

LSHC9S 33-512N, LSHC9R

iC-LSHC Encoder Disc and Reticle

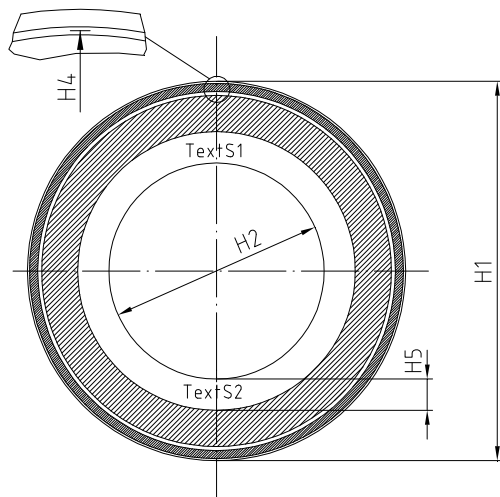


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CODE DISC ORDERING INFORMATION

| Type | Order Designation | Description/Options |
|--------------|-------------------|--|
| Encoder Disc | LSHC9S 33-512N | Nonius Code Disc 512 PPR, dia 33 mm |

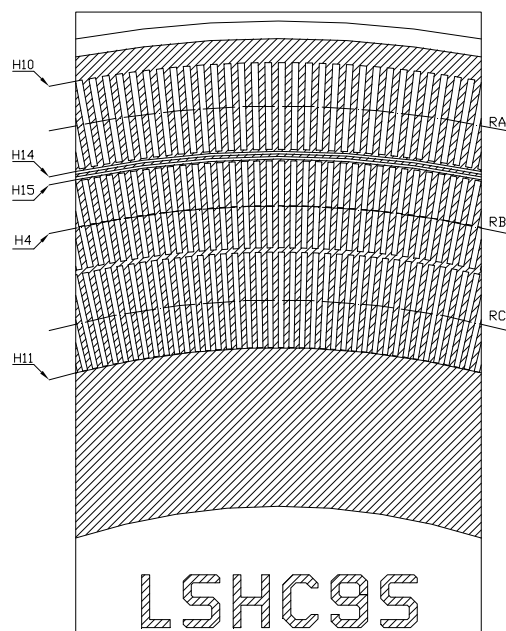
PHYSICAL DIMENSIONS



Design Example

| Item | Parameter | Comments | [mm] | Tolerance |
|------|--------------------------------|----------------------------------|-----------|-----------------------|
| H1 | Outer Diameter | | 33.0 | $\pm 100 \mu\text{m}$ |
| H2 | Inner Diameter | | 18.0 | $+ 200 \mu\text{m}$ |
| H3 | Thickness | | 1 | $\pm 100 \mu\text{m}$ |
| H4 | Radius of Chip Center | referred to origin | 14.5 | |
| H5 | Distance Pattern to Drill Hole | | 2.3 | |
| H6 | Code Track Eccentricity | referred to center of inner hole | ± 0.2 | |
| H7 | TextS1 | readable on side of pattern | LSHC9S | |
| H8 | TextS2 | readable on side of pattern | 33-512 | |

TRACK LAYOUT



| Item | Parameter | Comments | [mm] |
|------|-------------------------------|----------------------------------|---------|
| H4 | Radius of Chip Center | referred to origin | 14.500 |
| H10 | Code Pattern Radius | end | 16.125 |
| H11 | Code Pattern Radius | begin | 12.895 |
| H12 | Recommended LED Spot Diameter | LED Spot | > 3.2 |
| H13 | Recommended LED Spot Center | radius as center of illumination | 14.500 |
| H14 | Alignment Circle | end of circle | 15.120 |
| H15 | Alignment Circle | begin of circle | 15.030 |
| RA | Track Radius | RA | 15.805 |
| RB | Track Radius | RB | 15.355 |
| RC | Track Radius | RC | 14.725 |
| RD | Track Radius | RD | 14.275 |
| RE | Track Radius | RE | 13.645 |
| RF | Track Radius | RF | 13.195 |

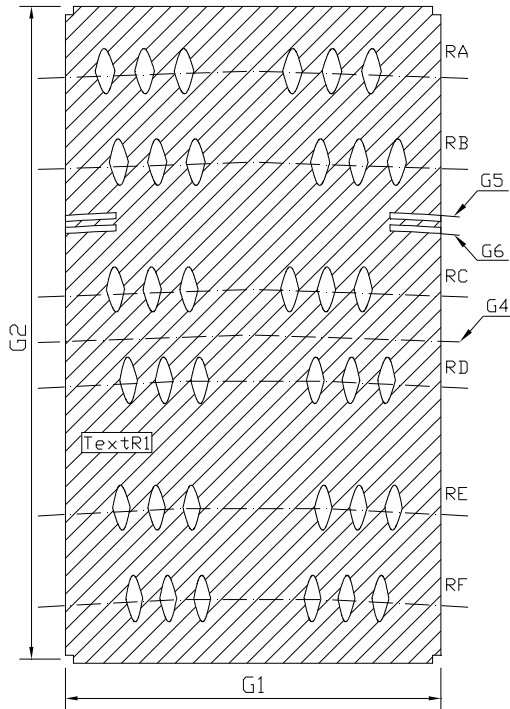
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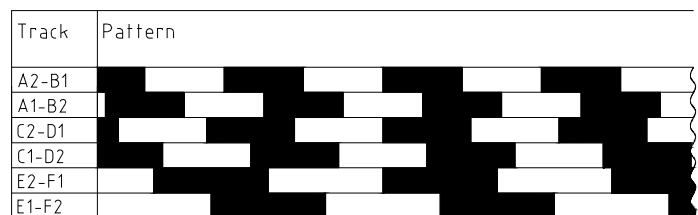
PHYSICAL DIMENSIONS: Reticle



