



IESA TRACK & FIELD

METRIC FIELD EVENT INFORMATION

IESA METRIC MANUAL FOR FIELD EVENTS

Introduction

Beginning with the 2024 Boys and Girls Track and Field State Series, the Track and Field Advisory Committee recommended conducting all field events using metric measurements. The Committee's rationale for the change asserts that the NFHS permits either metric or English measurements in field events.

Although English measurements are common in interscholastic field events, measuring fractions can sometimes be difficult, leading to questions of accuracy. Going to metric allows us to use factors of ten anywhere on the measuring tape. Lastly, outside of the interscholastic community, metric measurements for field events are widely accepted as the national and international standard.

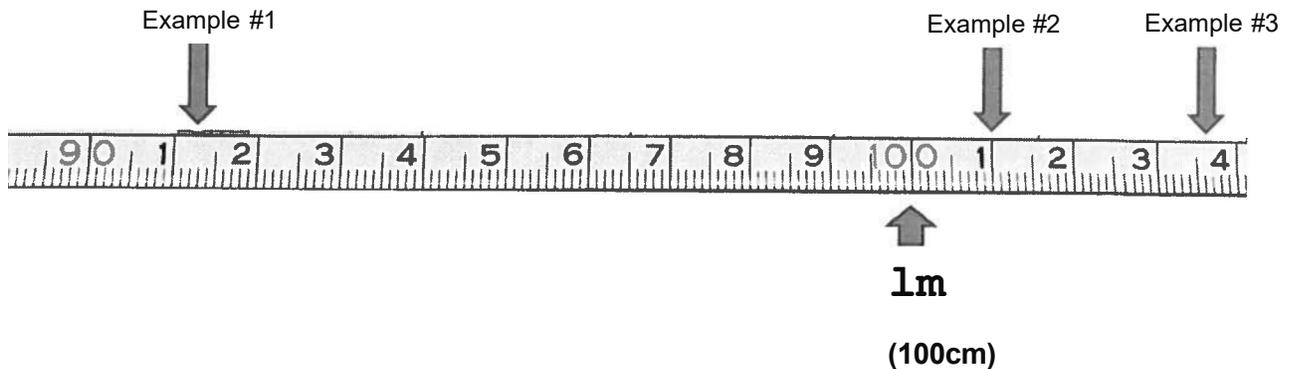
The purpose of this manual is to guide schools, officials and IESA State Series Hosts as we transition to metric measurements in the field events. This manual will provide some basic information regarding metrics, include the new metric state qualifying standards for field events, include some general instructions for using metrics in each of the field events, explain how the IESA will address state field event records in metrics, and include a metric to English conversion chart that can be used as a point of reference.

Although metric measurements in the field events are not required for regular season meets, we highly encourage regular season hosts to adopt this method of measurement to help acclimate student athletes, coaches, officials, and spectators to this practice before they experience it throughout the IESA State Series.

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Using the METRIC SYSTEM for Measuring in the Field Events



1. In all field events the measurement shall be to the **nearest lesser centimeter**.
2. So, instead of feet and inches, the measurement will be in **meters and centimeters**.
3. There are **100 centimeters** in **a meter**.
4. For reference, there are 39.37 inches in a meter.

So, let's look at some examples from the illustration above:

What would be the correct measurements in examples # 1,2,& 3

1. 0.91 or 0 meters and 91 centimeters
2. 1.01 or 1 meter and 1 centimeter
3. 1.03 or 1 meter and 3 centimeters (Remember that although the Example #3 arrow is closer to 4 centimeters, we measure using the **nearest lesser centimeter**).

Note: Although most measuring tapes used for track and field have the English measurements on one side of the tape and the metric measurements on the other side of the tape, it is possible that some measuring tapes will only include the English measurements. Therefore, it would be a good idea to **check your track and field measuring tapes prior to conducting meets to make sure that they can accommodate metric measurements**.



