

Thermocoupler Calibration

ExTech Thermocoupler Easyview 15

Manual Website Catalog No. EA15

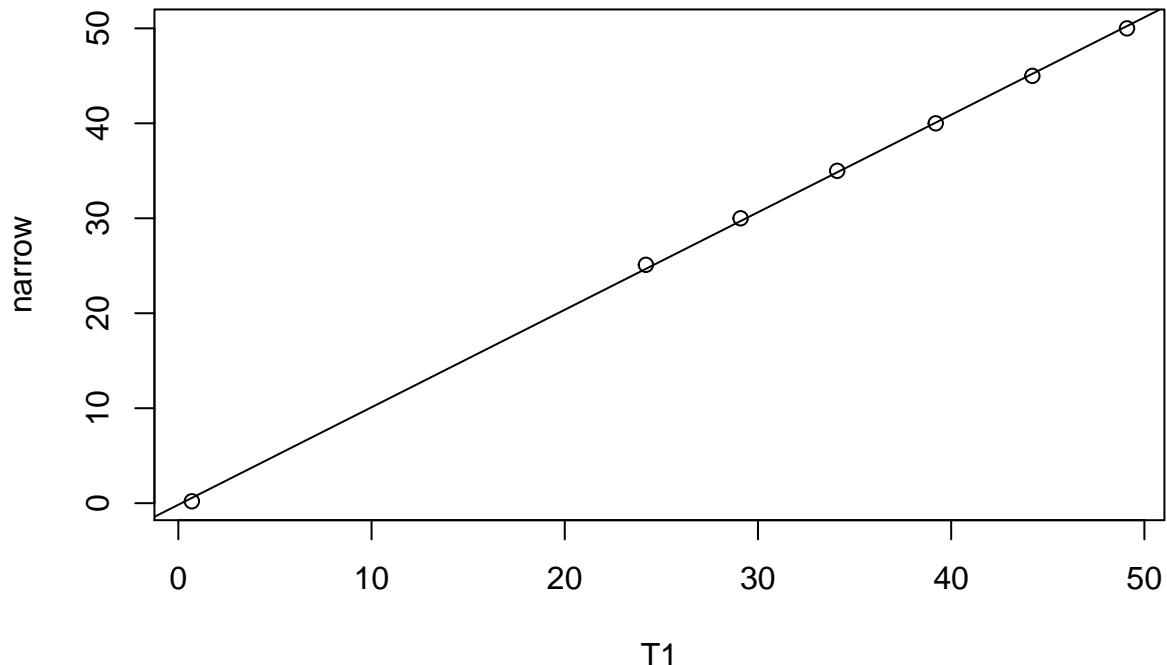
```
settemp<- c(0, 25, 30, 35, 40, 45, 50)
T1 <- c(0.7, 24.2, 29.1, 34.1, 39.2, 44.2, 49.1)
T2 <- c(1, 23.9, 28.7, 33.8, 38.8, 43.9, 48.7)
wide <- c(0, 25.05, 30, 35, 40, 45, 50)
narrow <- c(0.2, 25.1, 30, 35, 40, 45, 50)

fit<-lm(narrow~T1)
summary(fit)

##
## Call:
## lm(formula = narrow ~ T1)
##
## Residuals:
##      1       2       3       4       5       6       7 
## -0.35154  0.42319  0.29281  0.15977 -0.07593 -0.20896 -0.23934
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)    
## (Intercept) -0.16709    0.28604  -0.584   0.584    
## T1          1.02661    0.00821 125.041 6.2e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.3227 on 5 degrees of freedom
## Multiple R-squared:  0.9997, Adjusted R-squared:  0.9996 
## F-statistic: 1.564e+04 on 1 and 5 DF,  p-value: 6.205e-10

plot(T1, narrow, main = "ExTech")
abline(fit)
```

