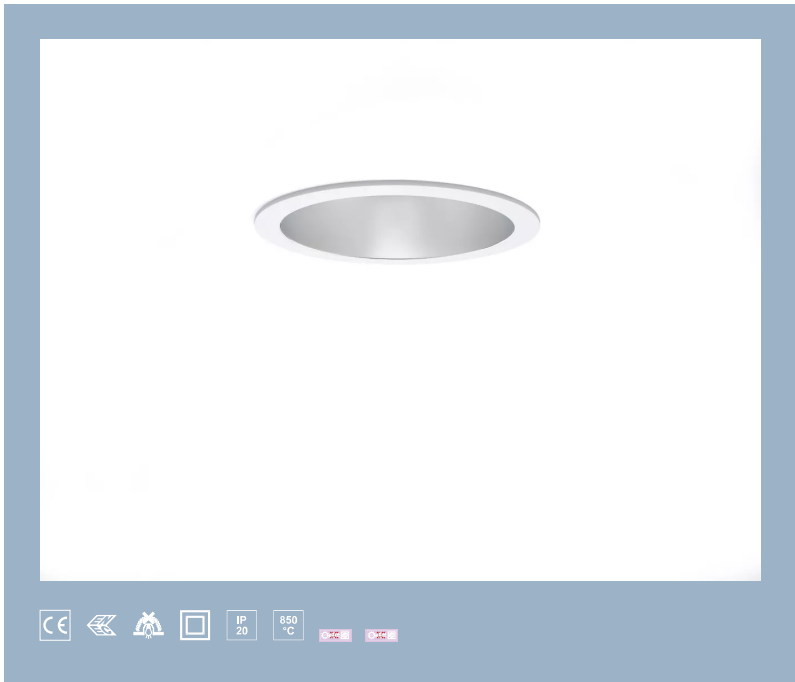


# D90/LEDW10DEX1



recessed luminaire • round

Application : General office area's, Auditoria, General education area's, Patient rooms, General healthcare area's

housing: polycarbonate

light source : LED • 3000 K

optics : reflector and lens • polycarbonate (PC) with aluminium thin film, satin look • wide-angle

UGR classification : <=19

luminous flux: 1200 lm

luminous efficacy : 117 lm/W

LLMF: 99% @ 50khrs (Tq=25°C)