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IESA BOYS AND GIRLS FIELD EVENT QUALIFYING STANDARDS

To qualify in a field event for the IESA State Final Meet, an athlete must place 1st in the field event at the IESA Sectional Meet. For athletes who do not achieve 1st, he/she must achieve the qualifying standard listed for that event.

Please see the qualifying standards listed [online](#).

Note: The field event qualifying standards listed online show both the metric distances/heights along with the English distances/heights in parenthesis. The metric measurements will be used in determining qualifying marks for all field events. The English measurement is only listed for convenience and are not necessarily exact conversions.

Therefore, at the sectional meets, the metric distances/heights are what will be used to determine if a qualifying standard has been met by a competitor. In other words, the English conversions listed in parenthesis will not be used or considered to determine if a qualifying standard was met.

IESA STATE SERIES FIELD EVENT ENTRIES AND SEEDING

Again, it is highly encouraged to expose student-athletes, coaches, officials, and spectators to using metric measurements during the regular track and field season; however, it is not required. As previously stated, metric measurements will be the only method used throughout the IESA State Series.

Completing Field Event Entries in the List of Participants

As in the past, when completing your Participant Information, every field event entry should be accompanied by the participants best distance/height for the season in that field event. In the event that a participant entry for a field event was only able to secure an English measurement during the regular season, then the coach can enter the English distance/height for seeding. However, when the entry is saved, athletic.net will automatically convert the English distance/height to metric (See illustration below).

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METRICS AND THE HORIZONTAL JUMPS

Long Jump

Per NFHS Rule 6-9, keep the following in mind as it pertains to metrics in the long jump and triple jump:

Runway and Pit

Any measurements of runway and pit dimensions can be done using either the metric or English system.

Runway Length	Minimum of 39.62 meters (130-0) Recommended 45 meters (147-6) from the long jump foul line
Runway width	Between 1.07 meters (42 in.) and 1.22 meters (48 in.)
Pit Length	7 meters (23-0) if constructed after 2019 (if before 2019 then the minimum length is 4.572 meters (15.0))
Pit Width	Minimum of 2.75 meters (9-0)
Pit Depth	30 centimeters (12 in.) of sand or other soft material

Take-off Boards

Since take-off boards are customarily built into the runway or painted onto the runway, the take-off board distances from the pit may have been established using either the metric or the English system. Additionally, the games committee can establish if alternate boards are permissible.

Suggested take-off board distances: Girls and Boys Long Jump - 2.5 meters (8-0)

Measuring Device

Per NFHS Rules, the measuring device shall be made with non-stretchable tape such as fiberglass, nylon, steel, or a certified scientific measurement device (laser). **Measuring tapes must be able to measure in metric units.**

All fair long and triple jump attempts must be measured perpendicularly to the foul line from the point in the pit touched by the person or the apparel of the person which is nearest the foul line. **All measurements must be to the nearest lesser centimeter.** The distance of the jump shall be stated loudly/clearly in meters and centimeters.

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METRIC FIELD EVENT INFORMATION

METRICS AND THE VERTICAL JUMPS

High Jump

Per NFHS Rule 6-4, keep the following in mind as it pertains to metrics in the high jump:

Landing Pad

Any measurements of the landing pad dimensions can be done using either the metric or English system.

Pad width	Not less than 4.80 meters (16-0)
Pad depth	Not less than 2.40 meters (8-0)
Pad thickness	60 centimeters (24in.) foam rubber or shock-absorbing synthetic soft material OR 45 centimeters (18in.) encased commercially compressed foam rubber mattress

Note: if landing pad is made up of two or more sections, then a common cover must extend over all sections.

Standards and Non-metal Crossbar

Any measurements of the standard or crossbar dimensions can be done using either the metric or English system:

- Standards - must be at least 12 feet apart with rectangular planes that support and run parallel to the crossbar. The planes shall measure 1 ½ in. by 2 3/8in.
- **Most high jump standards show both the metric and English measurements.** However, it may be possible that some standards do not include metric measurements.
- If standards do not show metric measurements, it is not necessary to purchase new standards as measurements can be made with a non-stretchable tape such as fiberglass, nylon, steel or certified scientific measurement device (laser).
- These measurements should always be made from the surface of the take-off point to the lowest point on the top of the crossbar.