ExTech

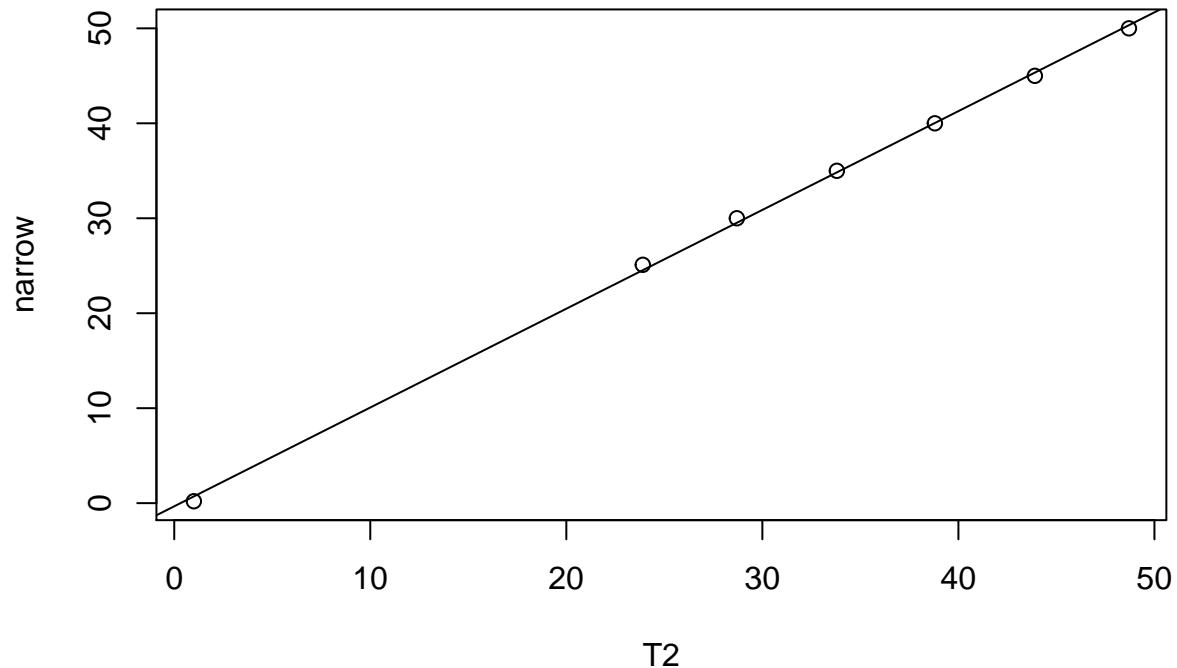


```
fit2<-lm(narrow~T2)
summary(fit2)

##
## Call:
## lm(formula = narrow ~ T2)
##
## Residuals:
##      1       2       3       4       5       6       7 
## -0.50634  0.56862  0.47472  0.16871 -0.03326 -0.33928 -0.33318 
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)    
## (Intercept) -0.33406    0.41007  -0.815   0.452    
## T2          1.04039    0.01188  87.588 3.68e-09 ***  
## ---        
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1 
##
## Residual standard error: 0.4606 on 5 degrees of freedom
## Multiple R-squared:  0.9993, Adjusted R-squared:  0.9992 
## F-statistic:  7672 on 1 and 5 DF,  p-value: 3.677e-09

plot(T2, narrow, main = "ExTech")
abline(fit2)
```

ExTech





Omega Thermocoupler HH506RA

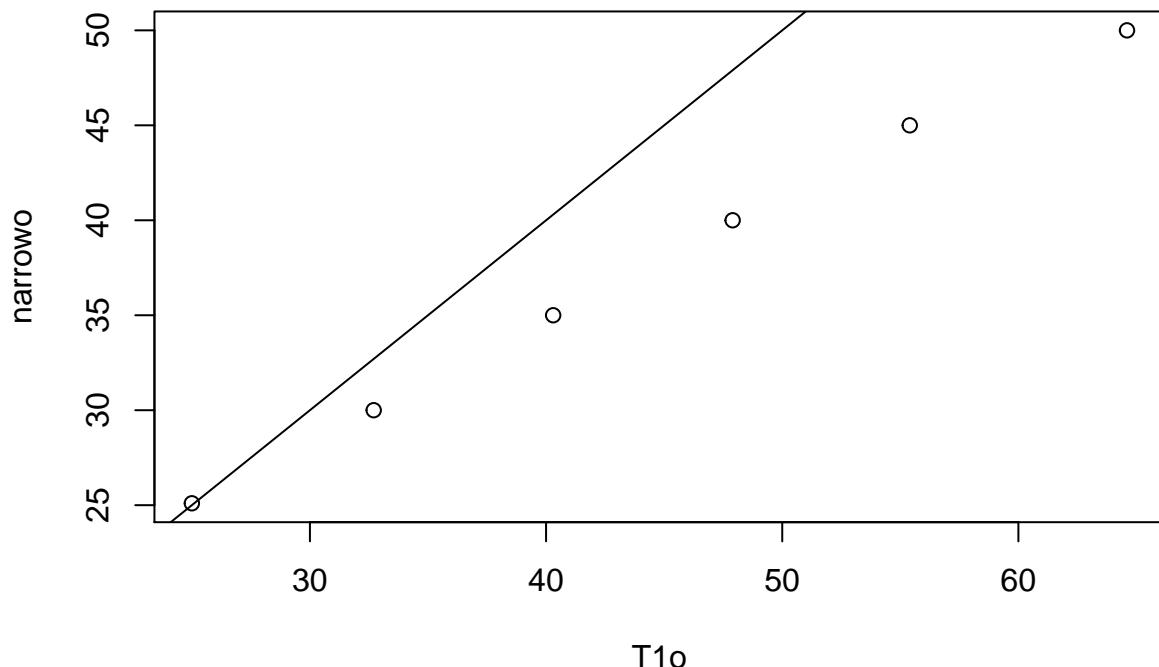
Manual Website Model No. HH506RA

```
settemp<- c(25, 30, 35, 40, 45, 50)
T1o <- c(25, 32.7, 40.3, 47.9, 55.4, 64.6)
T2o <- c(25, 30, 35, 40.1, 45.2, 51.5)
wideo <- c(25.05, 30, 35, 40, 45, 50)
narrowo <- c(25.1, 30, 35, 40, 45, 50)

fito<-lm(narrow~T1)
summary(fito)

##
## Call:
## lm(formula = narrow ~ T1)
##
## Residuals:
##       1        2        3        4        5        6        7 
## -0.35154  0.42319  0.29281  0.15977 -0.07593 -0.20896 -0.23934
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)    
## (Intercept) -0.16709   0.28604  -0.584   0.584    
## T1          1.02661   0.00821 125.041 6.2e-10 ***
## ---        
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.3227 on 5 degrees of freedom
## Multiple R-squared:  0.9997, Adjusted R-squared:  0.9996 
## F-statistic: 1.564e+04 on 1 and 5 DF,  p-value: 6.205e-10
plot(T1o, narrowo, main = "Omega")
abline(0,1)
```

