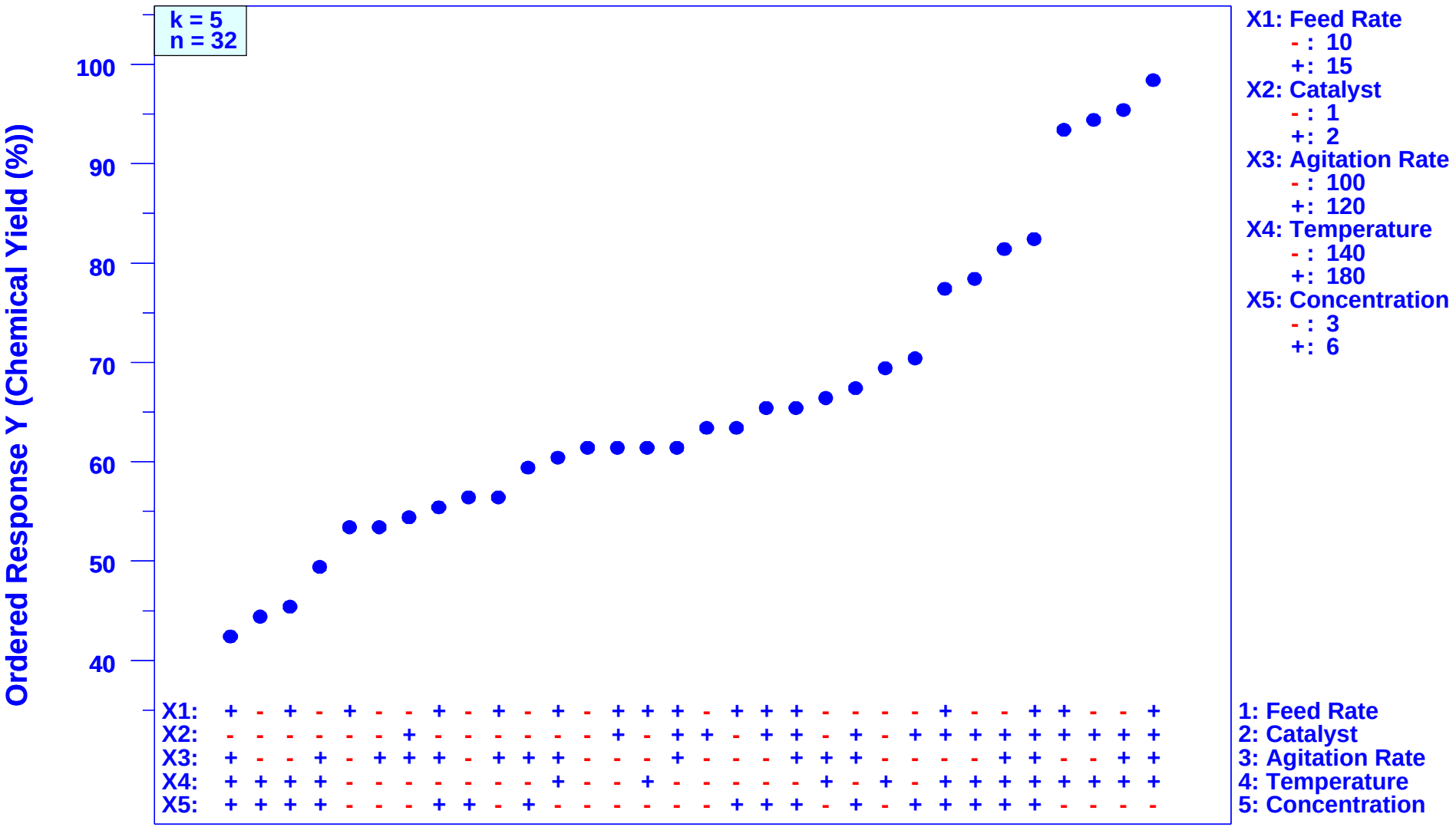
Factors Affecting Chemical Reactor Yield (Box, Hunter, & Hunter)
Design: 2**5 (k=5,n=32)