Non-metal Crossbar length:	minimum of 3.66 meters (12-0) maximum of 4.52 meters (14-10)
Non-metal Crossbar weight:	not more than 5 lbs.

Starting Height & Successive Heights of the Crossbar for the High Jump

NFHS Rule 3-2-3j establishes that this may be determined by the Games Committee. **However, regardless of the starting height, a suggestion for determining successive heights using metric measurements includes:**

- Raise the crossbar 6 centimeters (approx. 2in.) until there is a narrow field of competitors remaining. At which point, successive heights can be reduced to 3 centimeters (approx. 1in.). When only one competitor remains and is declared the winner, then that competitor can determine successive heights.
- **Breaking ties:** procedures for breaking ties in the high jump are explained in NFHS Rule 6-3-2b. Any time 6-3-2b is applied and a "jump off" is required, then the rules explain that the crossbar will either be raised or lowered during the "jump off" in increments of 3 centimeters (approx. 1in.).

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Pole Vault

Per NFHS Rule 6-4, keep the following in mind as it pertains to metrics in the pole vault:

Runway and Landing Pad

For complete measurements concerning the pole vault landing system and equipment, reference NFHS Rule 6-5.

Any measurements of the runway or landing pad dimensions can be done using either the metric or English system.

Runway length:	Minimum 40 meters (130-0) Recommended 45 meters (147-6)
Runway width:	Between 1.07 meters (42 in.) and 1.22 meters (48 in.)
Pad width:	Minimum 6 meters (19-8)
Pad depth:	Minimum 6.1468 meters (20-2)
Pad depth from back of planting box:	Minimum 5 meters (16-5)
Front buns width:	Minimum 5 meters (16-5)
Cutout width for planting box:	Maximum 914 millimeters (36 in.)

Standards and Non-metal Crossbar

Any measurements of the standard or crossbar dimensions can be done using either the metric or English system.

Standards

- The width between the pins that support the non-metal crossbar shall be no less than 4.16 meters (13-8) and no more than 4.48 meters (14-8).
- The pins must be 13 millimeters (1/2 in.) thick and no more than 76 millimeters (3 in.) long.
- **Most pole vault standards show both the metric and English measurements.** However, it may be possible that some standards do not include metric measurements.
- **If standards do not show metric measurements, it is not necessary to purchase new standards as measurements can be made with a non-stretchable tape such as fiberglass, nylon, steel or certified scientific measurement device (laser).**
- These measurements should always be made from the surface of take-off point to the lowest point on the top of the crossbar.

Non-metal crossbar length:	Minimum of 4.47 meters (14-8) Maximum of 4.52 meters (14-0)
Non-metal crossbar weight:	Not more than 5 lbs.

Positioning of Standards

When the competitor has the standards set to position the crossbar at a specific depth, the metric measurement shall be used if possible. It may be positioned between 45.7 centimeters (18 in.) and 80 centimeters (31 ½ in.).

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Competitor Weigh-in and Poles

As per NFHS Rule 6-5-3 and 4, a competitor's weight must be at or below the manufacturer's pole rating. This is determined through a weigh-in and pole inspection prior to the meet. **The competitor's weight will still be measured using the English system (lbs./oz.) for the purpose of determining what their pole rating must be.** As a reminder, competitors cannot use variable weight poles.