| Item | Parameter | Comments | [mm] | Tolerance |
|------|-----------------------|-----------------------------|--------|-----------|
| G1 | Width | | 1.90 | |
| G2 | Height | | 3.30 | |
| G3 | Thickness | | 0.50 | ± 10% |
| G4 | Radius of Chip Center | referred to origin | 14.500 | |
| G5 | Alignment Circle | end of circle | 15.120 | |
| G6 | Alignment Circle | begin of circle | 15.030 | |
| G7 | TextR1 | readable on side of pattern | LSHC9R | |
| RA | Track Radius Nonius | RA | 15.805 | |
| RB | Radius Track Nonius | RB | 15.355 | |
| RC | Track Radius Master | RC | 14.725 | |
| RD | Track Radius Master | RD | 14.275 | |
| RE | Track Radius Segment | RE | 13.645 | |
| RF | Track Radius Segment | RF | 13.195 | |

TRACK ASSIGNMENT: Reticle

| Output | Signal | Signal | Output |
|--------|---------------|---------------|--------|
| A1 | 511 PPR PSINN | 511 PPR PCOSN | A2 |
| B1 | 511 PPR NCOSN | 511 PPR NSINN | B2 |
| C1 | 512 PPR PSINM | 512 PPR PCOSM | C2 |
| D1 | 512 PPR NCOSM | 512 PPR NSINM | D2 |
| E1 | 496 PPR PSINS | 496 PPR PCOSS | E2 |
| F1 | 496 PPR NCOSS | 496 PPR NSINS | F2 |



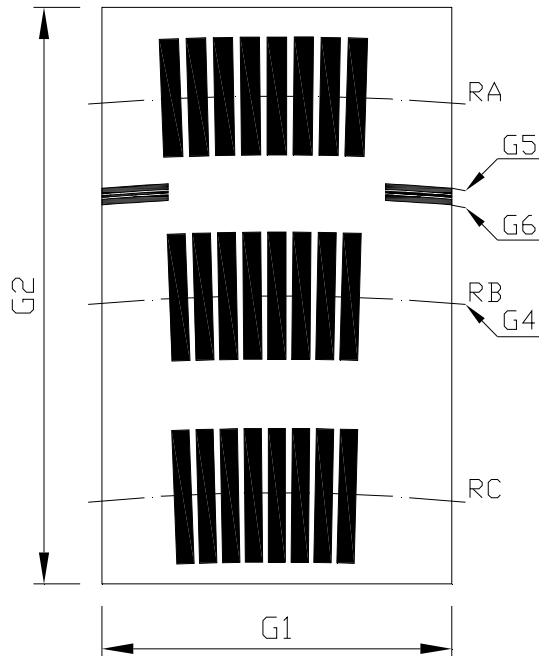
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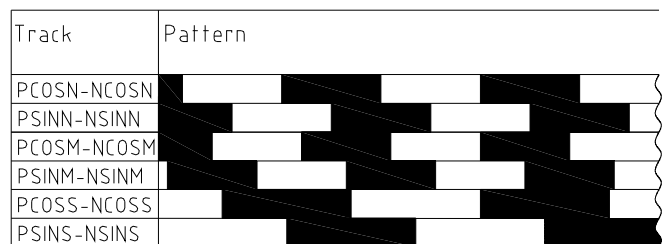
PHYSICAL DIMENSIONS: Photosensor Array



| Item | Parameter | Comments | [mm] |
|------|--------------------------|--------------------|--------|
| G0 | Name and Design Release | iC-PN3312 | |
| G1 | Window Width | | 1.90 |
| G2 | Window Height | | 3.24 |
| G4 | Radius of Chip Center | referred to origin | 14.500 |
| G5 | Reflective Alignment Aid | end of circle | 15.120 |
| G6 | Reflective Alignment Aid | begin of circle | 15.030 |
| RA | Track Radius Nonius | | 15.580 |
| RB | Track Radius Master | | 14.500 |
| RC | Track Radius Segment | | 13.420 |

TRACK ASSIGNMENT: Photosensor Array

| Radius | Signal | | | |
|--------|------------------|------------------|------------------|------------------|
| | RA | 511 PPR PSINN | 511 PPR PCOSN | 511 PPR NSINN |
| RB | 512 PPR PSINM | 512 PPR PCOSM | 512 PPR NSINM | 512 PPR NCOSM |
| RC | 496 PPR PSINS | 496 PPR PCOSS | 496 PPR NSINS | 496 PPR NCOSS |



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