

98 NASA-CR-2005-213584 Vol1 Average Fan Performance

Table TB_MassFlow (real NCorrMap,real BetaMap) {

NcorrMap= 0.010000000 {

BetaMap= { 0.000000000 0.034482758 0.068965517 0.103448279 0.137931034
0.172413796 0.206896558 0.241379306 0.275862068 0.310344815
0.344827592 0.379310340 0.413793117 0.448275864 0.482758611
0.517241359 0.551724136 0.586206913 0.620689631 0.655172408
0.689655185 0.724137902 0.758620679 0.793103456 0.827586234
0.862068951 0.896551728 0.931034505 0.965517223 1.000000000 }

WcorrMap= { 0.837990999 0.831705928 0.822474718 0.812065125 0.802020192
0.792424262 0.781313121 0.770707071 0.760213256 0.747979820
0.736363649 0.723989904 0.711503923 0.697474718 0.684343457
0.670454562 0.658080816 0.645959616 0.633333325 0.620707095
0.607828259 0.595202029 0.583080828 0.570875406 0.559343457
0.547474742 0.535353541 0.522979796 0.510858595 0.498989910 }

}

NcorrMap= 0.025000000 {

BetaMap= *;

WcorrMap= { 2.094949484 2.075982094 2.054096460 2.029292822 2.005836248
1.978338957 1.951964140 1.925028086 1.894725084 1.865544319
1.835802436 1.803815961 1.773512959 1.742648721 1.708978653
1.678787827 1.648484826 1.616161585 1.582154870 1.552525282
1.521212101 1.487878799 1.456453443 1.426150441 1.398989916
1.368686914 1.337373734 1.307070732 1.276767731 1.246464610 }

}

NcorrMap= 0.050000001 {

BetaMap= *;

WcorrMap= { 4.186868668 4.151515007 4.107323170 4.055555344 4.005050659
3.954545498 3.904040337 3.848484755 3.791666746 3.732323170
3.672979832 3.611111164 3.551767588 3.488636255 3.422979832
3.354798079 3.292929411 3.227272749 3.161616087 3.103535414
3.039141417 2.976010084 2.914141417 2.852272749 2.797979832
2.731060505 2.671717167 2.611111164 2.555555582 2.494949579 }

}

NcorrMap= 0.075000003 {

BetaMap= *;

WcorrMap= { 6.289843082 6.231481552 6.163860798 6.093153954 6.022446632
5.937373638 5.861111164 5.771043777 5.681818008 5.596969604
5.496071815 5.409652233 5.315375805 5.223232269 5.128283024
5.032323360 4.928282738 4.835353374 4.744444370 4.671155930
4.576879978 4.482604027 4.380471230 4.286195278 4.199775696
4.105499268 4.019079685 3.924803495 3.838383913 3.744107723 }

