```
Opened Command File: HQDISP.IN

Eta data used: 0W:2W 4W 7W:48E 46E 44E:0E
Eta data used: 0W:2W 4W 7W:48E 46E 44E:24E 22E:0E
Custom Variables vars used:
Quad K1 vars used: 3W:3E
Skew Quad K1 vars used:
SC Solenoid Ks vars used:
Sex K2 vars used:
Skew Sex K2 vars used:
SC Solenoid Ks vars used:
Horiz Steering vars used:
Vert Steering vars used:
SCIR Cam Rho vars used:
H_Separator vars used:
V_Separator vars used:
BPM Tilt vars used:
Set: ORBIT_X_WGT( 0: 99) = 0.
Set: ORBIT_Y_WGT( 0: 99) = 0.
Set: ETA_X_WGT( 0: 99) = 2.
Set: ETA_Y_WGT( 0: 99) = 0.
Limits are now NOT Active
Optimizing using: ALL_VARS
Data to Optimize: ORBIT & TWISS
Dmerit: Allocated dm_dv matrix 1763 1016
Dmerit: Read dMerit matrix from Digested Dmerit File.
Initial merit: 12.31515
Loop Merit A_lambda
1 5.421 1.00E-04
2 5.407 1.00E-05
3 5.404 1.00E-06
4 5.402 1.00E-07
5 5.400 0.00E+00

Top10 merit | Top10 derivative | Top10 delta
Name ix Value | Name ix Derivative | Name ix delta
Eta_X 24 0.6   Quad_K1 24 -1.258E+01 Quad_K1 50  0.006658
Eta_X 26 0.4   Quad_K1 30  9.628E+00 Quad_K1 19  0.006130
Eta_X 83 0.4   Quad_K1 89  9.112E+00 Quad_K1 84  0.005828
Eta_X 30 0.3   Quad_K1 18  9.055E+00 Quad_K1 80  0.005574
Eta_X 32 0.2   Quad_K1 34 -8.922E+00 Quad_K1 96  0.005565
Eta_X 28 0.2   Quad_K1 40  8.701E+00 Quad_K1 13  0.005355
Eta_X 22 0.2   Quad_K1 26 -7.358E+00 Quad_K1 31  0.004709
Eta_X 84 0.2   Quad_K1 45 -6.895E+00 Quad_K1 15  0.004509
Quad_K1 28 0.2 Quad_K1 91  6.850E+00 Quad_K1 29  0.004375
Quad_K1 30 0.1 Quad_K1 14 -5.720E+00 Quad_K1 49 -0.004324
Merit: 5.400498

Merit sum for: Orbit_X 0.0000E+00
Merit sum for: Orbit_Y 0.0000E+00
Merit sum for: Eta_X 4.4213E+00
Merit sum for: Eta_Y 0.0000E+00
Merit sum for: dE/E 2.2150E-05

Merit sum for: Quad K1 9.7916E-01
X | Y
Model Design | Model Design
Chrom 0.819 0.996 0.434 0.652 ! dQ/(dE/E)
dChrom 0.000 0.000
[dChrom = (Model - Data) - (Design - Ref) if a reference is being used.]
[dChrom = (Model - Data) otherwise.]
```