Kedudukan Alat Target Sudut Horizontal   
Biasa Luar Biasa Sudut Terukur TOR   
HI Titik Titik HT Derajat Menit Detik DD Derajat Menit Detik DD Biasa Luar Biasa Rata-Rata Bias 1.51 P1 P6 1.5 276 54 57 =E4+(F4/60)+(G4/3600) 96 54 56 =I4+(J4/60)+(K4/3600) =MOD((H4-H5 P2 1.43 255 43 45 =E5+(F5/60)+(G5/3600) 75 43 47 =I5+(J5/60)+(K5/3600)   
P6 1.54 276 54 57 =E6+(F6/60)+(G6/3600) 96 54 56 =I6+(J6/60)+(K6/3600) =MOD((H6-H7),360) = P2 1.47 255 43 45 =E7+(F7/60)+(G7/3600) 75 43 47 =I7+(J7/60)+(K7/3600)   
1.52 P2 P1 1.6 119 29 30 =E8+(F8/60)+(G8/3600) 299 29 30 =I8+(J8/60)+(K8/3600) =MOD((H8-H P3 1505 249 28 31 =E9+(F9/60)+(G9/3600) 69 28 32 =I9+(J9/60)+(K9/3600)   
P1 1.6 119 29 30 =E10+(F10/60)+(G10/3600) 299 29 30 =I10+(J10/60)+(K10/3600) =MOD((H10-H1 P3 1505 249 28 31 =E11+(F11/60)+(G11/3600) 69 28 32 =I11+(J11/60)+(K11/3600)   
1.64 P3 P2 1.37 359 51 48 =E12+(F12/60)+(G12/3600) 179 51 50 =I12+(J12/60)+(K12/3600) =MO P4 1.55 240 33 35 =E13+(F13/60)+(G13/3600) 60 33 35 =I13+(J13/60)+(K13/3600)   
P2 1.37 359 51 49 =E14+(F14/60)+(G14/3600) 179 51 48 =I14+(J14/60)+(K14/3600) =MOD((H14-H P4 1.55 240 33 35 =E15+(F15/60)+(G15/3600) 60 33 36 =I15+(J15/60)+(K15/3600)   
1663 P4 P3 1505 15 13 11 =E16+(F16/60)+(G16/3600) 195 13 12 =I16+(J16/60)+(K16/3600) =MO P5 1368 286 21 23 =E17+(F17/60)+(G17/3600) 106 21 23 =I17+(J17/60)+(K17/3600)   
P3 1505 15 13 11 =E18+(F18/60)+(G18/3600) 195 13 12 =I18+(J18/60)+(K18/3600) =MOD((H18-H P1 1368 286 21 23 =E19+(F19/60)+(G19/3600) 106 21 23 =I19+(J19/60)+(K19/3600)   
1.48 P5 P4 1.57 335 53 51 =E20+(F20/60)+(G20/3600) 155 53 52 =I20+(J20/60)+(K20/3600) =MO P6 1.55 245 57 57 =E21+(F21/60)+(G21/3600) 65 57 59 =I21+(J21/60)+(K21/3600)   
P4 1.57 335 53 51 =E22+(F22/60)+(G22/3600) 155 53 52 =I22+(J22/60)+(K22/3600) =MOD((H22-H P6 1.55 245 57 57 =E23+(F23/60)+(G23/3600) 65 57 59 =I23+(J23/60)+(K23/3600)   
1.5 P6 P5 1368 168 24 24 =E24+(F24/60)+(G24/3600) 348 24 23 =I24+(J24/60)+(K24/3600) =MO P1 1.6 357 42 45 =E25+(F25/60)+(G25/3600) 177 42 44 =I25+(J25/60)+(K25/3600)   
P5 1368 168 24 24 =E26+(F26/60)+(G26/3600) 348 24 23 =I26+(J26/60)+(K26/3600) =MOD((H26-H P1 1.6 357 42 45 =E27+(F27/60)+(G27/3600) 177 42 44 =I27+(J27/60)+(K27/3600)   
=E19-180

Kedudukan Alat Target Sudut Vertikal   
Biasa Luar Biasa Sudut Terukur TOR   
HI Titik Titik Ht Derajat Menit Detik DD Derajat Menit Detik DD Biasa Luar Biasa Rata-Rata Biasa 1.48 P1 P6 1.54 89 4 11 =E33+(F33/60)+(G33/3600) 270 55 49 =I33+(J33/60)+(K33/3600) =MOD( P2 1.47 88 42 28 =E34+(F34/60)+(G34/3600) 271 17 32 =I34+(J34/60)+(K34/3600)   
P6 1.54 89 4 12 =E35+(F35/60)+(G35/3600) 270 55 48 =I35+(J35/60)+(K35/3600) =MOD((H35-H36 P2 1.47 88 42 30 =E36+(F36/60)+(G36/3600) 271 17 30 =I36+(J36/60)+(K36/3600)