}

NcorrMap= 0.100000001 {

BetaMap= *;

```
WcorrMap={ 8.393939018 8.309763908 8.222222328 8.121212006 8.023569107
7.936027050 7.814815044 7.693602562 7.565656662 7.447811604
7.343434334 7.212121010 7.090909004 6.969696999 6.848484993
6.707070827 6.585858822 6.468013287 6.333333492 6.198653221
6.070706844 5.949494839 5.821548939 5.700336933 5.582491398
5.461279392 5.340067387 5.225589275 5.101010323 4.979797840 }
}
NcorrMap= 0.150000006 {
BetaMap= *;
WcorrMap={ 12.59595966 12.46212101 12.32323265 12.19191933 12.03367043
11.87542057 11.71380424 11.52861977 11.36026955 11.17845154
11.00000000 10.82491589 10.62963009 10.45454502 10.25589180
10.07407379 9.89225578 9.71043777 9.51851845 9.33333302
9.14478111 8.952020645 8.757575989 8.598484993 8.421717644
8.232323647 8.055555344 7.878787994 7.689393997 7.500000000 }
}
NcorrMap= 0.200000003 {
BetaMap= *;
WcorrMap={ 16.79393959 16.62424278 16.44444466 16.25589180 16.05454636
15.83838367 15.61616135 15.37598228 15.15959549 14.92727280
14.67878819 14.43636322 14.19753075 13.96184063 13.71043777
13.45903492 13.20763206 12.97194195 12.72053909 12.45342350
12.21773243 11.96632957 11.73063946 11.47923660 11.24354649
10.99214363 10.74074078 10.50505066 10.26936054 10.03367043 }
}
NcorrMap= 0.300000012 {
BetaMap= *;
WcorrMap={ 25.13407707 24.91336823 24.65937042 24.37995148 24.08126640
23.76803207 23.44377899 23.11107063 22.77171326 22.42693520
22.07755852 21.72413063 21.36704445 21.00664330 20.64329147
20.27743149 19.90961075 19.54050827 19.17091179 18.80169106
18.43374825 18.06794167 17.70498848 17.34535408 16.98910522
16.63576126 16.28409958 15.93196678 15.57604408 15.21160507 }
}
NcorrMap= 0.400000006 {
BetaMap= *;
WcorrMap={ 32.03423309 31.75140381 31.42536545 31.08754158 30.76150322
30.43939400 30.10942841 29.76767731 29.40628433 29.04489326
28.69528580 28.31649780 27.94612885 27.54882240 27.17171669
26.77441025 26.39730644 26.04040337 25.67003441 25.31986618
24.96634102 24.59932709 24.26262665 23.90572357 23.54769897
23.19304085 22.84736252 22.47474670 22.12457848 21.76992226 }
}
NcorrMap= 0.480399996 {
BetaMap= *;
```

```
WcorrMap={ 37.74416733 37.40650558 37.05896378 36.70192337 36.33693314
35.96543503 35.58872604 35.20769119 34.82404709 34.43893814
34.05316544 33.66745377 33.28248596 32.89912033 32.51792908
32.13913727 31.76304054 31.38988304 31.02009392 30.65440178
30.29218292 29.93342209 29.57810402 29.22643280 28.87870407
28.53429413 28.19283867 27.85416794 27.51833344 27.18430138 }
}
NcorrMap= 0.539600015{
BetaMap= *;
WcorrMap={ 41.53419876 41.18251801 40.83990860 40.50365829 40.17023087
39.83673859 39.50089264 39.16081619 38.81428909 38.46149063
38.10225296 37.73668671 37.36513138 36.98807144 36.60592270
36.21980667 35.83121872 35.44109726 35.05037308 34.65999222
34.27108765 33.88462448 33.50095367 33.12041473 32.74321365
32.36966705 31.99978256 31.63216209 31.26593781 30.90019608 }
}
NcorrMap= 0.588100016{
BetaMap= *;
WcorrMap={ 45.84591293 45.54995346 45.25166702 44.94972992 44.64305115
44.33066559 44.01174164 43.68556213 43.35118484 43.00738907
42.65486908 42.29347610 41.92315292 41.54397202 41.15608215
40.75952148 40.35350418 39.93994904 39.51946259 39.09266281
38.66023254 38.22278976 37.78085327 37.33593369 36.88921356
36.44163513 35.99418259 35.54819489 35.10544586 34.66532516 }
}
NcorrMap= 0.631900012{
BetaMap= *;
WcorrMap={ 50.19073105 49.94612122 49.69059753 49.42673492 49.15705490
48.88272095 48.60385132 48.31975937 48.02918625 47.73018646
47.41979980 47.09716797 46.76076508 46.40937042 46.04211807
45.65854263 45.25854111 44.84187317 44.40820313 43.96117020
43.50252151 43.03420258 42.55831528 42.07703400 41.59272003
41.10835266 40.62611008 40.14755630 39.67390823 39.20439529 }
}
NcorrMap= 0.673399985{
BetaMap= *;
WcorrMap={ 54.29607773 54.11860275 53.94638443 53.77277756 53.59130478
53.39685440 53.18554306 52.95460510 52.70226288 52.42763138
52.13042068 51.80899811 51.46685410 51.10582733 50.72781372
50.33486938 49.92915344 49.51282883 49.08800507 48.65656662
48.22036362 47.78173447 47.34189224 46.90177155 46.46196365
46.02272415 45.58392715 45.14478683 44.70391464 44.26072311 }
}
NcorrMap= 0.712599993{
BetaMap= *;
```

```
WcorrMap={ 58.15859604 58.05349350 57.94581604 57.83227921 57.70981216
57.57564545 57.42733002 57.26272202 57.08002472 56.87776566
56.65480042 56.41027069 56.14273834 55.85172653 55.53882980
55.20464706 54.85007095 54.47627258 54.08468246 53.67694855
53.25495529 52.82067490 52.37585449 51.92402267 51.46831131
51.01154709 50.55667496 50.10673904 49.66489029 49.23171997 }
}
NcorrMap= 0.752099991 {
BetaMap= *;
WcorrMap={ 62.31474304 62.27659988 62.24713135 62.21960068 62.18695068
62.14317322 62.08325958 62.00316620 61.89976501 61.77080154
61.61482239 61.43111038 61.21961975 60.98085785 60.71517563
60.42354202 60.10943985 59.77504349 59.42267609 59.05473328
58.67359543 58.28157425 57.88082123 57.47330475 57.06067657
56.64417648 56.22487259 55.80329132 55.37921906 54.95255280 }
}
NcorrMap= 0.795799971 {
BetaMap= *;
WcorrMap={ 67.64887238 67.64701843 67.64997864 67.65505219 67.65873718
67.65747833 67.64767456 67.62584686 67.58866119 67.53303528
67.45620728 67.35578156 67.22975922 67.07662201 66.89528656
66.68515778 66.44611359 66.17834473 65.88099670 65.55699158
65.20811462 64.83627319 64.44358826 64.03235626 63.60497284
