

Uncertainty-Certainty Matrix Bias Index Coefficient (UCMBIC) Calculator v4©

Step 1: Trial Data Entry

Metric	Count
True Negative (TN)	25
False Positive (FP)	25
False Negative (FN)	25
True Positive (TP)	25

Step 3: Licensing Decision Analysis

Category	Profile Readout
Final Decision	Optimal Calibration

Research Notes:

$$\text{UCMBIC Coefficient} = 1 - (H + F)$$

$$H = \text{Hit Rate} = \frac{TP}{TP+FN}$$

$$F = \text{False Alarm Rate} = \frac{FP}{TN+FP}$$

$$H = \Phi\left(\frac{d'}{2} - c\right), \quad F = \Phi\left(-\frac{d'}{2} - c\right)$$

$$H + F = \Phi\left(\frac{d'}{2}\right) + 1 - \Phi\left(\frac{d'}{2}\right) = 1.0 \Rightarrow 1 - (H + F) = 0.0$$

Step 2: SDT Metrics & Bias Index

Metric	Formula / Rate
Hit Rate (Raw, H)	50.00%
False Positive Rate (Raw, F)	50.00%
Hit Rate (Corrected)	50.00%
F Rate (Corrected)	50.00%
Sensitivity (d')	0.00
Criterion (c)	0.00
UCMBIC Coefficient	0.00

UCMBIC Scale

Negative Bias = (-.4) -- (-.99)

Positive Bias = (+.4) -- (+.99)

Optimal Calibration = (-.39) -- (+.39)

$$H + F \approx 1.0 \Rightarrow \text{UCMBIC Coefficient} \approx 0.0$$

$$H + F > 1.5 \Rightarrow \text{UCMBIC Coefficient} \ll 0.0$$

$$H + F < 0.5 \Rightarrow \text{UCMBIC Coefficient} \gg 0.0$$

$$d' = Z(H) - Z(F)$$

$$c = -0.5 \times [Z(H) + Z(F)]$$

Legend

(TP) = True Positive = Licensing Assessor = Compliant; Standard = Compliant

(TN) = True Negative = Licensing Assessor = Non-Compliant; Standard = Non-Compliant

(FP) = False Positive = Licensing Assessor = Non-Compliant; Standard = Compliant

(FN) = False Negative = Licensing Assessor = Compliant; Standard = Non-Compliant

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