Starting Height & Successive Heights of the Crossbar for the Pole Vault

NFHS Rule 3-2-3j establishes that this may be determined by the games committee. **However, regardless of the starting height, a suggestion for determining successive heights using metric measurements includes:**

- Raise the crossbar 16 centimeters (approx. 6 in.) until there is a narrow field of competitors remaining. At which point, successive heights can be reduced to 8 centimeters (approx. 3in.). When only one competitor remains and is declared the winner, then that competitor can determine successive heights.
- **Breaking ties:** procedures for breaking ties in the pole vault are explained in NFHS Rule 6-3-2b. Any time 6-3-2b is applied and a "jump off" is required, then the rules explain that the crossbar will either be raised or lowered during the "jump off" in increments of 8 centimeters (approx. 3in.).

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METRICS AND THE THROWING EVENTS

Discus Throw

Per NFHS Rule 6-6, keep the following in mind as it pertains to metrics in the Discus:

Boys and Girls Discus	
Weight	1.0kg
Diameter	min.180mm max. 182mm
Diameter of core	min. 50mm max. 57mm
Thickness of center	min. 37mm max. 39mm
Rim thickness ¼" from edge	min.12mm max. 13mm
Radius of edge	6mm

Note: If possible, the implements shall be weighed/measured using metric units. English implement weights/measurements can be found in the NFHS Rule book (6-6-2).

Throwing Circle

Any measurements of throwing circle can be done using either the metric or English system.

Circle Diameter	2.50 meters (8-2 ½)
Circle band	1.9 centimeters thick (¾ inch)
Painted line (in lieu of band)	5 centimeters wide (2 inches)
Painted line (establishing back ½ of circle)	5 centimeters wide (2 inches); 20 centimeters long (8 inches)

Note: For information on setting up the throwing sector and discus cage, reference appendix A and B in the NFHS Rule Book.

Measuring Device

Per NFHS Rules, the measuring device shall be made with non-stretchable tape such as fiberglass, nylon, steel, or a certified scientific measurement device (laser). **Measuring tapes must be able to measure in metric units.**

All fair discus throw attempts must be measured from the nearest edge of the first mark made by the discus to the inside edge of the throwing circle nearest such mark, measured along an extended radius of the circle. All measurements must be to the nearest lesser centimeter.

The distance of the throw shall be stated loudly/clearly in meters and centimeters.

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Shot Put

Per NFHS Rule 6-7, keep the following in mind as it pertains to metrics in the Shot Put.

Boys and Girls Shot Put	
Weight	4.0kg
Diameter	min. 95mm max. 110mm
Circumference	min. 29.84mm max. 34.56mm

Note: If possible, the implements shall be weighed/measured using metric units. English implement weights/measurements can be found in the NFHS Rule book (6-7-2).

Throwing Circle

Any measurements of throwing circle can be done using either the metric or English system.

Circle Diameter	2.134 meters (7-0)
Circle band	1.9 centimeters thick (3/4 inch)
Painted line (in lieu of band)	5 centimeters wide (2 inches)
Stopboard (arc shaped, constructed of hard surfaced material)	1.22 meters (4-0) long along inside surface 10 centimeters (4 inches) high 11.4 centimeters (4 ½ inches) wide
Painted line (establishing back ½ of circle)	5 centimeters wide (2 inches); 20 centimeters long (8 inches)

Note: For information on setting up the throwing sector, reference NFHS Rules 6-7-5 as well as appendix B in the NFHS Rule Book.

Measuring Device

Per NFHS Rules, the measuring device shall be made with non-stretchable tape such as fiberglass, nylon, steel, or a certified scientific measurement device (laser). **Measuring tapes must be able to measure in metric units.**

All fair shot attempts must be measured from the nearest edge of the first mark made by the shot to the inside edge of the stopboard nearest such mark, measured along an extended radius of the circle. **All measurements must be to the nearest lesser centimeter.** The distance of the throw shall be stated loudly/clearly in meters and centimeters.



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IESA STATE FIELD EVENT RECORDS

Current State Records

IESA Boys and Girls State Field Event Records have been converted to their exact metric measurements. These conversions were NOT rounded to the nearest centimeter. This was done to provide full metric credit to state record holders in the field events.

Breaking State Records

From 2023 forward, only the metric distance measured to the nearest lesser centimeter can be used to establish a new record in a field event.