63.16386795 62.71141434 62.24989319 61.78140640 61.30831146 }
}
NcorrMap= 0.816999972 {
BetaMap= *;
WcorrMap={ 70.42424011 70.42424011 70.42424011 70.42424011 70.42424011
70.42424011 70.42424011 70.42424011 70.42361450 70.40142822
70.34331512 70.26403046 70.16857147 70.05451202 69.92280579
69.75467682 69.54417419 69.30488586 69.03921509 68.74518585
68.44965363 68.13405609 67.76887512 67.37168884 66.94145203
66.49484253 66.03226471 65.55953979 65.06365967 64.54082489 }
}
NcorrMap= 0.837199986 {
BetaMap= *;
WcorrMap={ 73.37374115 73.37374115 73.37374115 73.37374115 73.37374115
73.37374115 73.37374115 73.37374115 73.37368011 73.37097168
73.35386658 73.31835175 73.26459503 73.18917847 73.08882904
72.96057892 72.80179596 72.61031342 72.38448334 72.12329102
71.82636261 71.49404907 71.12693787 70.72608185 70.29618835
69.84117126 69.36581421 68.87579346 68.37770844 67.87828827 }
}
NcorrMap= 0.861000001 {
BetaMap= *;
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WcorrMap={ 77.17171478 77.17171478 77.17171478 77.17171478 77.17171478
77.17171478 77.17171478 77.17171478 77.17174530 77.17297363
77.17485046 77.16781616 77.14399719 77.09877014 77.02767944
76.92659760 76.79187012 76.62045288 76.41001892 76.15913391
75.86730194 75.53507233 75.16413116 74.75730896 74.31867218
73.85348511 73.36779785 72.87142181 72.37432861 71.88552094 }
}
NcorrMap= 0.883000016{
BetaMap= *;
WcorrMap={ 81.03030396 81.03030396 81.03030396 81.03030396 81.03030396
81.03030396 81.03030396 81.03030396 81.03030396 81.03030396
81.03014374 81.02431488 81.00905609 80.97826385 80.92594910
80.84719849 80.73754120 80.59314728 80.41098785 80.18895721
79.92591858 79.62184143 79.27770233 78.89555359 78.47844696
78.03037262 77.55615997 77.06140900 76.55234528 76.03586578 }
}
NcorrMap= 0.910300016{
BetaMap= *;
WcorrMap={ 86.03254700 86.03254700 86.03254700 86.03254700 86.03254700
86.03254700 86.03254700 86.03254700 86.03254700 86.03254700
86.03254700 86.03247070 86.02958679 86.01573944 85.98573303
85.93446350 85.85658264 85.74694061 85.60076141 85.41384125
85.18276978 84.90504456 84.57923126 84.20513916 83.78389740
83.31803131 82.81155396 82.27002716 81.70053101 81.11263275 }
}
NcorrMap= 0.932600021{
BetaMap= *;
WcorrMap={ 91.07743835 91.07743835 91.07743835 91.07743835 91.07743835
91.07743835 91.07743835 91.07743835 91.07743835 91.07743835
91.07743835 91.07755280 91.08106232 91.06029510 91.02086639
90.95990753 90.87307739 90.75611115 90.60491943 90.41567230
90.18499756 89.91002655 89.58852386 89.21896362 88.80062866
88.33365631 87.81915283 87.25914001 86.65669250 86.01843262 }
}
NcorrMap= 0.964699984{
BetaMap= *;
WcorrMap={ 95.66329956 95.66329956 95.66329956 95.66329956 95.66329956
95.66329956 95.66329956 95.66329956 95.66329956 95.66329956
95.66329956 95.66329956 95.66392517 95.68634796 95.67102051
95.63625336 95.57588959 95.48374939 95.35388947 95.18083191
94.95963287 94.68630981 94.35805511 93.97325134 93.53163147
93.03449249 92.48472595 91.88690186 91.24735260 90.57588196 }
}
NcorrMap= 1.000000000{
BetaMap= *;
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WcorrMap={ 100.0650940 100.0650940 100.0650940 100.0650940 100.0650940
100.0650940 100.0650940 100.0650940 100.0650940 100.0650940
100.0650940 100.0650940 100.0650940 100.0650940 100.0650940
100.0649796 100.0602493 100.0254593 99.9673233 99.8433762
99.6469498 99.3959961 99.0853195 98.71053314 98.26830292
97.75638580 97.17379761 96.52088165 95.79948425 95.01801300}
}
NcorrMap= 1.015900016{
BetaMap= *;
WcorrMap={ 101.7424240 101.7424240 101.7424240 101.7424240 101.7424240
101.7424240 101.7424240 101.7424240 101.7424240 101.7424240
101.7424240 101.7424240 101.7424240 101.7424240 101.7424240
101.7422791 101.7361984 101.6941223 101.6018906 101.4694519
101.2912521 101.0625076 100.7793884 100.4392548 100.0407562
99.5840378 99.0708084 98.50447083 97.89043427 97.24169159}
}
NcorrMap= 1.031800032{
BetaMap= *;
WcorrMap={ 103.2413025 103.2413025 103.2413025 103.2413025 103.2413025
103.2413025 103.2413025 103.2413025 103.2413025 103.2413025
103.2413025 103.2413025 103.2413025 103.2413025 103.2413025
103.2412491 103.2390747 103.2256317 103.1909485 103.1156693
102.9823761 102.8049469 102.5776215 102.2949142 101.9517670
101.5436401 101.0666580 100.5176315 99.8952560 99.2179489}
}
NcorrMap= 1.071200013{
BetaMap= *;
WcorrMap={ 105.2031403 105.2031403 105.2031403 105.2031403 105.2031403
105.2031403 105.2031403 105.2031403 105.2031403 105.2031403
105.2031403 105.2031403 105.2031403 105.2031403 105.2031403
105.2031479 105.2031174 105.1970520 105.1674194 105.1128922
105.0283890 104.9090042 104.7502365 104.5480957 104.2992172
104.0009995 103.6517105 103.2505875 102.7988968 102.3163452}
}
}
}

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```

Table TB_Efficiency (real NCorrMap,real BetaMap) {
NcorrMap= 0.010000000{
BetaMap= { 0.000000000 0.034482758 0.068965517 0.103448279 0.137931034
0.172413796 0.206896558 0.241379306 0.275862068 0.310344815
0.344827592 0.379310340 0.413793117 0.448275864 0.482758611
0.517241359 0.551724136 0.586206913 0.620689631 0.655172408
0.689655185 0.724137902 0.758620679 0.793103456 0.827586234
0.862068951 0.896551728 0.931034505 0.965517223 1.000000000 }
EffMap ={-0.191695660 0.027873324 0.219883367 0.368091196 0.488357306