Ordered Data Plot

Mean = 65.5000



Factor Settings

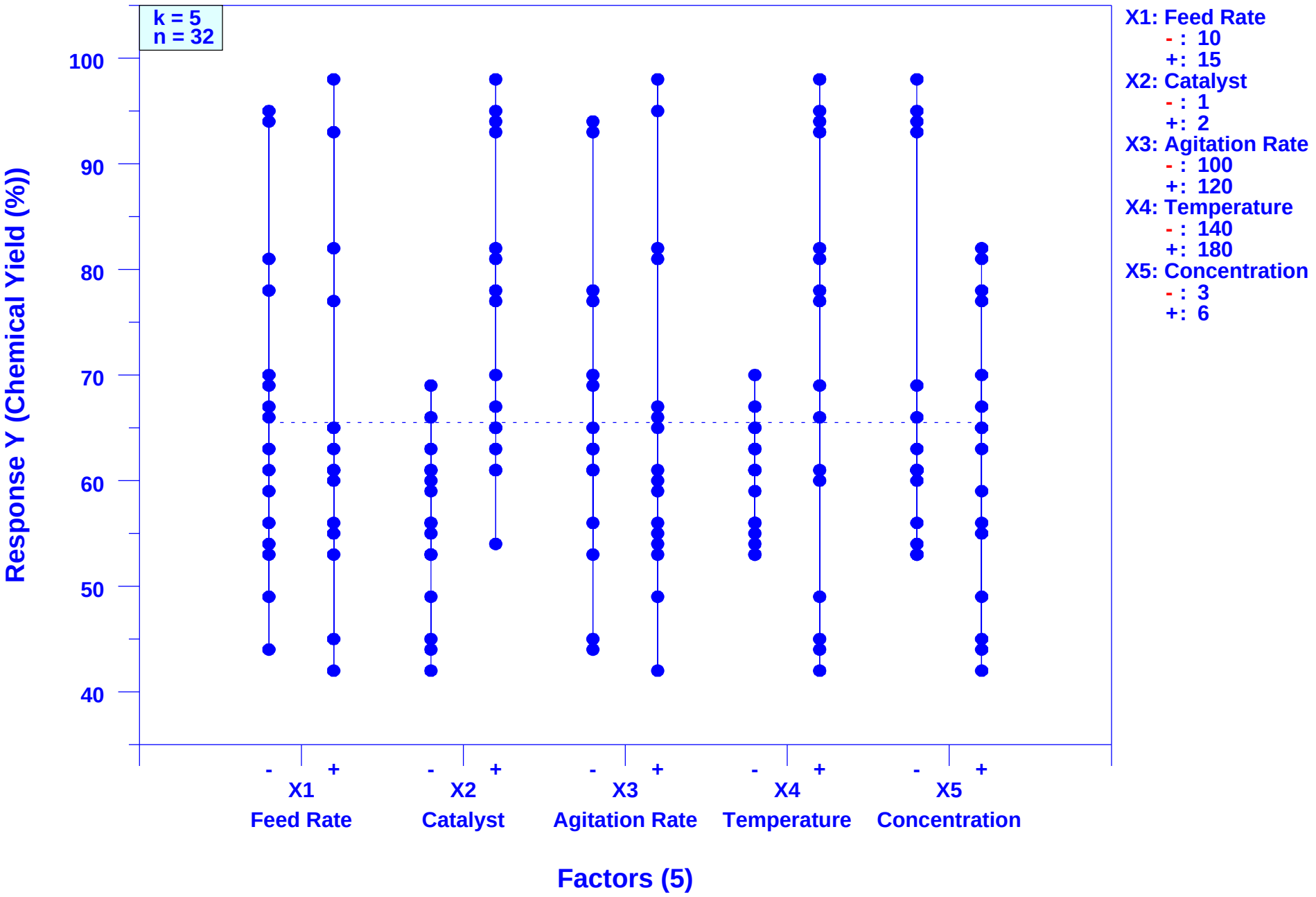
boxreactor_5_32.dp
Datafile: boxreactor_5_32.dat

Factors Affecting Chemical Reactor Yield (Box, Hunter, & Hunter)

Design: 2**5 (k=5,n=32)