## Product information

### Mechanical properties

dimensions : 190 mm x 100 mm

cut-out size : 175 mm x 100 mm

colour: RAL9003 - signal white

trim: flat trim

type : individual luminaire

IP: IP20

### Electrical properties

driver: DALI driver controlled by integrated sensor

power : 10.3 W

voltage : 220-240V

frequency : 50-60Hz AC/DC

photobiological safety : EN 62471: RISK GROUP 1 UNLIMITED

Luminance

luminous flux : 1200 lm

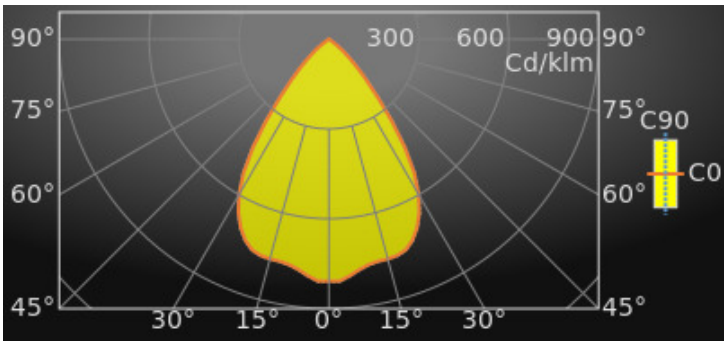
luminous efficacy : 117 lm/W

luminance @ 65° = : 1000 cd/m²

UGR classification =: <=19

luminous area : 0.02 m²

| Gamma | Average Luminances (Cd/m²) for 1200lm |       |       |       |       |
|-------|---------------------------------------|-------|-------|-------|-------|
|       | C0                                    | C30   | C45   | C60   | C90   |
| 45°   | 12084                                 | 12084 | 12084 | 12084 | 12084 |
| 50°   | 5966                                  | 5966  | 5966  | 5966  | 5966  |
| 55°   | 1066                                  | 1066  | 1066  | 1066  | 1066  |
| 60°   | 112                                   | 112   | 112   | 112   | 112   |
| 65°   | 21                                    | 21    | 21    | 21    | 21    |
| 70°   | 2                                     | 2     | 2     | 2     | 2     |
| 75°   | 0                                     | 0     | 0     | 0     | 0     |
| 80°   | 0                                     | 0     | 0     | 0     | 0     |
| 85°   | 0                                     | 0     | 0     | 0     | 0     |



Classifications

CIE: 900 / 1000 / 1000 / 1000 / 1000

CIE FLUXCODE : 0.90 / 1.00 / 1.00 / 1.00 / 1.00

BZ: BZ1

CAE: Symmetrical

DIN: A60 (Nach Arbeitsblatt 7)

DIN\_U: Phi u = 1.00

DIN\_SU: Phi su = 0.81

UTE: 1.00 A + 0.00 T



Lifetime Data (Tq=25.0°C)

| Time(khrs) | LLMF(%) | Cx(%) |
|------------|---------|-------|
| 10         | 100     | 2     |
| 20         | 100     | 4     |
| 30         | 100     | 6     |
| 40         | 99      | 8     |
| 50         | 99      | 10    |
| 60         | 99      | 12    |

## Luminous intensities in cd

Intensity for 1200lm

| Gamma | C0    | C45   | C90   |
|-------|-------|-------|-------|
| 0°    | 969.8 | 969.8 | 969.8 |
| 5°    | 952.4 | 952.4 | 952.4 |
| 10°   | 917.4 | 917.4 | 917.4 |
| 15°   | 911.4 | 911.4 | 911.4 |
| 20°   | 898.6 | 898.6 | 898.6 |
| 25°   | 834.7 | 834.7 | 834.7 |
| 30°   | 719.2 | 719.2 | 719.2 |
| 35°   | 530.9 | 530.9 | 530.9 |
| 40°   | 304.4 | 304.4 | 304.4 |
| 45°   | 163.3 | 163.3 | 163.3 |
| 50°   | 73.3  | 73.3  | 73.3  |
| 55°   | 11.7  | 11.7  | 11.7  |
| 60°   | 1.1   | 1.1   | 1.1   |
| 65°   | 0.2   | 0.2   | 0.2   |
| 70°   | 0.0   | 0.0   | 0.0   |
| 75°   | 0.0   | 0.0   | 0.0   |
| 80°   | 0.0   | 0.0   | 0.0   |
| 85°   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0   | 0.0   | 0.0   |

## UGR classification =

Corrected Glare Ratings for a Total Lamp Flux of 1200lm (S = 0.25H)