```

```
0.582834184 0.653604686 0.713877439 0.761571527 0.794833601
0.819138348 0.834162235 0.842541814 0.844414711 0.841137111
0.836454868 0.831400990 0.827090323 0.821003318 0.813979924
0.805551827 0.796187282 0.787759185 0.778719604 0.770780027
0.760766268 0.749049366 0.736392379 0.724341571 0.713938832 }
}
NcorrMap= 0.025000000{
BetaMap= *;
EffMap ={-0.193067268 0.041105621 0.230038285 0.383046776 0.499824345
0.586170197 0.652107000 0.706287622 0.755652189 0.792310655
0.816176891 0.832107008 0.842341125 0.845537424 0.843545139
0.838729084 0.834515035 0.830300987 0.823076904 0.815644145
0.806822717 0.797792554 0.787990034 0.778683245 0.769268155
0.758697510 0.748010218 0.737591982 0.726735711 0.715521991 }
}
NcorrMap= 0.050000001 {
BetaMap= *;
EffMap ={-0.185265958 0.055451080 0.227409765 0.374958426 0.497381687
0.578854203 0.649339557 0.706592560 0.755992591 0.787651360
0.814214051 0.832006693 0.840992570 0.845585287 0.845819414
0.842775941 0.837859511 0.830836117 0.823344469 0.816436827
0.805768013 0.796482563 0.786450624 0.777078211 0.767986834
0.757482708 0.747287154 0.735511243 0.726403594 0.713664055 }
}
}
NcorrMap= 0.075000003 {
BetaMap= *;
EffMap ={-0.188395709 0.045078829 0.245868266 0.386101991 0.505619526
0.592746139 0.659866214 0.719063520 0.763210714 0.790301025
0.815384626 0.831438124 0.841471553 0.844650984 0.845941365
0.845484972 0.840468228 0.833444834 0.825567842 0.817391276
0.807357848 0.798821032 0.788294315 0.779264212 0.770234108
0.759636819 0.750167251 0.739130437 0.727090299 0.714046836 }
}
}
NcorrMap= 0.100000001 {
BetaMap= *;
EffMap ={-0.193646327 0.047454640 0.234588206 0.389016926 0.501035452
0.597658873 0.668572783 0.720802665 0.762006700 0.787759185
0.809297681 0.828026772 0.837391317 0.842073560 0.844748318
0.845819414 0.842541814 0.836923063 0.828494966 0.817725778
0.808829427 0.799464881 0.789632082 0.780267537 0.769230783
0.757792652 0.747491658 0.736166298 0.722662807 0.709136248 }
}
}
NcorrMap= 0.150000006 {
BetaMap= *;
EffMap ={-0.195585087 0.048347879 0.240253285 0.388164103 0.505577743
```

```

0.599859357 0.670582354 0.729097009 0.763962865 0.791160822
0.815822542 0.832229018 0.840468228 0.843478262 0.845499992
0.845679939 0.843415976 0.837458193 0.831438124 0.821404696
0.813377917 0.803344488 0.792328954 0.783052802 0.774635315
0.762207329 0.752456725 0.740596116 0.727944732 0.716033638 }
}
NcorrMap= 0.200000003{
BetaMap= *;
EffMap ={-0.201176882 0.046515003 0.240317941 0.392591059 0.511574924
0.602081835 0.670592010 0.727884591 0.765138626 0.791847825
0.812541783 0.827215731 0.836998343 0.844147146 0.846780956
0.845466733 0.842642128 0.837374568 0.829849482 0.821234882
0.812541783 0.801404655 0.791237473 0.781070232 0.771170557
0.760735810 0.750904500 0.740705073 0.729966581 0.718265951 }
}
NcorrMap= 0.300000012{
BetaMap= *;
EffMap ={-0.193926483 0.044036582 0.235100508 0.385754794 0.501168430
0.590786636 0.661289990 0.719840109 0.764724672 0.797290981
0.819397986 0.833745837 0.841471553 0.845265329 0.846956551
0.846839368 0.844172060 0.839955568 0.834080279 0.826421380
0.818528414 0.809665561 0.800133765 0.791304350 0.780267537
0.769230783 0.757190645 0.745326936 0.733714044 0.721087158 }
}
NcorrMap= 0.400000006{
BetaMap= *;
EffMap ={ 0.449163884 0.531939805 0.603010058 0.656856179 0.702341199
0.739632130 0.771237433 0.795045733 0.816753983 0.832318425
0.842274249 0.849498332 0.852976561 0.854046822 0.852508366
0.850033462 0.847090304 0.843879580 0.840026915 0.835585296
0.831013262 0.824632108 0.818782985 0.812663436 0.805052459
0.797512352 0.789297640 0.779855549 0.771341741 0.762237787 }
}
NcorrMap= 0.480399996{
BetaMap= *;
EffMap ={ 0.610880375 0.659499466 0.704097033 0.740647733 0.769104779
0.791250348 0.807480931 0.823914468 0.836501539 0.845906138
0.852654457 0.857189178 0.859887660 0.861098766 0.861090779
0.860053360 0.858159304 0.855552733 0.852380753 0.848805785
0.844824970 0.840497613 0.835874617 0.831023991 0.826014638
0.820818067 0.815431535 0.809869587 0.804165006 0.798248172 }
}
NcorrMap= 0.539600015{
BetaMap= *;
EffMap ={ 0.627173483 0.669656575 0.706051409 0.738535941 0.764287770

