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Restrained Rectangle in Frame, Uniformly Heated Stress Calculator		
Width plate, a =	20.000	in
Height plate, b =	18.000	in
thickness plate, t =	0.500	in
thickness plate, t_2 =	0.625	in
thickness plate, t_3 =	0.625	in
Frame width, w =	1.500	in
Frame width, v =	1.500	in
Modulus of elasticity plate 1, E_1 =	3.900e+004	psi
Modulus of elasticity frame plate 2, E_2 =	3.900e+004	psi
Modulus of elasticity frame plate 3, E_3 =	3.900e+004	psi
coefficient of thermal expansion, α_1 =	5E-06.000000	in / ˚F
coefficient of thermal expansion, α_2 =	5E-06.000000	in / ˚F
coefficient of thermal expansion, α_3 =	5E-06.000000	in / ˚F
strain along x coordinate, ε_x =	0.005000	in/in
strain along x coordinate, ε_y =	0.005000	in/in
poisson's ratio μ =	0.3500	-
Reference temperature , T_0 =	59.00	˚F
temperature center plate 1, T_1 =	102.00	˚F
Frame plate 2 temperature, T_2 =	86.00	˚F
Frame plate 3 temperature, T_3 =	86.00	˚F
Results		
Area A_{x1} =	9.000	in^2
Area A_2 =	1.875	in^2
Area A_{y1} =	10.000	in^2
Area A_3 =	1.875	in^2
Stress, σ_{x1} =	287.100	psi
Stress, σ_{y1} =	287.100	psi
Stress, σ_2 =	189.735	psi
Stress, σ_3 =	189.735	psi
Force in x coordinate direction ΣF_x =	2939.653	Lbs
Force in x coordinate direction ΣF_y =	3226.753	Lbs