Scatter Plot

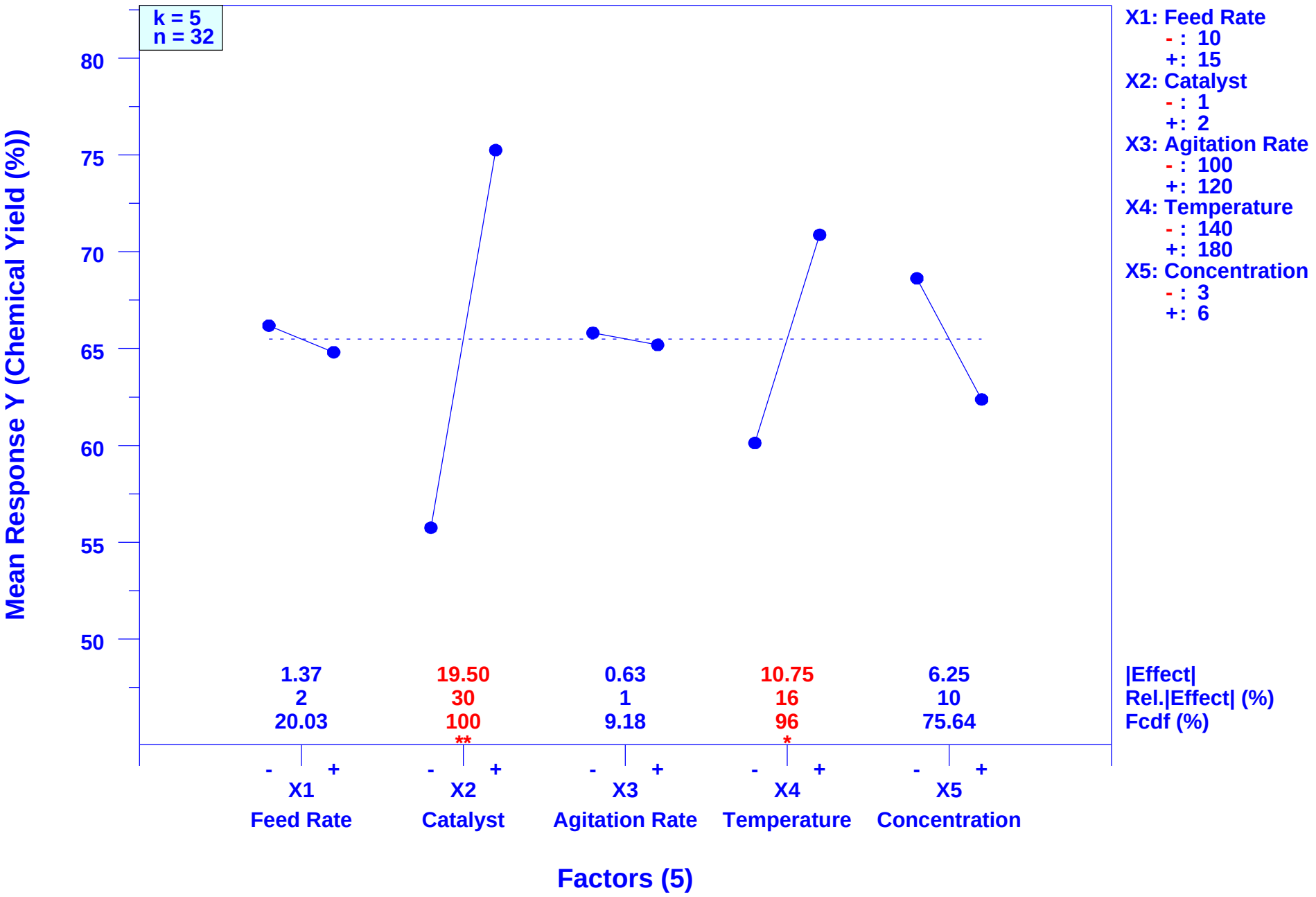
Mean = 65.5000



Factors Affecting Chemical Reactor Yield (Box, Hunter, & Hunter)
Design: 2**5 (k=5,n=32)

Main Effects Plot

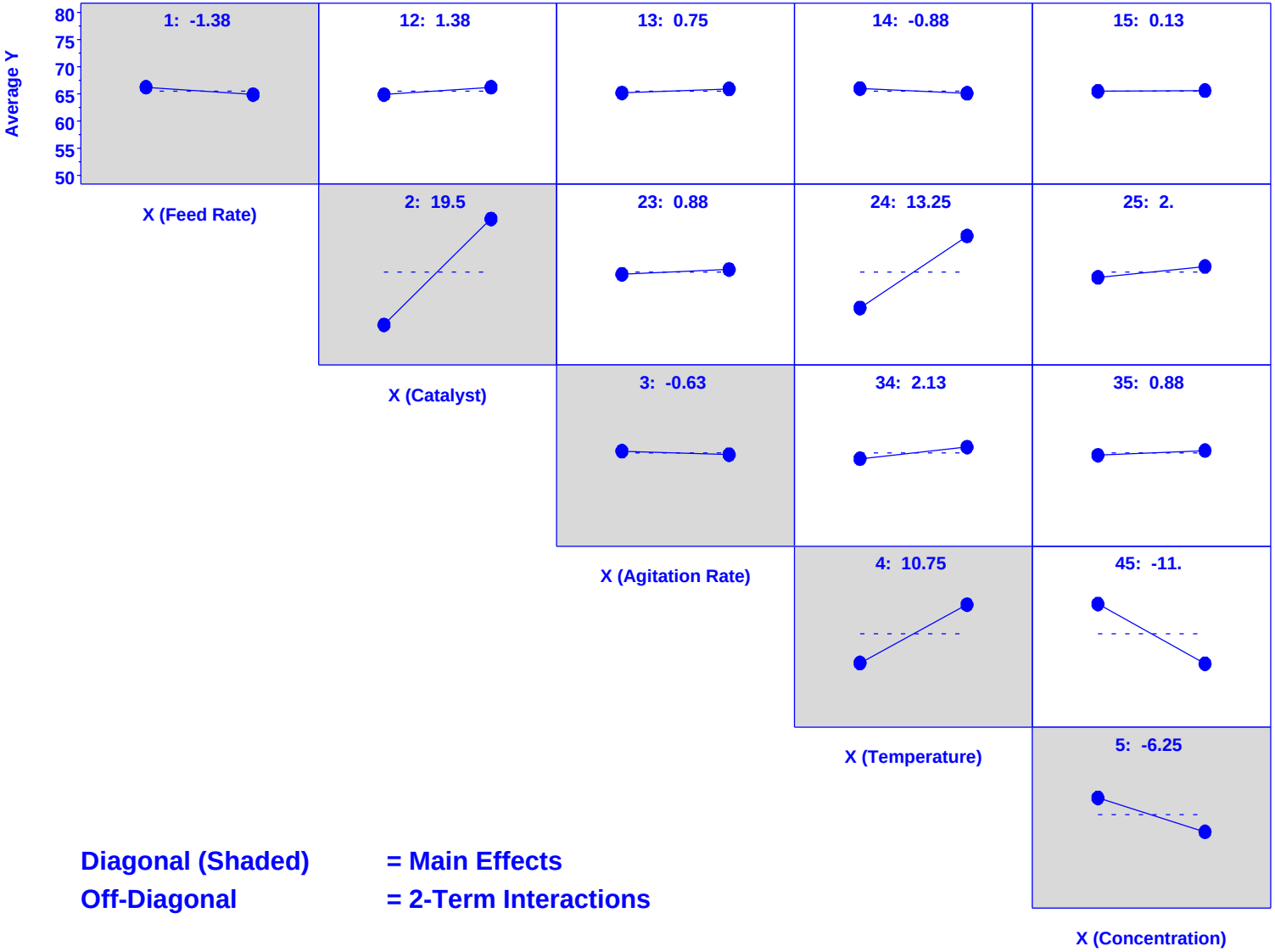
Mean = 65.5000



Factors Affecting Chemical Reactor Yield (Box, Hunter, & Hunter)
Design: 2**5 (k=5,n=32)