```

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0.787602961 0.805708528 0.821485162 0.836751759 0.846815765
0.853589773 0.859347165 0.862393796 0.865339994 0.867296338
0.867307186 0.865050197 0.863209188 0.859009504 0.855209053
0.850875914 0.845132768 0.840548635 0.834280908 0.828994572
0.821576416 0.815176606 0.809304178 0.802140832 0.794391274 }
}
NcorrMap= 0.588100016{
BetaMap= *;
EffMap = { 0.647993326 0.693457425 0.732918739 0.762286782 0.785814047
0.806727946 0.823393166 0.835902870 0.845861614 0.853394032
0.860076010 0.865907788 0.870802045 0.874086559 0.876414955
0.877036452 0.875968158 0.873394191 0.869899988 0.866061926
0.860299945 0.855047822 0.849118650 0.842796147 0.835165977
0.827312708 0.818594396 0.809500575 0.801522672 0.794620216 }
}
NcorrMap= 0.631900012{
BetaMap= *;
EffMap = { 0.624851763 0.670017302 0.711980104 0.743891716 0.771544695
0.794168770 0.813436568 0.830080330 0.842622995 0.853523135
0.863515913 0.871745110 0.877499759 0.881636441 0.884659588
0.884756327 0.885189474 0.882548034 0.878933787 0.873833358
0.868747890 0.864421904 0.858659983 0.853421807 0.847500205
0.841020465 0.832357347 0.823454678 0.815829039 0.808127820 }
}
NcorrMap= 0.673399985{
BetaMap= *;
EffMap = { 0.645257890 0.686425865 0.723806322 0.755002737 0.780618727
0.802537739 0.822371066 0.838917613 0.850891292 0.862337530
0.870690465 0.878268361 0.883103490 0.885970175 0.888713241
0.890185356 0.890297115 0.889681935 0.887683451 0.884538054
0.880464673 0.875699759 0.870386124 0.864636302 0.858531594
0.852124512 0.845438182 0.838453054 0.831112862 0.823413193 }
}
NcorrMap= 0.712599993{
BetaMap= *;
EffMap = { 0.633753836 0.672536194 0.708091378 0.739063203 0.767713785
0.792256534 0.812496841 0.830141127 0.845600724 0.858047128
0.867348790 0.874666870 0.881821036 0.886144638 0.888812304
0.890690506 0.891320705 0.891751051 0.891480923 0.889940023
0.888084531 0.885132074 0.880919993 0.876353145 0.872050464
0.866707325 0.860545337 0.854891181 0.850023866 0.844123542 }
}
NcorrMap= 0.752099991{
BetaMap= *;
EffMap = { 0.627912700 0.664008141 0.699429750 0.730898261 0.759249449
```

