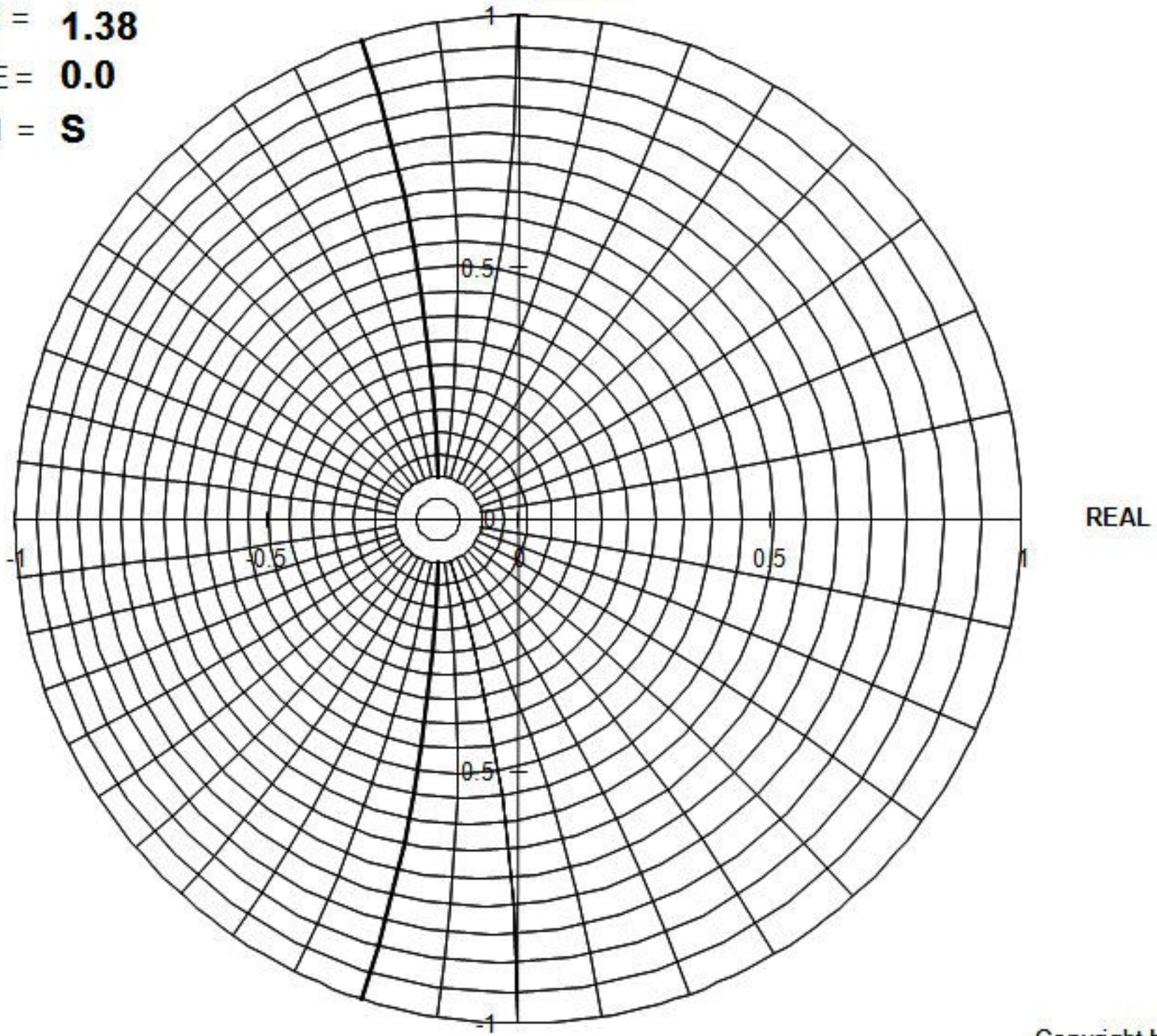
REFLECTANCE DIAGRAM

IMAGINARY

INDEX = **1.38**

ANGLE = **0.0**

POLARIZATION = **S**