Interaction Effects Matrix

Mean = 65.5000



X1: Feed Rate
- : 10
+: 15

X2: Catalyst
- : 1
+: 2

X3: Agitation Rate
- : 100
+: 120

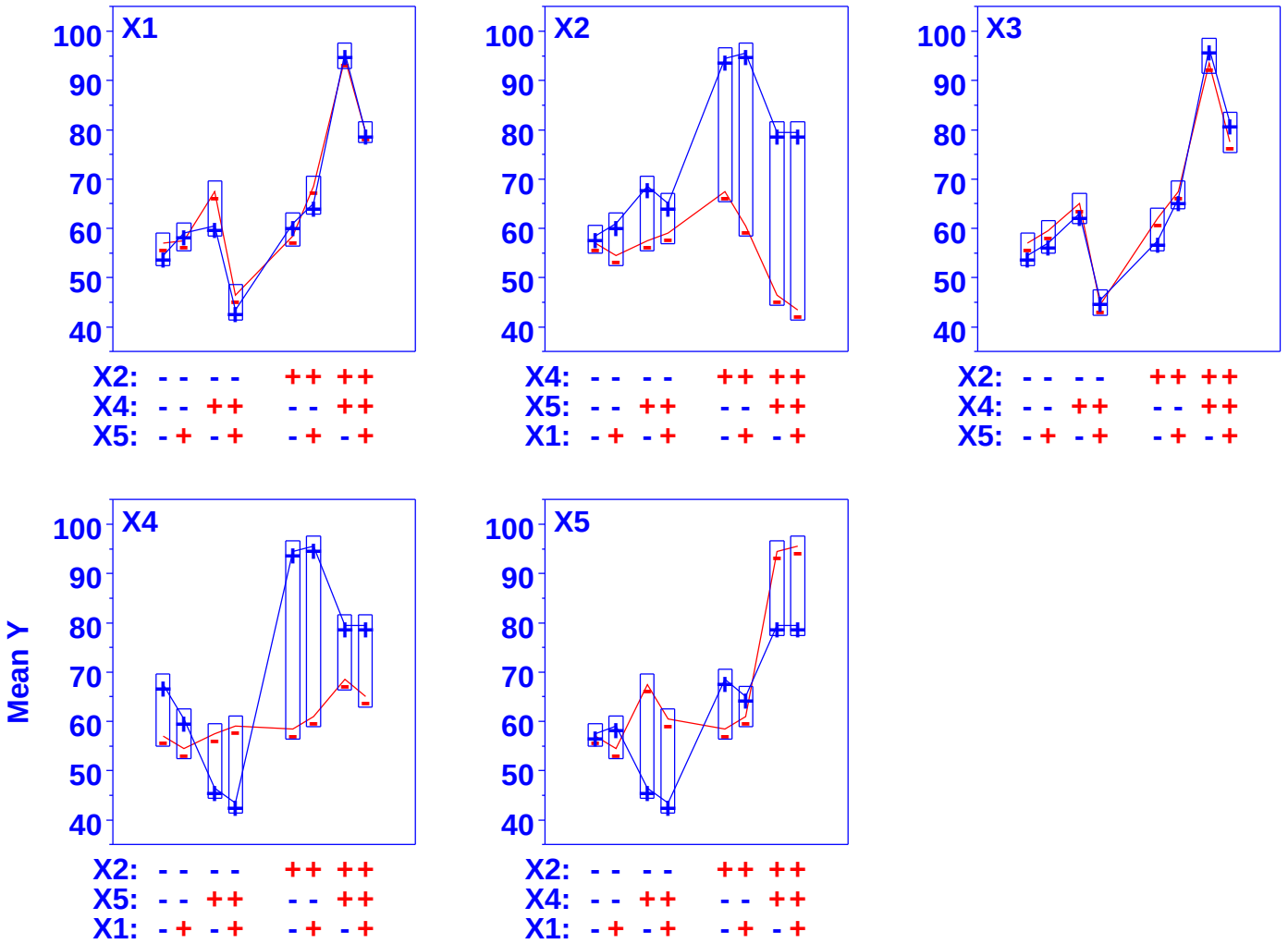
X4: Temperature
- : 140
+: 180

X5: Concentration
- : 3
+: 6

Diagonal (Shaded) = Main Effects

Off-Diagonal = 2-Term Interactions

Factors Affecting Chemical Reactor Yield (Box, Hunter, & Hunter)
Design: 2**5 (k=5,n=32)
Block Plot