1.52 P2 P1 1.6 91 8 4 =E37+(F37/60)+(G37/3600) 268 51 56 =I37+(J37/60)+(K37/3600) =MOD((H P3 1505 91 1 45 =E38+(F38/60)+(G38/3600) 268 58 15 =I38+(J38/60)+(K38/3600)   
P1 1.6 91 8 2 =E39+(F39/60)+(G39/3600) 268 51 58 =I39+(J39/60)+(K39/3600) =MOD((H39-H40),3 P3 1505 91 1 44 =E40+(F40/60)+(G40/3600) 268 58 16 =I40+(J40/60)+(K40/3600)   
1.64 P3 P2 1.37 89 6 10 =E41+(F41/60)+(G41/3600) 270 53 50 =I41+(J41/60)+(K41/3600) =MOD( P5 1.55 90 9 42 =E42+(F42/60)+(G42/3600) 269 50 18 =I42+(J42/60)+(K42/3600)   
P2 1.37 89 6 9 =E43+(F43/60)+(G43/3600) 270 53 51 =I43+(J43/60)+(K43/3600) =MOD((H44-H43) P5 1.55 90 9 41 =E44+(F44/60)+(G44/3600) 269 50 19 =I44+(J44/60)+(K44/3600)   
1663 P4 P3 1505 89 58 39 =E45+(F45/60)+(G45/3600) 270 1 21 =I45+(J45/60)+(K45/3600) =MOD P5 1368 88 29 22 =E46+(F46/60)+(G46/3600) 271 30 38 =I46+(J46/60)+(K46/3600)   
P3 1505 89 58 37 =E47+(F47/60)+(G47/3600) 270 1 23 =I47+(J47/60)+(K47/3600) =MOD((H47-H4 P5 1368 88 29 21 =E48+(F48/60)+(G48/3600) 271 30 39 =I48+(J48/60)+(K48/3600)   
1.48 P5 P4 1.57 91 40 34 =E49+(F49/60)+(G49/3600) 268 19 26 =I49+(J49/60+(K49/3600)) =MOD P6 1.55 91 1 31 =E50+(F50/60)+(G50/3600) 268 58 29 =I50+(J50/60)+(K50/3600)   
P4 1.57 91 40 36 =E51+(F51/60)+(G51/3600) 268 19 26 =I51+(J51/60)+(K51/3600) =MOD((H51-H5 P6 1.55 91 1 32 =E52+(F52/60)+(G52/3600) 268 58 28 =I52+(J52/60)+(K52/3600)   
1.5 P6 P5 1368 89 6 3 =E53+(F53/60)+(G53/3600) 270 53 57 =I53+(J53/60+(K53/3600)) =MOD((H P1 1.6 90 53 8 =E54+(F54/60)+(G54/3600) 269 6 52 =I54+(J54/60)+(K54/3600)   
P5 1368 89 6 6 =E55+(F55/60)+(G55/3600) 270 53 54 =I55+(J55/60)+(K55/3600) =MOD((H56-H55 P1 1.6 90 53 8 =E56+(F56/60)+(G56/3600) 269 6 52 =I56+(J56/60)+(K56/3600)

FORMULIR UKUR JARAK

Kedudukan Alat Target JARAK Ah   
JARAK MIRING (SD) JARAK VERTIKAL (VD) JARAK HORIZONTAL (HD)   
Titik HI Titik HT Biasa Luar Biasa Sisi Pergi Pulang Rerata Pergi Rerata Pulang Rara-rata Pergi P P1 1.58 P6 1.5 144.067 144.067 P1-P2 =E65 =E68 =AVERAGE(H64:H67) =AVERAGE(I64:I67) =A P2 1.43 87.222 87.221 =F65 =F68 1.691 -1.691 87.204 87.204 =$B$64-$D$65+M65 =$B$68-$D$6 P6 1.5 144.067 144.067 =E67 =E70 1.688 -1.689 87.204 87.204 =$B$64-$D$65+M66 =$B$68-$D$ P2 1.43 87.222 87.221 =F67 =F70 1.691 -1.69 87.204 87.204 =$B$64-$D$65+M67 =$B$68-$D$68 P2 1.623 P1 1.56 87.218 87.218 P2-P3 =E69 =E72 =AVERAGE(H68:H71) =AVERAGE(I68:I71) =A P3 1.68 62.82 62.82 =F69 =F72 -1.054 1.057 62.811 62.811 =$B$68-$D$69+M69 =$B$72-$D$72+ P1 1.56 87.218 87.218 =E71 =E74 -1.05 1.059 62.811 62.811 =$B$68-$D$69+M70 =$B$72-$D$72 P3 1.68 62.82 62.82 =F71 =F74 -1.054 1.059 62.811 62.811 =$B$68-$D$69+M71 =$B$72-$D$72+ P3 1.58 P2 1.42 62.825 62.825 P3-P4 =E73 =E76 =AVERAGE(H72:H75) =AVERAGE(I72:I75) =AV