```
0.784441292 0.806183100 0.826529980 0.843467653 0.855719805
0.865958452 0.872937560 0.879802763 0.885008276 0.888720691
0.891092777 0.892758667 0.894274592 0.895003855 0.894980788
0.893585503 0.890793860 0.887841225 0.885215342 0.881253064
0.877786636 0.873789668 0.869695723 0.865178823 0.860455692 }
}
NcorrMap= 0.795799971 {
BetaMap= *;
EffMap = { 0.625068367 0.660745263 0.693870723 0.724619508 0.753123581
0.779491305 0.803761959 0.824027121 0.839997530 0.852740109
0.862286925 0.869441450 0.875586987 0.880759001 0.885946214
0.889659107 0.892980993 0.895112514 0.896348715 0.896457613
0.896381974 0.895412683 0.894294322 0.891410649 0.887619197
0.884216249 0.880907059 0.877186835 0.872908711 0.866744399 }
}
NcorrMap= 0.816999972 {
BetaMap= *;
EffMap = { 0.621390402 0.658220172 0.693610251 0.726480544 0.756147623
0.782264113 0.804729998 0.823634267 0.839055002 0.851621211
0.861653149 0.869670153 0.875921488 0.880819857 0.885044336
0.888231158 0.891137719 0.893029451 0.894828558 0.896250665
0.895592928 0.895482004 0.894591391 0.892055571 0.889492095
0.886461079 0.882725358 0.879257143 0.875181675 0.869745612 }
}
}
NcorrMap= 0.837199986 {
BetaMap= *;
EffMap = { 0.633054733 0.667151749 0.698828220 0.728259683 0.753622055
0.779886901 0.801865101 0.820582926 0.835797727 0.849073112
0.860314608 0.868022144 0.873765290 0.878335655 0.882204115
0.886403263 0.889777124 0.892664492 0.894320190 0.894849122
0.894543231 0.894241333 0.893060446 0.890857279 0.888097346
0.885298610 0.882410467 0.878529191 0.873538554 0.868679225 }
}
}
NcorrMap= 0.861000001 {
BetaMap= *;
EffMap = { 0.636122942 0.667252123 0.696910858 0.724506438 0.749506891
0.774169803 0.794519842 0.812820494 0.828230321 0.841224849
0.851874709 0.860350490 0.867924035 0.874714434 0.880743027
0.885672390 0.889333367 0.892024875 0.893554509 0.894148588
0.894635141 0.895199060 0.893925965 0.891062379 0.888205945
0.885223448 0.881051600 0.877381802 0.872680545 0.868225813 }
}
}
NcorrMap= 0.883000016 {
BetaMap= *;
EffMap = { 0.638476908 0.668102264 0.696940243 0.722351789 0.745667815
```

```
0.767193675 0.785340190 0.803174675 0.819905579 0.833745778
0.844918430 0.854618490 0.863245368 0.870789409 0.877236664
0.882584989 0.886834323 0.889983118 0.891937435 0.893275499
0.894093335 0.893894076 0.892507195 0.889942110 0.886752963
0.883321822 0.879884899 0.875842750 0.871105433 0.866085112 }
}
NcorrMap= 0.910300016{
BetaMap= *;
EffMap = { 0.624298573 0.652868807 0.682022035 0.708186567 0.729838312
0.752291739 0.770680845 0.787739575 0.805605590 0.819748282
0.833118021 0.845282733 0.856545627 0.866149604 0.873976648
0.880738735 0.886643469 0.890783489 0.893461108 0.894336104
0.894197166 0.893230140 0.891369700 0.888687372 0.885599136
0.882227302 0.877897978 0.872593582 0.866941452 0.860989928 }
}
NcorrMap= 0.932600021 {
BetaMap= *;
EffMap = { 0.626360893 0.657213092 0.683392406 0.706907392 0.728707790
0.749612272 0.768955946 0.785685420 0.802468479 0.816349328
0.829412997 0.842110157 0.852187395 0.862131596 0.869868100
0.877271175 0.882242382 0.887411237 0.890268266 0.892746627
0.892508030 0.891075730 0.889380813 0.887318432 0.884963572
0.880752623 0.876703978 0.871545494 0.863931298 0.855535746 }
}
}
NcorrMap= 0.964699984 {
BetaMap= *;
EffMap = { 0.602835298 0.632059336 0.659618437 0.685622633 0.708874941
0.729377985 0.750015616 0.767233491 0.784169853 0.798743784
0.813006341 0.825704575 0.837129414 0.848710179 0.859068096
0.867522597 0.874947309 0.879305482 0.881786823 0.884192228
0.884956837 0.884850919 0.883202672 0.881057441 0.879040301
0.876601636 0.870778859 0.864919901 0.857821703 0.851186931 }
}
}
NcorrMap= 1.000000000 {
BetaMap= *;
EffMap = { 0.569390774 0.599390328 0.628563881 0.654371142 0.678616464
0.701290965 0.723163545 0.741908729 0.759991646 0.777109742
0.793218493 0.807075143 0.819410622 0.831606984 0.841635883
0.850498855 0.857463241 0.863250852 0.867231131 0.870495558
0.870940447 0.871066928 0.870066106 0.867312968 0.863517642
0.857775748 0.851391137 0.843425691 0.833911777 0.822458148 }
}
}
NcorrMap= 1.015900016 {
BetaMap= *;
EffMap = { 0.553028464 0.580640614 0.607696295 0.633596480 0.659214377
```

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0.682092309 0.704039335 0.723794222 0.741792738 0.758065760
0.774151623 0.787680209 0.800247848 0.810872376 0.820899904
0.830109000 0.838939309 0.844743550 0.850396872 0.853852093
0.854928613 0.855054259 0.854000747 0.851058364 0.847339869
0.842806816 0.837087750 0.829892218 0.822032571 0.813055336 }
}
NcorrMap= 1.031800032{
BetaMap= *;
EffMap = { 0.536185861 0.563967824 0.590570211 0.616069436 0.640533388
0.663924515 0.683735728 0.703393877 0.721008182 0.735167444
0.749220908 0.761601746 0.773064852 0.782899022 0.792045236
0.800501108 0.806650698 0.812848747 0.818163812 0.820985317
0.822824180 0.824016571 0.824325800 0.823071480 0.821006596
0.817704439 0.812713265 0.807361901 0.801978052 0.797274470 }
}
NcorrMap= 1.071200013{
BetaMap= *;
EffMap = { 0.494138569 0.518944025 0.542252302 0.565164387 0.587230027
0.608107924 0.626886904 0.644268930 0.660505652 0.674173236
0.686436236 0.697277069 0.706732154 0.716181219 0.724930704
0.732536793 0.739159584 0.745904803 0.751508772 0.756885231
0.760962784 0.763379991 0.765016377 0.765677869 0.765570760
0.764661610 0.762802541 0.760271907 0.757196605 0.753744543 }
}
}
Table TB_PressureRatio (real NCorrMap,real BetaMap) {
NcorrMap= 0.010000000{
BetaMap= { 0.000000000 0.034482758 0.068965517 0.103448279 0.137931034
0.172413796 0.206896558 0.241379306 0.275862068 0.310344815
0.344827592 0.379310340 0.413793117 0.448275864 0.482758611
0.517241359 0.551724136 0.586206913 0.620689631 0.655172408
0.689655185 0.724137902 0.758620679 0.793103456 0.827586234
0.862068951 0.896551728 0.931034505 0.965517223 1.000000000 }
PqPMap = { 0.999991536 1.000001788 1.000012279 1.000022173 1.000031710
1.000040531 1.000048995 1.000057220 1.000064969 1.000072598
1.000079513 1.000086069 1.000092387 1.000097871 1.000103116
1.000108004 1.000112891 1.000117421 1.000121713 1.000125647
1.000129223 1.000132561 1.000135779 1.000139356 1.000142336
1.000144958 1.000147223 1.000149250 1.000151157 1.000153184 }
}
NcorrMap= 0.025000000{
BetaMap= *;
PqPMap = { 0.999945283 1.000013113 1.000077724 1.000140905 1.000198245
1.000252366 1.000306606 1.000357151 1.000406146 1.000451565