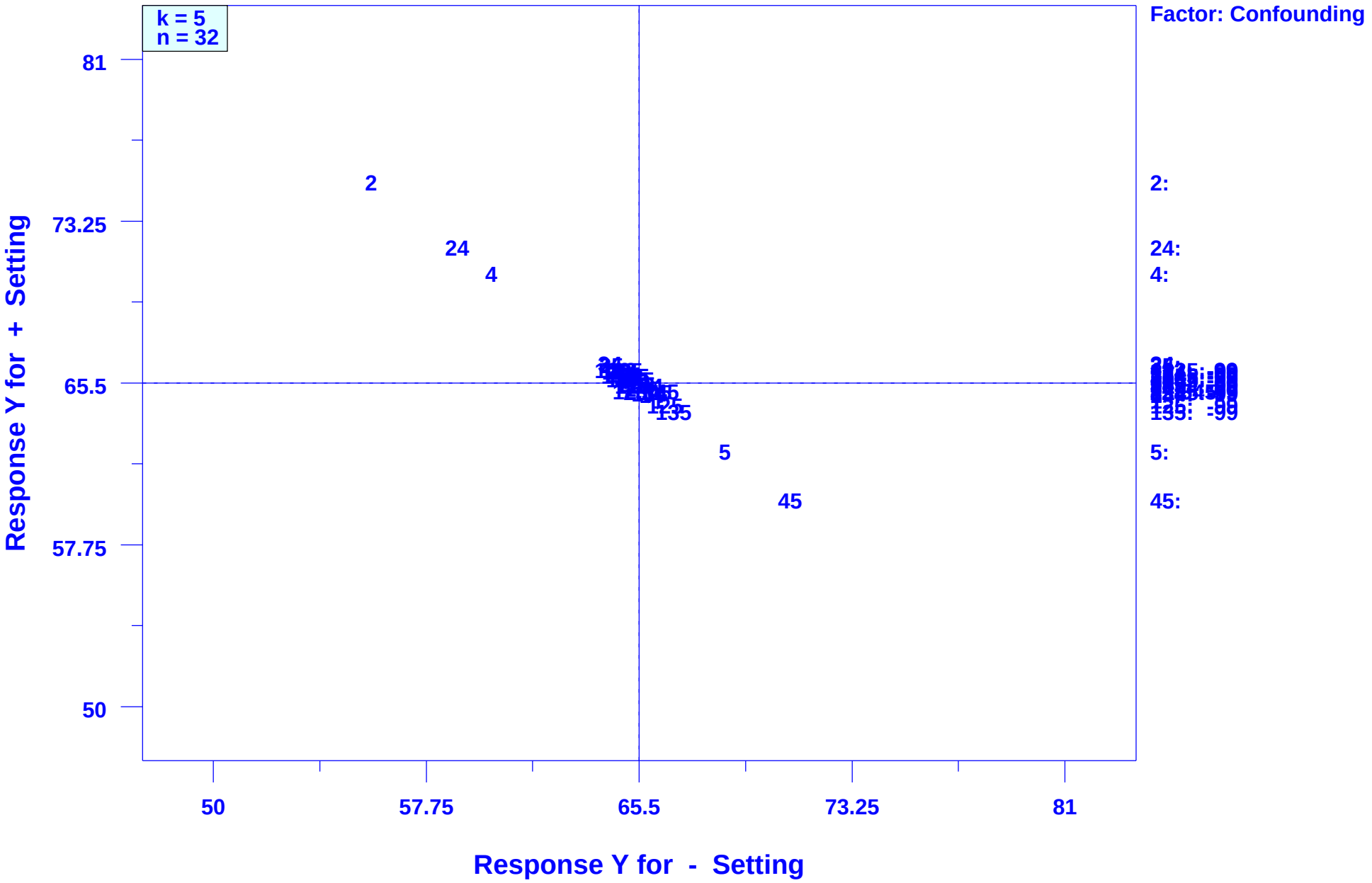
X1: Feed Rate
- : 10
+: 15
X2: Catalyst
- : 1
+: 2
X3: Agitation Rate
- : 100
+: 120
X4: Temperature
- : 140
+: 180
X5: Concentration
- : 3
+: 6

Factors Affecting Chemical Reactor Yield (Box, Hunter, & Hunter)

Design: 2**5 (k=5,n=32)