For example, if the IESA record in the discus established by Kelsey Card with a throw of 51.0032m were to be broken, the throw would need to be 51.01m (in other words, the next highest centimeter).

IESA FIELD EVENT MARK CONVERSION REFERENCE CHART- METRIC TO ENGLISH

Metric Distance	Imperial Equivalent (approximate)
1.00	3'03 1/4"
1.10	3'07 1/4"
1.20	3'11 1/4"
1.30	4'3 1/4 "
1.40	4'7"
1.50	4'11"
1.60	5'3"
1.70	5'7"
1.80	5'10 3/4"
1.90	6'2 3/4"
2.00	6'06 1/2"
2.10	6'10 1/2"
2.20	7'2 1/2"
2.30	7'6 1/2"
2.40	7'10 1/2"
2.50	8'2 1/2"
2.60	8'6 1/4"
2.70	8'10 1/4"
2.80	9'2 1/4"
2.90	9'6 1/4"
3.00	9'10"
3.10	10'2"
3.20	10'6"
3.30	10'10"
3.40	11'1 3/4"
3.50	11'5 3/4"
3.60	11'9 3/4"
3.70	12'1 1/2"
3.80	12'5 1/2"
3.90	12'9 1/2"
4.00	13'1 1/2"
4.10	13'5 1/4"
4.20	13'9 1/4"
4.30	14'1 1/4"
4.40	14'5 1/4"
4.50	14'9"
4.60	15'1"
4.70	15'5"
4.80	15'9"
4.90	16'0 3/4"

Metric Distance	Imperial Equivalent (approximate)
5.00	16'4 3/4"
5.10	16'8 3/4"
5.20	17'0 3/4"
5.30	17'4 1/2"
5.40	17'8 1/2"
5.50	18'0 1/2"
5.60	18'4 1/2"
5.70	18'8 1/4"
5.80	19'0 1/4"
5.90	19'4 1/4"
6.00	19'8 1/4"
6.10	20'0"
6.20	20'4"
6.30	20'8"
6.40	21'0"
6.50	21'3 3/4"
6.60	21'7 3/4"
6.70	21'11 3/4"
6.80	22'3 3/4"
6.90	22'7 1/2"
7.00	22'11 1/2"
7.10	23'3 1/2"
7.20	23'7 1/2"
7.30	23'11 1/4"
7.40	24'3 1/4"
7.50	24'7 1/4"
7.60	24'11 1/4"
7.70	25'3"
7.80	25'7"
7.90	25'11"
8.00	26'3"
8.10	26'6 3/4"
8.20	26'10 3/4"
8.30	27'2 3/4"
8.40	27'6 3/4"
8.50	27'10 1/2"
8.60	28'2 1/2"
8.70	28'6 1/2"
8.80	28'10 1/2"
8.90	29'2 1/4"

IESA FIELD EVENT MARK CONVERSION REFERENCE CHART- METRIC TO ENGLISH

Metric Distance	Imperial Equivalent (approximate)
9.00	29'6 ¼"
9.10	29'10 ¼"
9.20	30'2 ¼"
9.30	30'6"
9.40	30'10"
9.50	31'2"
9.60	31'6"
9.70	31'9 ¾"
9.80	32'1 ¾"
9.90	32'5 ¾"
10.00	32'9 ¾"
10.10	33'1 ½"
10.20	33'5 ½"
10.30	33'9 ½"
10.40	34'1 ½"
10.50	34'5 ¼"
10.60	34'9 ¼"
10.70	35'1 ¼"
10.80	35'5 ¼"
10.90	35'9"
11.00	36'1"
11.10	36'5"
11.20	36'9"
11.30	37'0 ¾"
11.40	37'4" ¾"
11.50	37'8 ¾"
11.60	38'0 ¾"
11.70	38'4 ½"
11.80	38'8 ½"
11.90	39'0 ½"
12.00	39'4 ½"
12.10	39'8 ¼"
12.20	40'0 ¼"
12.30	40'4 ¼"
12.40	40'8 ¼"
12.50	41'0"
12.60	41'4"
12.70	41'8"
12.80	42'0"
12.90	42'3 ¾"