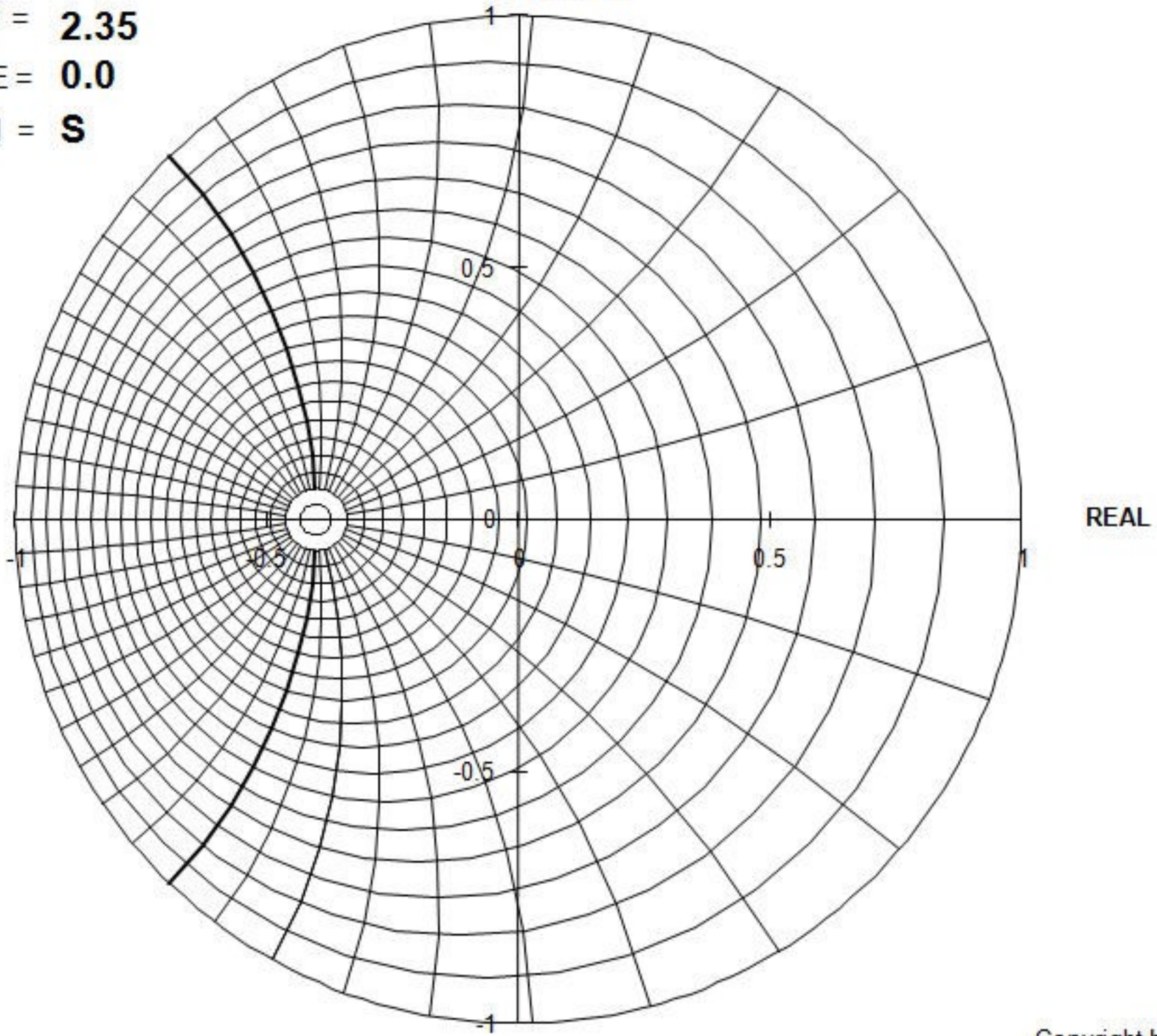
REFLECTANCE DIAGRAM

IMAGINARY

INDEX = **2.35**

ANGLE = **0.0**

POLARIZATION = **S**



