first and second temperatures and ultraviolet radiations such that the radiation is attenuated half way through the reflective cholesteric color filter layer to polymerize the second half of the layer.

54. A reflective cholesteric liquid crystal color filter manufacturing process as in claim 43 wherein,

the layer is inverted such that the third and fourth ultraviolet radiations enter the layer from the opposite side from the first and second ultraviolet radiations.

55. A reflective cholesteric liquid crystal color filter manufacturing process as in claim 53 wherein,

the third and fourth ultraviolet radiations enter the layer from the same side as the first and second ultraviolet radiations.

56. A reflective cholesteric liquid crystal color filter manufacturing process as in claim 53 wherein,

a quarter wave plate is polymerized as a first step, having a temperature and an ultraviolet radiation for polymerizing the quarter wave plate.

57. A reflective cholesteric liquid crystal color filter manufacturing process as in claim 56 wherein,

there are three sub-pixels each having a different quarter wave plate for a different primary color, each quarter wave plate having a separate mask, a separate temperature of polymerization and a separate ultraviolet radiation to polymerize the cholesteric liquid crystal material in the quarter wave plate.

58. A reflective cholesteric liquid crystal color filter manufacturing process as in claim 56 wherein,

a broadband polarizer cholesteric liquid crystal is polymerized on the opposite side of the layer from the quarter wave plate by the layer being set to at least one polymerization temperature and irradiated with at least one ultraviolet radiation to polymerize the broadband cholesteric liquid crystal material.

59. A reflective cholesteric liquid crystal color filter manufacturing process as in claim 57 wherein,

a broadband polarizer cholesteric liquid crystal is polymerized on the opposite side of the layer from the quarter wave plate by the layer being set to at least one polymerization temperature and irradiated with at least one ultraviolet radiation to polymerize the broadband cholesteric liquid crystal material.

60. A reflective cholesteric liquid crystal color filter manufacturing process as in claim 59 wherein,

there are three sub-pixels each having a different quarter wave plate for a different primary color, each quarter wave plate having a separate mask, a separate temperature of polymerization and a separate ultraviolet radiation to polymerize the cholesteric liquid crystal material in the quarter wave plate.

61. A reflective cholesteric liquid crystal color filter manufacturing process as in claim 53 wherein,

the first and second ultraviolet radiation being attenuated one fourth way through the reflective cholesteric color filter layer to polymerize only one fourth of the layer,

the steps of claim one are repeated substituting third and fourth temperatures and ultraviolet radiations for the first and second temperatures and ultraviolet radiations such that the radiation is attenuated from one fourth way through the reflective cholesteric color filter layer to one half way through the reflective cholesteric color filter layer to polymerize the second one fourth the layer, flipping the layer over,

the steps of claim one are repeated substituting fifth and sixth temperatures and ultraviolet radiations for the first and second temperatures and ultraviolet radiations such that the frequency is attenuated one fourth way through the reflective cholesteric color filter layer to polymerize the only one fourth of the layer,

the steps of claim one are repeated substituting seventh and eight temperatures and ultraviolet radiations for the first and second temperatures and ultraviolet radiations such that the frequency is attenuated from one fourth way through the reflective cholesteric color filter layer to one half way through the reflective cholesteric color filter layer to polymerize the second one fourth the layer, such that a four portion stack of reflective cholesteric liquid crystal materials is created in one layer.

62. A reflective cholesteric liquid crystal color filter manufacturing process as in claim 53 wherein,

a reflective cholesteric liquid crystal layer to form a black matrix when combined with the two portions of the reflective cholesteric liquid crystal portions in the layer of claim 16 is polymerized as a first step, having a first mask and a first reflective matrix component temperature and ultraviolet radiation and a second mask and a second reflective matrix component temperature and ultraviolet radiation such that all incident light is reflected from the three portion stack of cholesteric liquid crystal material in the layer to form a black matrix.

63. A reflective cholesteric liquid crystal color filter manufacturing process as in claim 38 wherein,

there is a third unmasking step for unmasking a third portion of the mixture of cholesteric liquid crystal material,

setting the temperature of the mixture of cholesteric liquid crystal material to a third specific temperature,

the unmasked mixture of cholesteric liquid crystal material to a third ultraviolet radiation for a third length of time which will polymerize the mixture of cholesteric liquid crystal material to a clear isotropic polymer to transmit all light,

the first and second and third ultraviolet radiation being attenuated half way through the reflective cholesteric color filter layer to polymerize only one half the layer,

the above steps are repeated substituting forth, fifth and sixth temperatures and ultraviolet radiations for the first, second and third temperatures and ultraviolet radiations such that the Ultraviolet radiation is attenuated half way through the reflective cholesteric color filter layer to polymerize the second one half of the layer.

64. A reflective cholesteric liquid crystal color filter manufacturing process as in claim 38 wherein,

the masks on the fist half the layer and the second half of the layer are different such that overlapping portions are polymerized to form a black matrix by reflecting all light from the overlapping portions.