Metric Distance	Imperial Equivalent (approximate)
13.00	42'7 ¾"
13.10	42'11 ¾"
13.20	43'3 ¾"
13.30	43'7 ½"
13.40	43'11 ½"
13.50	44'3 ½"
13.60	44'7 ½"
13.70	44'11 ¼"
13.80	45'3 ¼"
13.90	45'7 ¼"
14.00	45'11 ¼"
14.10	46'3"
14.20	46'7"
14.30	46'11"
14.40	47'3"
14.50	47'6 ¾"
14.60	47'10 ¾"
14.70	48'2 ¾"
14.80	48'6 ¾"
14.90	48'10 ½"
15.00	49'2 ½"
15.10	49'6 ½"
15.20	49'10 ½"
15.30	50'2 ¼"
15.40	50'6 ¼"
15.50	50'10 ¼"
15.60	51'2 ¼"
15.70	51'6"
15.80	51'10"
15.90	52'2"
16.00	52'6"
16.10	52'9 ¾"
16.20	53'1 ¾"
16.30	53'5 ¾"
16.40	53'9 ½"
16.50	54'1 ½"
16.60	54'5 ½"
16.70	54'9 ½"
16.80	55'1 ¼"
16.90	55'5 ¼"

IESA FIELD EVENT MARK CONVERSION REFERENCE CHART- METRIC TO ENGLISH

Metric Distance	Imperial Equivalent (approximate)
17.00	55'9 ¼"
17.10	56'1 ¼"
17.20	56'5"
17.30	56'9"
17.40	57'1"
17.50	57'5"
17.60	57'8 ¾"
17.70	58'0 ¾"
17.80	58'4 ¾"
17.90	58'8 ¾"
18.00	59' ½"
18.10	59'4 ½"
18.20	59'8 ½"
18.30	60'0 ½"
18.40	60'4 ¼"
18.50	60'8 ¼"
18.60	61'0 ¼"
18.70	61'4 ¼"
18.80	61'8"
18.90	62'0"
19.00	62'4"
19.10	62'8"
19.20	62'11 ¾"
19.30	63'3 ¾"
19.40	63'7 ¾"
19.50	63'11 ¾"
19.60	64'3 ½"
19.70	64'7 ½"
19.80	64'11 ½"
19.90	65'3 ½"
20.00	65'7 ¼"
20.10	65'11 ¼"
20.20	66'3 ¼"
20.30	66'7 ¼"
20.40	66'11"
20.50	67'3"
20.60	67'7"
20.70	67'11"
20.80	68'2 ¾"
20.90	68'6 ¾"

Metric Distance	Imperial Equivalent (approximate)
21.00	68'10 ¾"
21.10	69'2 ¾"
21.20	69'6 ½"
21.30	69'10 ½"
21.40	70'2 ½"
21.50	70'6 ½"
21.60	70'10 ¼"
21.70	71'2 ¼"
21.80	71'6 ¼"
21.90	71'10 ¼"
22.00	72'2"
22.10	72'6"
22.20	72'10"
22.30	73'2"
22.40	73'5 ¾"
22.50	73'9 ¾"
22.60	74'1 ¾"
22.70	74'5 ¾"
22.80	74'9 ½"
22.90	75'1 ½"
23.00	75'5"
23.10	75'9"
23.20	76'01"
23.30	76'5"
23.40	76'09"
23.50	77'01"
23.60	77'05"
23.70	77'09"
23.80	78'01"
23.90	78'04"
24.00	78'08"
24.10	79'0"
24.20	79'04"
24.30	79'08"
24.40	80'0"
24.50	80'04"
24.60	80'08"
24.70	81'0"
24.80	81'04"
24.90	81'08"