|                 | Room Reflection Factors (%)                                    |      |      |      |       |                |      |      |      |      |       |
|-----------------|----------------------------------------------------------------|------|------|------|-------|----------------|------|------|------|------|-------|
| Ceiling         | 70                                                             | 70   | 50   | 50   | 30    | 70             | 70   | 50   | 50   | 30   |       |
| Walls           | 50                                                             | 30   | 50   | 30   | 30    | 50             | 30   | 50   | 30   | 30   |       |
| Floor           | 20                                                             | 20   | 20   | 20   | 20    | 20             | 20   | 20   | 20   | 20   |       |
| Room Dimensions | Viewed Crosswise                                               |      |      |      |       | Viewed Endwise |      |      |      |      |       |
| X = 2H Y = 2H   | 17.1                                                           | 18.5 | 17.4 | 18.7 | 19.0  | 17.1           | 18.5 | 17.4 | 18.7 | 19.0 |       |
| Y = 3H          | 16.9                                                           | 18.1 | 17.2 | 18.4 | 18.7  | 16.9           | 18.1 | 17.2 | 18.4 | 18.7 |       |
| Y = 4H          | 16.8                                                           | 18.0 | 17.2 | 18.3 | 18.5  | 16.8           | 18.0 | 17.2 | 18.3 | 18.5 |       |
| Y = 6H          | 16.7                                                           | 17.8 | 17.1 | 18.1 | 18.4  | 16.7           | 17.8 | 17.1 | 18.1 | 18.4 |       |
| Y = 8H          | 16.7                                                           | 17.7 | 17.1 | 18.0 | 18.4  | 16.7           | 17.7 | 17.1 | 18.0 | 18.4 |       |
| Y = 12H         | 16.7                                                           | 17.6 | 17.1 | 18.0 | 18.3  | 16.7           | 17.6 | 17.1 | 18.0 | 18.3 |       |
| X = 4H Y = 2H   | 16.8                                                           | 18.0 | 17.2 | 18.3 | 18.6  | 16.8           | 18.0 | 17.2 | 18.3 | 18.6 |       |
| Y = 3H          | 16.7                                                           | 17.6 | 17.1 | 18.0 | 18.3  | 16.7           | 17.6 | 17.1 | 18.0 | 18.3 |       |
| Y = 4H          | 16.6                                                           | 17.4 | 17.0 | 17.8 | 18.2  | 16.6           | 17.4 | 17.0 | 17.8 | 18.2 |       |
| Y = 6H          | 16.5                                                           | 17.3 | 17.0 | 17.6 | 18.0  | 16.5           | 17.3 | 17.0 | 17.6 | 18.0 |       |
| Y = 8H          | 16.5                                                           | 17.2 | 16.9 | 17.6 | 18.0  | 16.5           | 17.2 | 16.9 | 17.6 | 18.0 |       |
| Y = 12H         | 16.5                                                           | 17.1 | 16.9 | 17.5 | 17.9  | 16.5           | 17.1 | 16.9 | 17.5 | 17.9 |       |
| X = 8H Y = 4H   | 16.5                                                           | 17.2 | 16.9 | 17.6 | 18.0  | 16.5           | 17.2 | 16.9 | 17.6 | 18.0 |       |
| Y = 6H          | 16.4                                                           | 17.0 | 16.9 | 17.4 | 17.9  | 16.4           | 17.0 | 16.9 | 17.4 | 17.9 |       |
| Y = 8H          | 16.4                                                           | 16.9 | 16.9 | 17.3 | 17.8  | 16.4           | 16.9 | 16.9 | 17.3 | 17.8 |       |
| Y = 12H         | 16.3                                                           | 16.8 | 16.8 | 17.3 | 17.8  | 16.3           | 16.8 | 16.8 | 17.3 | 17.8 |       |
| X = 12H Y = 4H  | 16.5                                                           | 17.1 | 16.9 | 17.5 | 17.9  | 16.5           | 17.1 | 16.9 | 17.5 | 17.9 |       |
| Y = 6H          | 16.4                                                           | 16.9 | 16.9 | 17.3 | 17.8  | 16.4           | 16.9 | 16.9 | 17.3 | 17.8 |       |
| Y = 8H          | 16.3                                                           | 16.8 | 16.8 | 17.3 | 17.8  | 16.3           | 16.8 | 16.8 | 17.3 | 17.8 |       |
|                 | UGR Variations with Observer Position for Luminaire Spacings S |      |      |      |       |                |      |      |      |      |       |
| S = 1.0H        | +3.7                                                           |      |      |      | -16.0 |                | +3.7 |      |      |      | -16.0 |
| S = 1.5H        | +6.4                                                           |      |      |      | -36.1 |                | +6.4 |      |      |      | -36.1 |
| S = 2.0H        | +8.4                                                           |      |      |      | -48.5 |                | +8.4 |      |      |      | -48.5 |