Omega



```
fit2o<-lm(narrow~T2)
summary(fit2o)

##
## Call:
## lm(formula = narrow ~ T2)
##
## Residuals:
##      1      2      3      4      5      6      7 
## -0.50634  0.56862  0.47472  0.16871 -0.03326 -0.33928 -0.33318 
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)    
## (Intercept) -0.33406   0.41007  -0.815   0.452    
## T2          1.04039   0.01188  87.588 3.68e-09 ***  
## ---        
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1 
##
## Residual standard error: 0.4606 on 5 degrees of freedom
## Multiple R-squared:  0.9993, Adjusted R-squared:  0.9992 
## F-statistic: 7672 on 1 and 5 DF, p-value: 3.677e-09

plot(T2o, narrowo, main = "Omega")
abline(0,1)
```

Omega

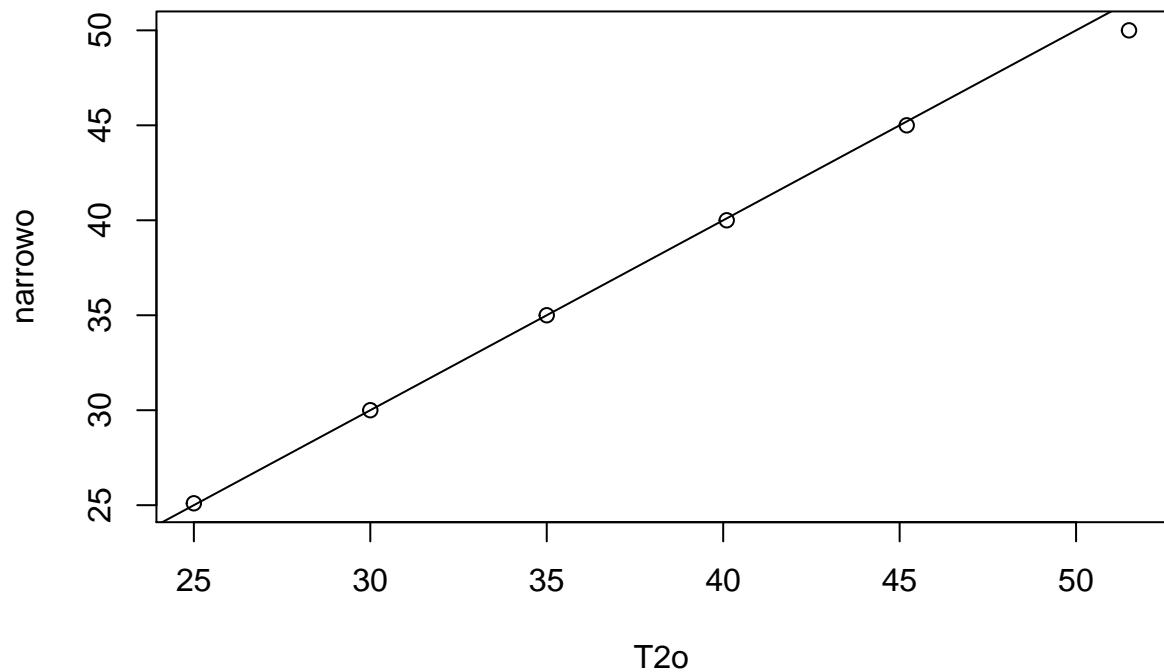




Figure 1: img
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