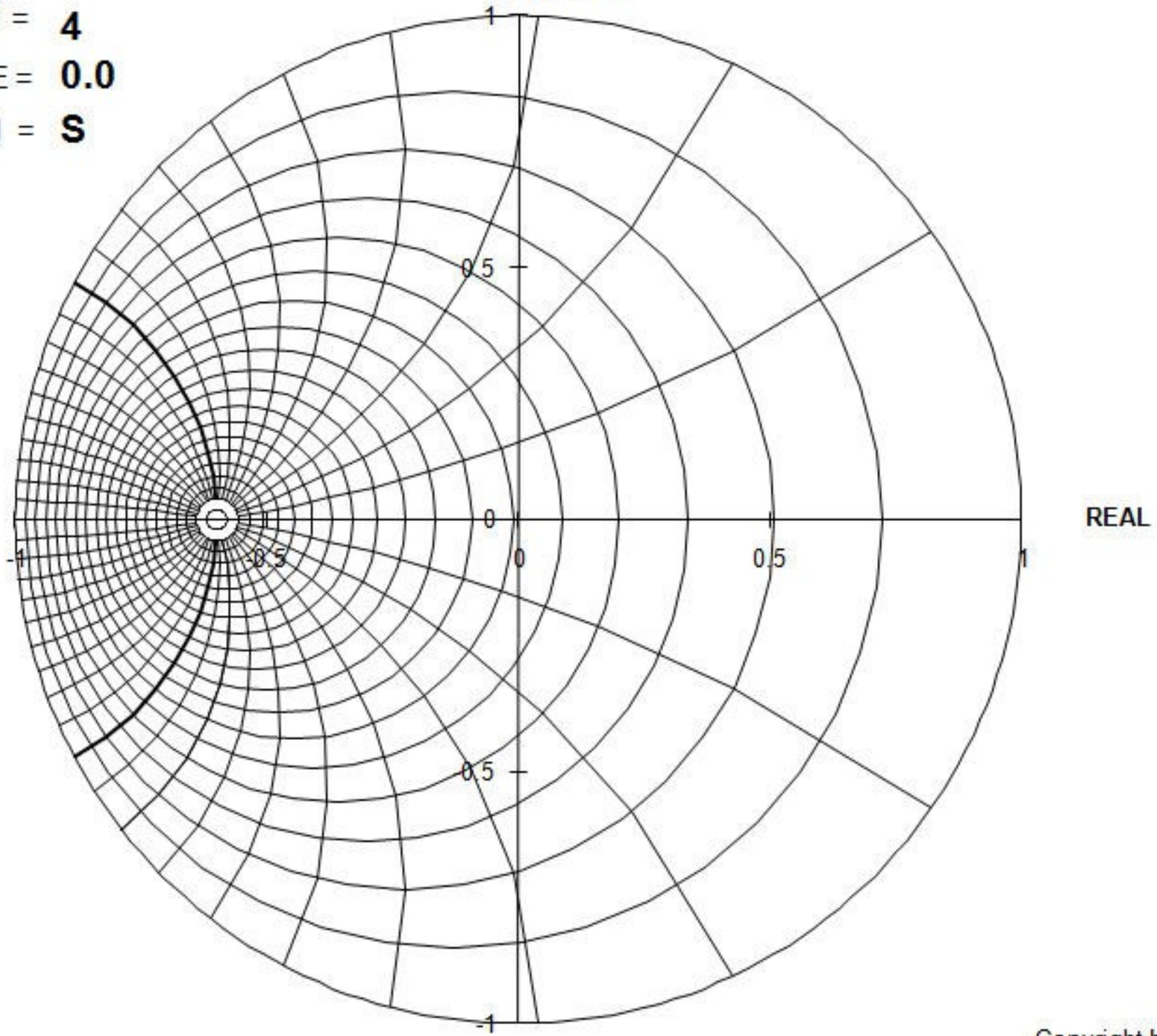
REFLECTANCE DIAGRAM

IMAGINARY

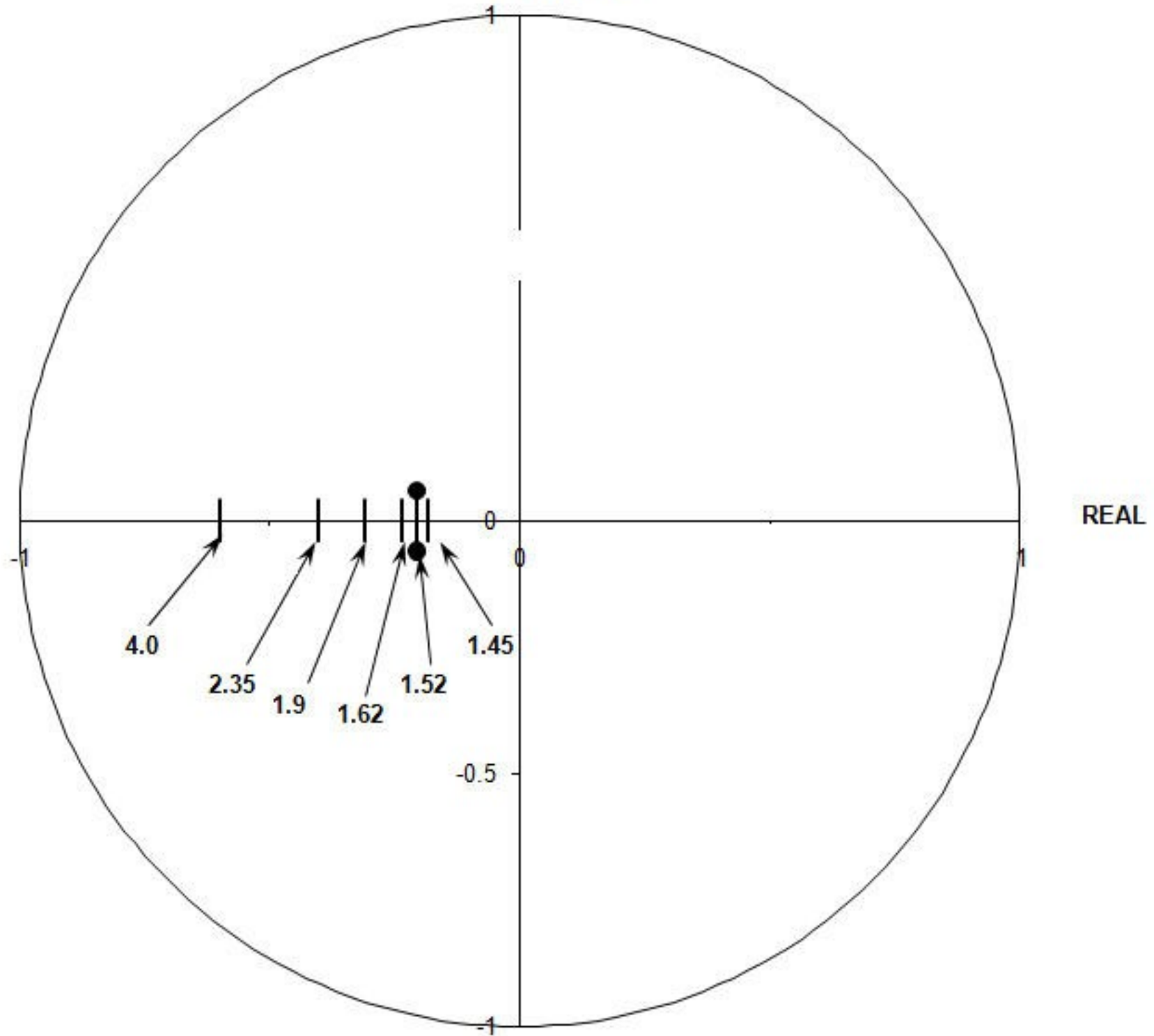
INDEX = **4**

ANGLE = **0.0**

POLARIZATION = **S**



REFLECTANCE DIAGRAM, SUBSTRATE STARTING POINTS IMAGINARY



REFLECTANCE DIAGRAM, %R (INTENSITY) SCALE