Youden Plot

Mean = 65.5000

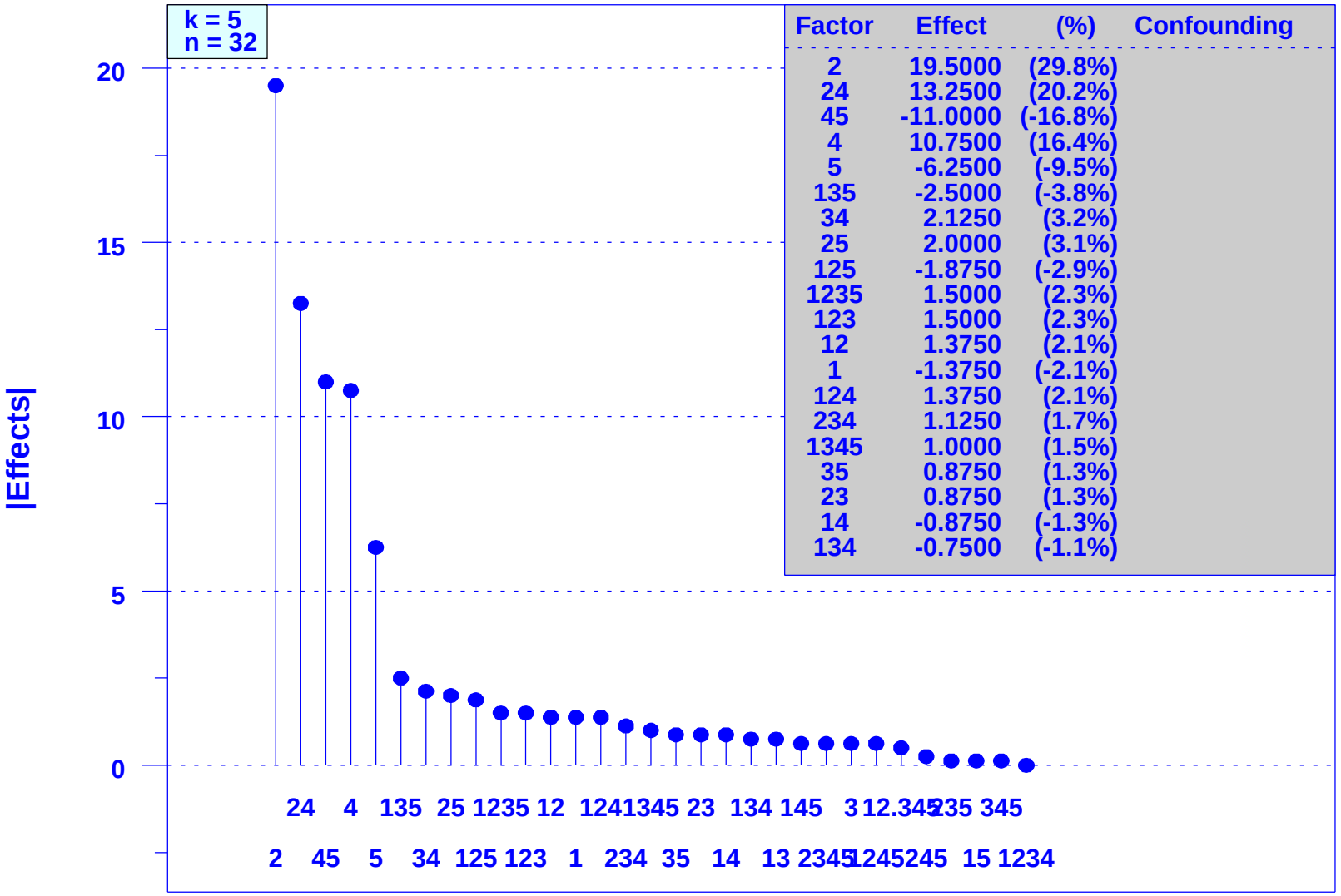


boxreactor_5_32.dp
Datafile: boxreactor_5_32.dat

Factors Affecting Chemical Reactor Yield (Box, Hunter, & Hunter)
Design: 2**5 (k=5,n=32)