P4 1.62 91.97 91.97 =F73 =F76 -0.166 0.169 91.97 91.97 =$B$72-$D$73+M73 =$B$76-$D$76+N7 P2 1.42 62.825 62.825 =E75 =E78 -0.168 0.169 91.971 91.971 =$B$72-$D$73+M74 =$B$76-$D$7 P4 1.62 91.97 91.969 =F75 =F78 -0.166 0.169 91.971 91.971 =$B$72-$D$73+M75 =$B$76-$D$76 P4 1.53 P3 1.56 91.963 91.963 P4-P5 =E77 =E80 =AVERAGE(H76:H79) =AVERAGE(I76:I79) =AV P5 1.52 98.073 98.073 =F77 =F80 2.968 -2.97 98.028 98.028 =$B$76-$D$77+M77 =$B$80-$D$80 P3 1.56 91.963 91.963 =E79 =E82 2.97 -2.969 98.028 98.028 =$B$76-$D$77+M78 =$B$80-$D$80 P5 1.52 98.073 98.073 =F79 =F82 2.968 -2.97 98.028 98.028 =$B$76-$D$77+M79 =$B$80-$D$80 P5 1.5 P4 1.5 98.076 98.078 P5-P6 =E81 =E84 =AVERAGE(H80:H83) =AVERAGE(I80:I83) =AVER P6 1.58 65.059 65.059 =F81 =F84 -1.11 1.112 65.05 65.05 =$B$80-$D$81+M81 =$B$84-$D$84+N P4 1.5 98.076 98.076 =E83 =E86 -1.111 1.112 65.053 65.053 =$B$80-$D$81+M82 =$B$84-$D$84 P6 1.58 65.059 65.059 =F83 =F86 -1.11 1.112 65.053 65.053 =$B$80-$D$81+M83 =$B$84-$D$84 P6 1.44 P5 1.59 65.058 65.059 P6-P1 =E85 =E64 =AVERAGE(H84:H87) =AVERAGE(I84:I87) =AV P1 1.51 144.068 144.068 =F85 =F64 -2.224 2.223 144.06 144.06 =$B$84-$D$85+M85 =$B$64-$D P5 1.59 65.059 65.059 =E87 =E66 -2.225 2.222 144.06 144.06 =$B$84-$D$85+M86 =$B$64-$D$6 P1 1.51 144.068 144.068 =F87 =F66 -2.224 2.223 144.06 144.06 =$B$84-$D$85+M87 =$B$64-$D

PERHITUNGAN KKV

Titik ∆H (mm) HD (m) KOREKSI H (m)   
PERGI PULANG RATA-RATA  
 P1 =Z64 =AA64 =AB64 =V64 =$W$109/6 1056898

P2 =Z68 =AA68 =AB68 =V68 =$W$109/6 =Z95+(W95)-Y95

P3 =Z72 =AA72 =AB72 =V72 =$W$109/6 =Z97+(W97)-Y97

P4 =Z76 =AA76 =AB76 =V76 =$W$109/6 =Z99+(W99)-Y99

P5 =Z80 =AA80 =AB80 =V80 =$W$109/6 =Z101+(W101)-Y101

P6 =Z84 =AA84 =AB84 =V84 =$W$109/6 =Z103+(W103)-Y103

P1 =Z105+(W105)-Y105

JUMLAH =SUM(U95:U106) =SUM(V95:V106) =SUM(W95:W106) =SUM(X95:X106) =SUM(Y95:Y106)

JUMLAH KESALAHAN PENUTUP TINGGI   
I∆H PERGI = =U109 fH = I∆H Rata-rata   
I∆H PULANG = =V109 mm = =V116   
SELISIH (fh) = =ABS(V113-V114) m =Z114\*1000   
I∆H Rata-rata = =W109   
I∆D (m) = =X109 toleransi =12\*(SQRT(V117/1000)) mm Ikoreksi = =Y109