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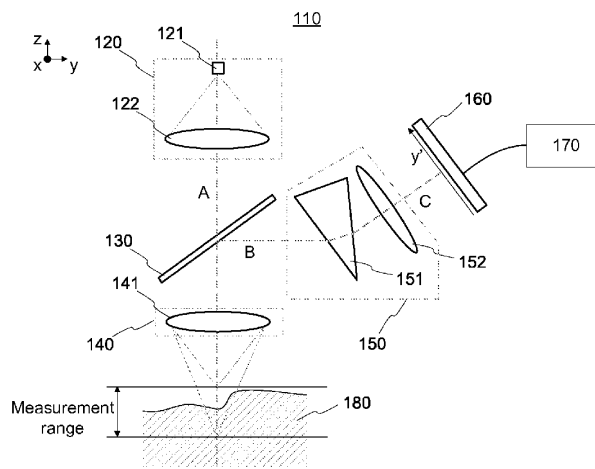


Figure 1

(57) Abstract: According to an example embodiment, an optical sensor apparatus (110) for determining at least one characteristic of a surface of an object (180) positioned within a measurement range is provided, the sensor apparatus (100) comprising: an illumination assembly (120) comprising one or more light sources (121, 121-k) arranged to emit light towards the measurement range through a light-collecting optical assembly, wherein the emitted light covers a predefined range of wavelengths and wherein the one or more light sources are arranged to form respective one or more light emitting area patterns of predefined lateral shape; a first optical assembly (140) arranged to longitudinally disperse the light emitted from the illumination assembly (120) such that light across the predefined range of wavelengths in each of the one or more light emitting area patterns is focused at a respective range of focus distances that constitutes a corresponding sub-range of candidate distances within the measurement range; a beam splitter (130) arranged to transmit the light

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emitted from the illumination assembly (120) towards the first optical assembly (140) and to fold the light reflected from the surface of the object (180) received through the first optical assembly (140); a second optical assembly (150) arranged to receive the folded light across the predefined range of wavelengths, to laterally disperse the received light across the predefined range of wavelengths and to focus the light across the predefined range of wavelengths at a predefined distance; a light sensor assembly (160) having a sensor plane arranged at the predefined distance to receive the laterally dispersed light across the predefined range of wavelengths such that the light originating from the one or more light emitting area patterns is received at respective one or more corresponding sub-ranges of positions along an axis (y') on the sensor plane; and a detector assembly (170) arranged to determine the at least one characteristic of said surface of said object (180) based on the laterally dispersed light received across said one or more sub-ranges of positions along said axis (y') on the sensor plane.