```

```
1.000495195 1.000535369 1.000573754 1.000610471 1.000643611
1.000670791 1.000699282 1.000731826 1.000759006 1.000780821
1.000805259 1.000828862 1.000848055 1.000867248 1.000882626
1.000898957 1.000915289 1.000931621 1.000943780 1.000956059 }
}
NcorrMap= 0.050000001 {
BetaMap= *;
PqPMap = { 0.999784589 1.000069857 1.000310063 1.000558972 1.000803471
1.001007318 1.001211047 1.001414895 1.001620054 1.001803517
1.001978159 1.002144098 1.002301335 1.002449751 1.002580762
1.002703071 1.002825379 1.002930164 1.003034949 1.003139734
1.003227115 1.003314376 1.003393054 1.003471613 1.003534198
1.003611326 1.003672481 1.003724933 1.003778696 1.003819466 }
}
NcorrMap= 0.075000003 {
BetaMap= *;
PqPMap = { 0.999519646 1.000125170 1.000742316 1.001266360 1.001790404
1.002285242 1.002756953 1.003187776 1.003638983 1.004061103
1.004497766 1.004847169 1.005196452 1.005487680 1.005793333
1.006069899 1.006317377 1.006579280 1.006826758 1.006943226
1.007205248 1.007379889 1.007554531 1.007729292 1.007903934
1.008078575 1.008253217 1.008427978 1.008515239 1.008602619 }
}
NcorrMap= 0.100000001 {
BetaMap= *;
PqPMap = { 0.999132454 1.000232935 1.001251817 1.002270699 1.003167391
1.004064083 1.004919887 1.005694270 1.006468654 1.007202387
1.007802010 1.008529782 1.009112120 1.009694338 1.010276556
1.010788918 1.011278033 1.011767149 1.012174726 1.012541533
1.012867570 1.013187766 1.013560414 1.013845682 1.014171720
1.014416337 1.014660835 1.014905334 1.015080094 1.015225649 }
}
NcorrMap= 0.150000006 {
BetaMap= *;
PqPMap = { 0.998078585 1.000524044 1.002853036 1.004992723 1.007103324
1.009141207 1.011033535 1.012853026 1.014599681 1.016200900
1.017802000 1.019257665 1.020640492 1.021950483 1.023187757
1.024352312 1.025443912 1.026535630 1.027481794 1.028427958
1.029228568 1.029868960 1.030684114 1.031266332 1.031965017
1.032430887 1.033129573 1.033595324 1.034061193 1.034526944 }
}
NcorrMap= 0.200000003 {
BetaMap= *;
PqPMap = { 0.996506572 1.000887871 1.005021811 1.008952022 1.012707472
1.016273618 1.019636154 1.023034930 1.025953412 1.028908253
```

```
1.031659365 1.034308553 1.036462903 1.038755417 1.041048050
1.043340564 1.045305729 1.047270775 1.048908353 1.050545812
1.052183390 1.053493500 1.054476023 1.055786014 1.057096124
1.058078647 1.059388638 1.060371161 1.061353683 1.062008739 }
}
NcorrMap= 0.30000012 {
BetaMap= *;
PqPMap = { 0.992218018 1.001928329 1.011196256 1.020040393 1.028480530
1.036535978 1.044224262 1.051560402 1.058556557 1.065222383
1.071565628 1.077592373 1.083308220 1.088718772 1.093830585
1.098651767 1.103192329 1.107464552 1.111482739 1.115263104
1.118823051 1.122180104 1.125350833 1.128348589 1.131181479
1.133850336 1.136344910 1.138641119 1.140696764 1.142447948 }
}
NcorrMap= 0.40000006 {
BetaMap= *;
PqPMap = { 1.040502191 1.053020358 1.064956307 1.076601148 1.087663770
1.098435283 1.108915567 1.118813634 1.128420711 1.137445450
1.146179080 1.154264927 1.162183404 1.169403195 1.176390052
1.182911158 1.189432263 1.195720553 1.201542974 1.207365394
1.212990403 1.218078613 1.223202348 1.227860212 1.232139707
1.236331820 1.240262032 1.243668079 1.247074246 1.250218391 }
}
NcorrMap= 0.480399996 {
BetaMap= *;
PqPMap = { 1.089364290 1.104647279 1.119401932 1.133620381 1.147309780
1.160479665 1.173141837 1.185305357 1.196992993 1.208223224
1.219011784 1.229374766 1.239329100 1.248895645 1.258092403
1.266931891 1.275428414 1.283595562 1.291450739 1.299017191
1.306293607 1.313289285 1.320013046 1.326478362 1.332700372
1.338675380 1.344404101 1.349890947 1.355144501 1.360149503 }
}
NcorrMap= 0.539600015 {
BetaMap= *;
PqPMap = { 1.126177549 1.143648148 1.160743833 1.177453995 1.193750501
1.209604740 1.224989414 1.239877939 1.254234076 1.268054843
1.281331778 1.294061780 1.306245923 1.317889094 1.328996539
1.339587569 1.349691391 1.359329343 1.368524194 1.377301216
1.385690689 1.393721700 1.401411295 1.408776522 1.415831923
1.422594666 1.429075122 1.435249686 1.441105843 1.446628213 }
}
NcorrMap= 0.588100016 {
BetaMap= *;
PqPMap = { 1.172338009 1.193362713 1.213914871 1.233975530 1.253525615
1.272544980 1.291013598 1.308910966 1.326211572 1.342883348
```