## Colour properties

Correlated Colour Temperature : 3000

Ra: CRI (Ra) 80

Efficiency

| Utilisation Factors according to IES (%) |                             |     |     |     |     |     |     |    |    |    |
|------------------------------------------|-----------------------------|-----|-----|-----|-----|-----|-----|----|----|----|
|                                          | Room Reflection Factors (%) |     |     |     |     |     |     |    |    |    |
| Ceiling                                  | 80                          | 80  | 80  | 50  | 50  | 50  | 30  | 30 | 30 | 0  |
| Walls                                    | 50                          | 30  | 10  | 50  | 30  | 10  | 50  | 30 | 10 | 0  |
| Floor                                    | 20                          | 20  | 20  | 20  | 20  | 20  | 20  | 20 | 20 | 0  |
| RCR = 1                                  | 110                         | 109 | 107 | 104 | 103 | 102 | 100 | 99 | 98 | 93 |
| 2                                        | 102                         | 99  | 96  | 97  | 94  | 92  | 94  | 92 | 90 | 85 |
| 3                                        | 94                          | 90  | 87  | 90  | 87  | 84  | 87  | 85 | 82 | 78 |
| 4                                        | 87                          | 82  | 78  | 84  | 80  | 77  | 81  | 78 | 75 | 72 |
| 5                                        | 81                          | 75  | 71  | 78  | 73  | 70  | 76  | 72 | 69 | 66 |
| 6                                        | 75                          | 69  | 65  | 73  | 68  | 64  | 71  | 67 | 64 | 61 |
| 7                                        | 70                          | 64  | 60  | 68  | 63  | 59  | 67  | 62 | 59 | 56 |
| 8                                        | 65                          | 59  | 55  | 64  | 58  | 55  | 62  | 58 | 54 | 52 |
| 9                                        | 61                          | 55  | 51  | 60  | 54  | 51  | 59  | 54 | 50 | 49 |
| 10                                       | 57                          | 51  | 47  | 56  | 51  | 47  | 55  | 50 | 47 | 45 |

| Utilisation Factors according to LiTG (%) |                             |     |     |     |     |     |     |     |    |    |
|-------------------------------------------|-----------------------------|-----|-----|-----|-----|-----|-----|-----|----|----|
|                                           | Room Reflection Factors (%) |     |     |     |     |     |     |     |    |    |
| Ceiling                                   | 80                          | 80  | 80  | 50  | 50  | 50  | 50  | 50  | 30 | 0  |
| Walls                                     | 50                          | 30  | 50  | 30  | 50  | 30  | 50  | 30  | 30 | 0  |
| Floor                                     | 30                          | 30  | 10  | 10  | 30  | 30  | 10  | 10  | 10 | 0  |
| k = 0.60                                  | 71                          | 65  | 68  | 63  | 69  | 64  | 67  | 62  | 62 | 58 |
| 0.80                                      | 82                          | 75  | 77  | 72  | 79  | 73  | 75  | 71  | 71 | 67 |
| 1.00                                      | 89                          | 82  | 83  | 78  | 85  | 80  | 81  | 77  | 77 | 72 |
| 1.25                                      | 98                          | 92  | 90  | 86  | 94  | 89  | 88  | 85  | 85 | 81 |
| 1.50                                      | 103                         | 97  | 93  | 90  | 97  | 93  | 91  | 89  | 88 | 84 |
| 2.00                                      | 109                         | 104 | 97  | 95  | 102 | 99  | 95  | 93  | 92 | 88 |
| 2.50                                      | 113                         | 108 | 100 | 98  | 105 | 102 | 97  | 96  | 94 | 91 |
| 3.00                                      | 117                         | 113 | 102 | 100 | 108 | 106 | 100 | 98  | 97 | 94 |
| 4.00                                      | 119                         | 116 | 103 | 102 | 110 | 107 | 100 | 99  | 98 | 94 |
| 5.00                                      | 122                         | 119 | 104 | 103 | 112 | 110 | 102 | 101 | 99 | 96 |

## Dimensional drawing