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Metric Distance	Imperial Equivalent (approximate)
25.00	82'0"
25.10	82'04"
25.20	82'08"
25.30	83'0"
25.40	83'03"
25.50	83'07"
25.60	83'11"
25.70	84'03"
25.80	84'07"
25.90	84'11"
26.00	85'03"
26.10	85'07"
26.20	85'11"
26.30	86'03"
26.40	86'07"
26.50	86'11"
26.60	87'03"
26.70	87'07"
26.80	87'11"
26.90	88'03"
27.00	88'06"
27.10	88'10"
27.20	89'02"
27.30	89'06"
27.40	89'10"
27.50	90'02"
27.60	90'06"
27.70	90'10"
27.80	91'02"
27.90	91'06"
28.00	91'10"
28.10	92'02"
28.20	92'06"
28.30	92'10"
28.40	93'02"
28.50	93'06"
28.60	93'09"
28.70	94'01"
28.80	94'05"
28.90	94'09"

Metric Distance	Imperial Equivalent (approximate)
29.00	95'01"
29.10	95'05"
29.20	95'09"
29.30	96'01"
29.40	96'05"
29.50	96'09"
29.60	97'01"
29.70	97'05"
29.80	97'09"
29.90	98'01'
30.00	98'05"
30.10	98'09"
30.20	99'00"
30.30	99'04"
30.40	99'08"
30.50	100'00"
30.60	100'04"
30.70	100'08"
30.80	101'00"
30.90	101'04"
31.00	101'08"
31.10	102'00"
31.20	102'04"
31.30	102'08"
31.40	103'00"
31.50	103'04"
31.60	103'08"
31.70	104'00"
31.80	104'03"
31.90	104'07"
32.00	104'11"
32.10	105'03"
32.20	105'07"
32.30	105'11"
32.40	106'03"
32.50	106'07"
32.60	106'11"
32.70	107'03"
32.80	107'07"
32.90	107'11"

IESA FIELD EVENT MARK CONVERSION REFERENCE CHART- METRIC TO ENGLISH

Metric Distance	Imperial Equivalent (approximate)
33.00	108'03"
33.10	108'07"
33.20	108'11"
33.30	109'03"
33.40	109'06"
33.50	109'10"
33.60	110'02"
33.70	110'06"
33.80	110'10"
33.90	111'02"
34.00	111'06"
34.10	111'10"
34.20	112'02"
34.30	112'06'
34.40	112'10"
34.50	113'02"
34.60	113'06"
34.70	113'10"
34.80	114'02"
34.90	114'05"
35.00	114'09"
35.10	115'01"
35.20	115'05"
35.30	115'09"
35.40	116'01"
35.50	116'05"
35.60	116'09"
35.70	117'01"
35.80	117'05"
35.90	117'09"
36.00	118'01"
36.10	118'05"
36.20	118'09"
36.30	119'01"
36.40	119'05"
36.50	119'08"
36.60	120'00"
36.70	120'04"
36.80	120'08"
36.90	121'00"

Metric Distance	Imperial Equivalent (approximate)
37.00	121'04"
37.10	121'08"
37.20	122'00"
37.30	122'04"
37.40	122'08"
37.50	123'00"
37.60	123'04"
37.70	123'08"
37.80	124'00"
37.90	124'04"
38.00	124'08"
38.10	124'11"
38.20	125'03"
38.30	125'07"
38.40	125'11"
38.50	126'03"
38.60	126'07"
38.70	126'11"
38.80	127'03"
38.90	127'07"
39.00	127'11"
39.10	128'03"
39.20	128'07"
39.30	128'11"
39.40	129'03"
39.50	129'07"
39.60	129'11"
39.70	130'02"
39.80	130'06"
39.90	130'10"
40.00	131'02"
40.10	131'06"
40.20	131'10"
40.30	132'02"
40.40	132'06"
40.50	132'10"
40.60	133'02"
40.70	133'06"
40.80	133'10"
40.90	134'02"