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1.358925700 1.374325156 1.389069915 1.403151274 1.416563034
1.429297805 1.441330910 1.452696323 1.463402987 1.473461986
1.482887626 1.491694570 1.499896288 1.507532358 1.514636755
1.521239519 1.527373433 1.533082128 1.538422585 1.543390274 }
}
NcorrMap= 0.631900012 {
BetaMap= *;
PqPMap = { 1.223461032 1.248392820 1.272773862 1.296619058 1.319950819
1.342777848 1.365094662 1.386882544 1.408110023 1.428729653
1.448668718 1.467889905 1.486340165 1.503970146 1.520735979
1.536602259 1.551542640 1.565528035 1.578528523 1.590615273
1.601820111 1.612184525 1.621759534 1.630602717 1.638781786
1.646386385 1.653488398 1.660145998 1.666409135 1.672270179 }
}
NcorrMap= 0.673399985 {
BetaMap= *;
PqPMap = { 1.276016593 1.305252194 1.334253192 1.362928987 1.391168833
1.418864369 1.445913076 1.472221971 1.497709751 1.522309184
1.545964956 1.568592072 1.590220809 1.610854268 1.630503654
1.649191022 1.666948199 1.683813691 1.699831367 1.715044737
1.729501724 1.743269324 1.756386876 1.768888593 1.780800104
1.792137980 1.802907228 1.813091159 1.822652102 1.831576109 }
}
NcorrMap= 0.712599993 {
BetaMap= *;
PqPMap = { 1.329234123 1.363004446 1.396534085 1.429760337 1.462612391
1.495013714 1.526884675 1.558143377 1.588708401 1.618500113
1.647442341 1.675463080 1.702474356 1.728409648 1.753257871
1.776987433 1.799578667 1.821024418 1.841330171 1.860514164
1.878607631 1.895651460 1.911685348 1.926813126 1.941135287
1.954749346 1.967764497 1.980299711 1.992485046 2.004364014 }
}
NcorrMap= 0.752099991 {
BetaMap= *;
PqPMap = { 1.390580654 1.429447889 1.468387604 1.507303119 1.546063781
1.584532142 1.622567892 1.660032868 1.696794510 1.732730031
1.767729402 1.801697731 1.834557295 1.866247177 1.896706223
1.925894618 1.953854918 1.980602503 2.006166458 2.030587196
2.053913832 2.076201677 2.097507954 2.117890835 2.137403250
2.156087875 2.173984289 2.191114426 2.207473040 2.223057985 }
}
NcorrMap= 0.795799971 {
BetaMap= *;
PqPMap = { 1.475516796 1.520613313 1.565796018 1.611027241 1.656240463
1.701352715 1.746264458 1.790863395 1.835025907 1.878620982
```

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1.921513557 1.963567972 2.004651070 2.044637442 2.083410501
2.120867252 2.156919956 2.191493511 2.224478960 2.255903721
2.285766363 2.314078808 2.340869665 2.366184473 2.390081644
2.412630558 2.433907270 2.453991890 2.472964525 2.490923882 }
}
NcorrMap= 0.816999972 {
BetaMap= *;
PqPMap = { 1.522466898 1.570687771 1.618908644 1.667129517 1.715350389
1.763571262 1.811792135 1.860013008 1.908217430 1.955828547
2.002363205 2.048139811 2.093241930 2.137540102 2.181005716
2.222945213 2.263037205 2.301641941 2.338763952 2.374253035
2.409075022 2.442489862 2.473242998 2.501937628 2.528451920
2.553431749 2.576862812 2.598976851 2.619166613 2.637214184 }
}
NcorrMap= 0.837199986 {
BetaMap= *;
PqPMap = { 1.574431658 1.626055717 1.677679777 1.729303718 1.780927777
1.832551837 1.884175897 1.935799837 1.987422228 2.038968801
2.090081215 2.140585184 2.190422058 2.239415407 2.287379265
2.334124565 2.379462719 2.423213482 2.465209246 2.505303383
2.543374777 2.579334259 2.613108158 2.644649029 2.674079895
2.701508284 2.727097988 2.751073599 2.773724318 2.795367241 }
}
NcorrMap= 0.861000001 {
BetaMap= *;
PqPMap = { 1.644484758 1.700669289 1.756853819 1.813038468 1.869222999
1.925407529 1.981592178 2.037776709 2.093962193 2.150183439
2.206428051 2.262388706 2.317767382 2.372342110 2.425874710
2.478119373 2.528830051 2.577770233 2.624721050 2.669494152
2.711938620 2.751952171 2.789489985 2.824571133 2.857288599
2.887810707 2.916368008 2.943400145 2.969390392 2.994806767 }
}
NcorrMap= 0.883000016 {
BetaMap= *;
PqPMap = { 1.719275475 1.780299067 1.841322660 1.902346134 1.963369727
2.024393320 2.085416794 2.146440506 2.207463980 2.268487453
2.329505920 2.390331268 2.450809717 2.510682344 2.569664240
2.627482653 2.683859348 2.738522291 2.791218042 2.841721296
2.889844418 2.935449839 2.978451729 3.018825054 3.056607008
3.091898918 3.124865055 3.155730963 3.184778929 3.212352276 }
}
NcorrMap= 0.910300016 {
BetaMap= *;
PqPMap = { 1.821664214 1.889269590 1.956874967 2.024480343 2.092085600
2.159690857 2.227296352 2.294901609 2.362507105 2.430112362
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2.497717619 2.565320253 2.632817984 2.699884415 2.766267538
2.831691742 2.895844936 2.958396196 3.019006968 3.077343464
3.133091688 3.185970068 3.235743761 3.282240868 3.325364113
3.365102291 3.401542664 3.434880733 3.465424061 3.493653774 }
}
NcorrMap= 0.932600021 {
BetaMap= *;
PqPMap = { 1.931136012 2.005732059 2.080328226 2.154924393 2.229520559
2.304116726 2.378712654 2.453308821 2.527904987 2.602501154
2.677097321 2.751697779 2.826432228 2.900186300 2.973094463
3.044953108 3.115477085 3.184362173 3.251291275 3.315939903
3.377989531 3.437134266 3.493091822 3.545612812 3.594491959
3.639575481 3.680773735 3.718063116 3.751498699 3.781368971 }
}
NcorrMap= 0.964699984 {
BetaMap= *;
PqPMap = { 2.036058187 2.117316484 2.198574781 2.279833078 2.361091375
2.442349434 2.523607731 2.604866028 2.686124325 2.767382622
2.848640919 2.929899216 3.011183262 3.093400955 3.174015522
3.253695965 3.332066774 3.408715725 3.483208895 3.555104971
3.623963833 3.689375401 3.750979662 3.808477402 3.861646891
3.910367727 3.954631090 3.994553089 4.030388355 4.062645435 }
}
}
NcorrMap= 1.000000000 {
BetaMap= *;
PqPMap = { 2.141616106 2.229544640 2.317472935 2.405401468 2.493329763
2.581258297 2.669186592 2.757115126 2.845043421 2.932971954
3.020900249 3.108828783 3.196757078 3.284685612 3.372614145
3.460536957 3.548232317 3.634386063 3.719212055 3.800319433
3.877048731 3.950104475 4.018958569 4.083109856 4.142108917
4.195568085 4.243181705 4.284739971 4.320149422 4.349773407 }
}
}
NcorrMap= 1.015900016 {
BetaMap= *;
PqPMap = { 2.183089018 2.273630142 2.364171267 2.454712391 2.545253515
2.635794401 2.726335526 2.816876650 2.907417774 2.997958899
3.088500023 3.179041147 3.269582272 3.360123396 3.450664520
3.541198492 3.631435156 3.719795465 3.805360317 3.888444185
3.968555450 4.045217991 4.117990494 4.186487675 4.250398636
4.309507370 4.363709927 4.413031101 4.457655907 4.498314857 }
}
}
NcorrMap= 1.031800032 {
BetaMap= *;
PqPMap = { 2.220732689 2.313641787 2.406550646 2.499459743 2.592368603
2.685277700 2.778186560 2.871095657 2.964004517 3.056913376
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3.149822474 3.242731333 3.335640430 3.428549290 3.521458387
3.614364624 3.707163334 3.799365282 3.890379667 3.979032993
4.064144611 4.146261692 4.224843025 4.299336433 4.369192123
4.433873653 4.492876053 4.545732498 4.592104912 4.633020878 }
}
NcorrMap= 1.071200013{
BetaMap= *;
PqPMap = { 2.270835400 2.366890907 2.462946415 2.559001923 2.655057192
2.751112700 2.847168207 2.943223715 3.039279222 3.135334492
3.231389999 3.327445507 3.423501015 3.519556522 3.615611792
3.711667776 3.807721615 3.903453827 3.997873068 4.090791225
4.181794643 4.270449638 4.356319904 4.438976288 4.518010616
4.593048573 4.663767815 4.729908466 4.791355610 4.849315643 }
}
}
Table TB_SurgeLine (real SWcMap) {
SWcMap= { 0.498989910 1.246464610 2.494949579 3.744107723 4.979797840
7.500000000 10.03367043 15.21160221 21.76848030 27.18429947
30.90019608 34.66532516 39.20439148 44.49691772 50.10363388
55.77878571 61.92999268 65.08984375 68.15167999 71.96437073
76.10044861 81.30809021 86.22309875 90.83242798 95.77836609
97.87117004 100.0556335 103.0386581 }
SPqPMap= { 1.000153184 1.000956059 1.003819466 1.008602619 1.015225649
1.034526944 1.062008739 1.142447948 1.250231147 1.360149503
1.446628213 1.543390274 1.672270179 1.826820135 1.980385303
2.192059755 2.466947079 2.618100405 2.783519506 2.990706921
3.208904505 3.484268427 3.771790504 4.050321102 4.320950031
4.458863258 4.580155373 4.758739471 }
}

```