|Effects| Plot

Mean = 65.5000

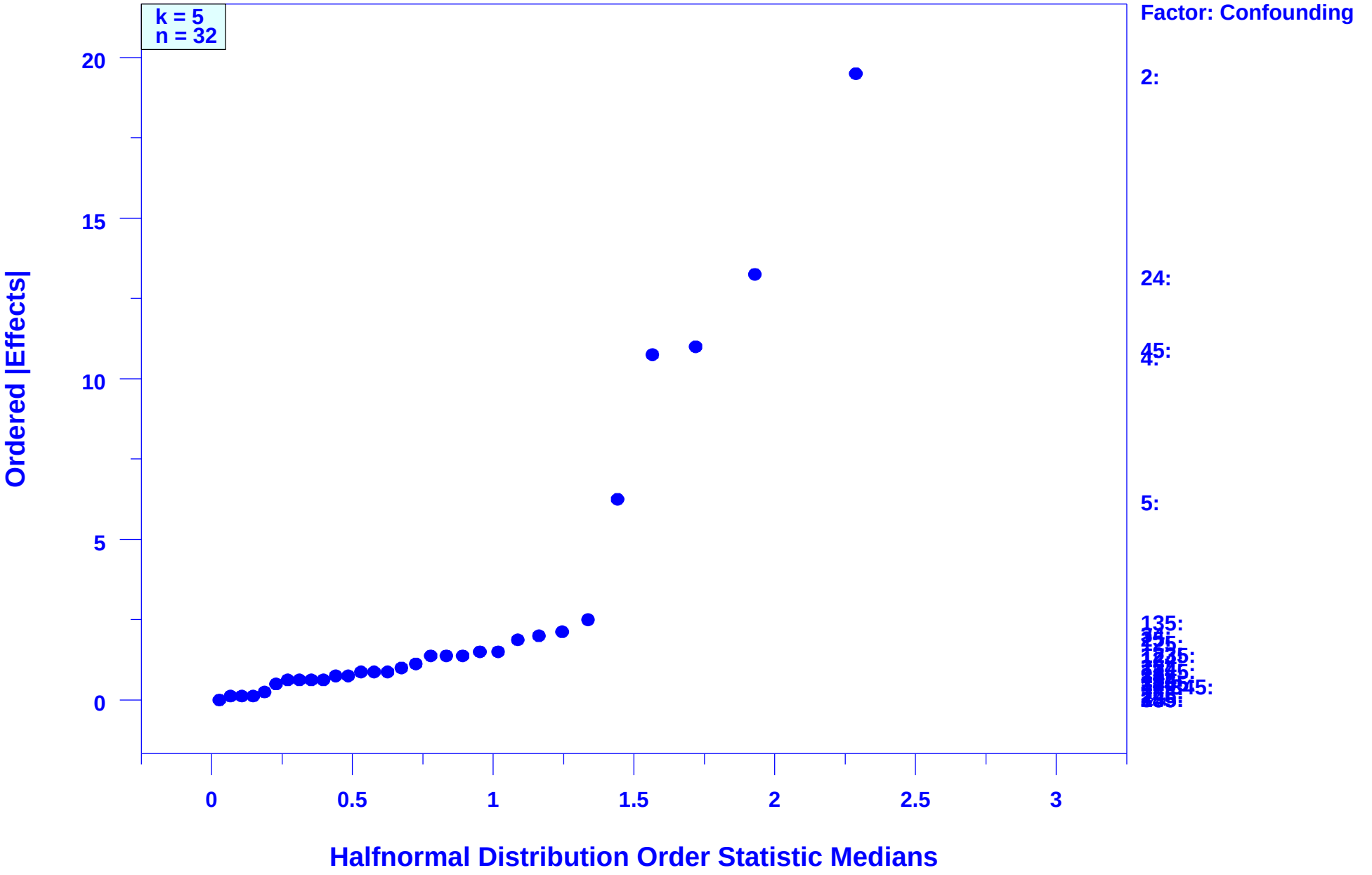


Factor	Effect	(%)	Confounding
2	19.5000	(29.8%)	
24	13.2500	(20.2%)	
45	-11.0000	(-16.8%)	
4	10.7500	(16.4%)	
5	-6.2500	(-9.5%)	
135	-2.5000	(-3.8%)	
34	2.1250	(3.2%)	
25	2.0000	(3.1%)	
125	-1.8750	(-2.9%)	
1235	1.5000	(2.3%)	
123	1.5000	(2.3%)	
12	1.3750	(2.1%)	
1	-1.3750	(-2.1%)	
124	1.3750	(2.1%)	
234	1.1250	(1.7%)	
1345	1.0000	(1.5%)	
35	0.8750	(1.3%)	
23	0.8750	(1.3%)	
14	-0.8750	(-1.3%)	
134	-0.7500	(-1.1%)	

X1: Feed Rate
- : 10
+: 15
X2: Catalyst
- : 1
+: 2
X3: Agitation Rate
- : 100
+: 120
X4: Temperature
- : 140
+: 180
X5: Concentration
- : 3
+: 6

Factors Affecting Chemical Reactor Yield (Box, Hunter, & Hunter)
Design: 2**5 (k=5,n=32)

Halfnormal Probability Plot of |Effects|

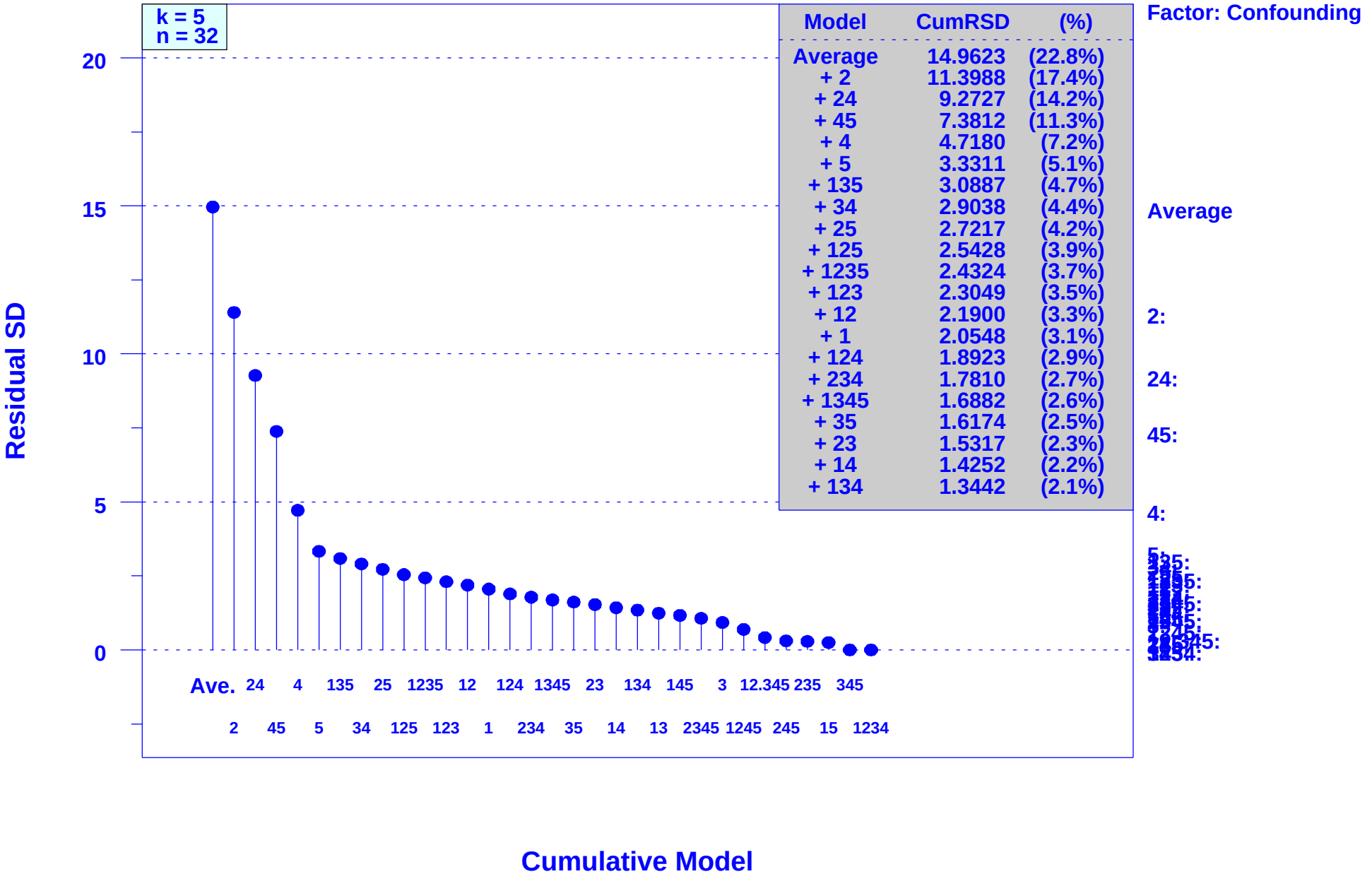


boxreactor_5_32.dp
Datafile: boxreactor_5_32.dat

Factors Affecting Chemical Reactor Yield (Box, Hunter, & Hunter)
Design: 2**5 (k=5,n=32)

Cumulative Residual SD Plot

Mean = 65.5000



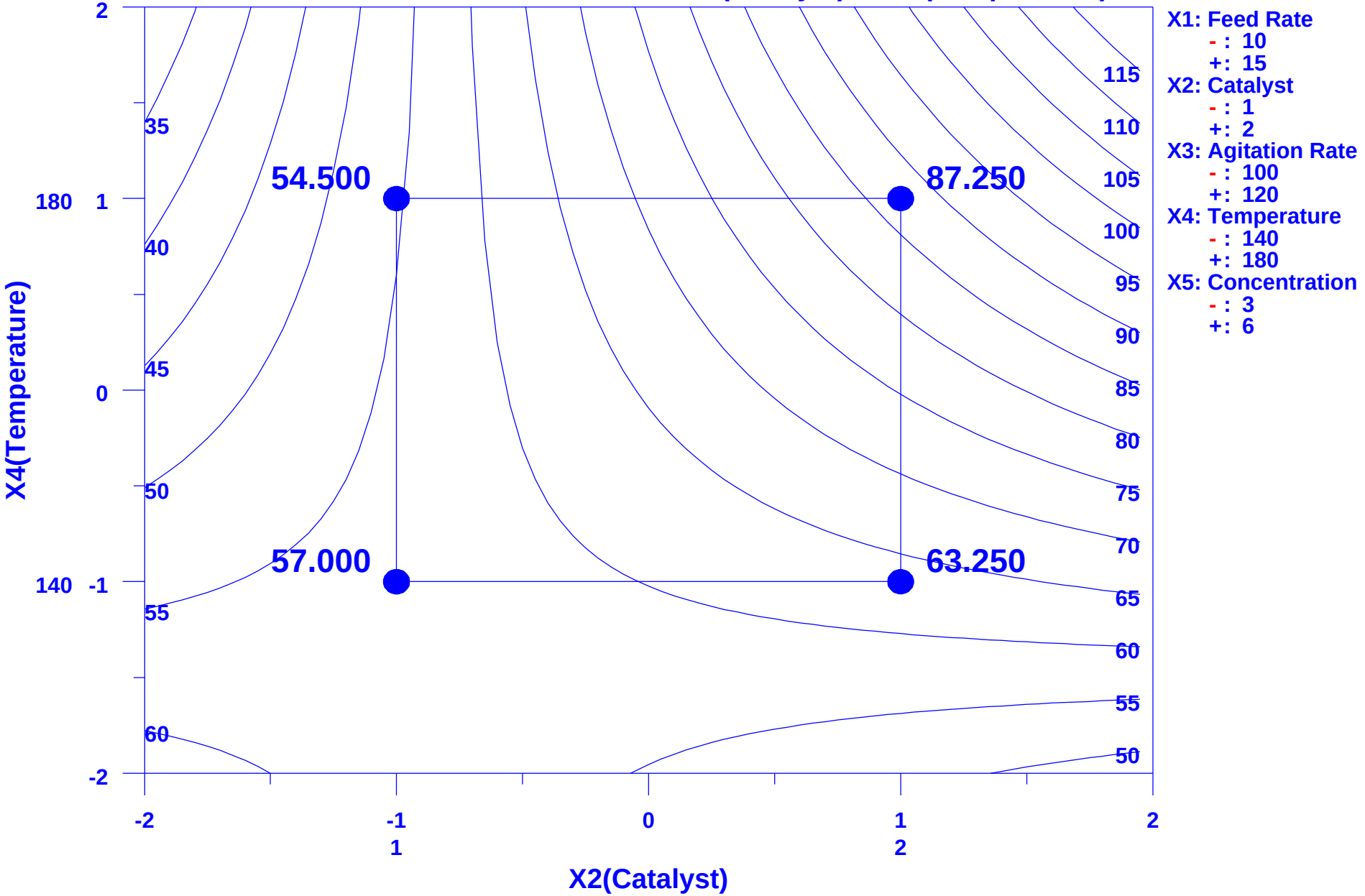
Model	CumRSD	(%)
Average	14.9623	(22.8%)
+ 2	11.3988	(17.4%)
+ 24	9.2727	(14.2%)
+ 45	7.3812	(11.3%)
+ 4	4.7180	(7.2%)
+ 5	3.3311	(5.1%)
+ 135	3.0887	(4.7%)
+ 34	2.9038	(4.4%)
+ 25	2.7217	(4.2%)
+ 125	2.5428	(3.9%)
+ 1235	2.4324	(3.7%)
+ 123	2.3049	(3.5%)
+ 12	2.1900	(3.3%)
+ 1	2.0548	(3.1%)
+ 124	1.8923	(2.9%)
+ 234	1.7810	(2.7%)
+ 1345	1.6882	(2.6%)
+ 35	1.6174	(2.5%)
+ 23	1.5317	(2.3%)
+ 14	1.4252	(2.2%)
+ 134	1.3442	(2.1%)

Cumulative Model

Factors Affecting Chemical Reactor Yield (Box, Hunter, & Hunter)

Design: 2**5 (k=5,n=32)

Contour Plot of 2 Dominant Factors: X2 (Catalyst) & X4 (Temperature)



Center-Point Predicted Value (From 2-Factor Edge-based Model) = 65.5000

boxreactor_5_32.dp
Datafile: boxreactor_5_32.dat